LITTLETON LINKAGES
Trail Study

October 2023

Littleton

LITTLETON LINKAGES
TRAIL STUDY

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Prepared for

City of Littleton

Prepared by

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ARAPAHOE COUNTY OPEN SPACES

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Introduction

Littleton has one of the best collections of regional trail segments in the entire metro area. The shady, secluded character of the High Line Canal Trail is ideal for casual walks, runs, and bike rides, while the Mary Carter Greenway Trail is great for commutes and long weekend rides. These trails also lead to some neat places – Downtown Littleton, Chatfield State Park, Aspen Grove Mall. It is a wonderful city for outdoor recreation, but accessing these trails and destinations without a car can be a challenge depending on where you are coming from. There are busy roads, rail corridors, and natural features to contend with – gaps in the trail network make these barriers difficult to get around on foot for people in some Littleton neighborhoods. The Littleton Linkages Trail Study was conducted to evaluate those network gaps and develop recommendations for filling them, giving everyone safe and comfortable options for accessing Littleton's great trails.

Planning Process

The Littleton Linkages Trail Study was a comprehensive and cohesive effort of community engagement, network assessment, and concept development & evaluation. Each step in the process built upon previous steps to ensure consistency and a final set of recommendations that align with the project's initial intent.

Value Framework

Early on, a value framework building from the City's Transportation Master Plan (TMP) goals was established to guide the planning process. The TMP is the overarching guiding document for mobility in Littleton so it was important for Littleton Linkages to be consistent with its goals and outcomes. More specific criteria associated with these five value statements were used later for concept evaluation and prioritization.

Connected
The local trail network integrates with regional trails and on-street facilities to connect people and places

Healthy
The local trail network is safe to use and access

Inclusive
The local trail network serves people of all abilities, lifestyles, and backgrounds equitably

Prosperous
The local trail network contributes to a high quality of life in Littleton

Sustainable
The local trail network supports sustainable mobility and optimizes the public good

Existing Conditions

A key early step in the planning process was an assessment of the local trail network today – how well it connects the community, how well it accommodates its users, and how well it integrates with other transportation infrastructure. This assessment focused on the following elements:

- **Planning Context** – previous & concurrent relevant plans, community demographics
- **Existing Network Overview** – trail widths & surfaces, trail crossings, connectivity to parks and on-street facilities
- **Network Assessment** – school & transit access, bicycle/pedestrian crash history, ADA compliance, short-trip analysis

The findings and observations from the various analyses conducted as part of the existing conditions assessment were summarized in a series of primary opportunities and constraints to inform identification of potential improvement concepts more directly. The full existing conditions assessment can be found in **Appendix A**.

Key Network Opportunities

- Supplement and/or complement the low-stress on-street network, especially near schools
- Parks with missing/narrow sidewalk connections
- Parks without safe pedestrian crossings
- Known ADA issues along/near trails
- Additional neighborhood connections to regional trails
- Little's Creek Trail enhancements to better integrate with Downtown Littleton
- Mineral Avenue Trail safety enhancements, especially at major intersections

Key Network Constraints

- Ability to expand east-west trail connectivity is restricted by the South Platte River, Santa Fe Drive, and rail lines
- Outside of designated parks and open spaces, there are few potential locations in Littleton for new trail alignments (sidewalks may be designated as trails)
- Arterials bisecting trails and/or limiting access to parks and trails

Community Engagement

The engagement effort was split into two primary phases: soon after project onset to understand the community's thoughts on the existing trail network, especially issues and opportunities; and after initial concept development to collect input on the improvement ideas and inform prioritization. Specific engagement activities and strategies, which are detailed more in the following chapter, included:

- A core project webpage
- Several iterations of a digital commenting map
- An online survey during the first phase of engagement
- In-person "pop-up" events during the second phase of engagement

Concept Development & Evaluation

Improvement concepts for the local trail network in Littleton were developed based on existing conditions findings, initial community input, collaboration with the stakeholder groups, and a series of concept brainstorming sessions with City staff. Once an initial set of concepts was identified – split into three primary categories: Existing Trail Improvements, Trail Crossing Improvements, New Trail Connections – they were shared with the public and stakeholders for comment and refined accordingly. Concurrently, a set of 12 evaluation criteria building directing from the study value framework were developed to assess the relative merits of each concept:

- Network Connections
- New Trail
- New Crossing
- Conflict Improvement (Crossing)
- Conflict Improvement (Segment)
- Potential Users
- ADA Issues
- Equity Area
- Proximity to School/Park
- Proximity to Activity Area
- Transit Connection
- Constructability

Quantitative metrics were identified for each criterion, allowing all the concepts to be "scored" based on how well they support the study values. Those scores were then used in the final technical step of the process, concept prioritization.

Concept Prioritization

To help focus future investments on the most beneficial improvement concepts, all the concepts were ultimately ranked based on a weighted scoring framework. The raw scores from the conceptual evaluation process did not equally consider each of the five study values because there are varying numbers of criteria associated with the values, so a weighting mechanism that equally considers relevance to all the values was devised and applied to the results. Because crossing improvements, existing trail improvements, and new trail connections are difficult to compare to one another, the ranking was done within each of those three concept categories, rather than ranking all the concepts together. The prioritization process focused on concept benefits, so costs were not directly considered; however, a separate ease of implementation rating – considering factors such as cost, right-of-way, and topography – was also developed for each concept to provide insight into the relative difficulty of bringing each one to implementation.

Public & Stakeholder Engagement

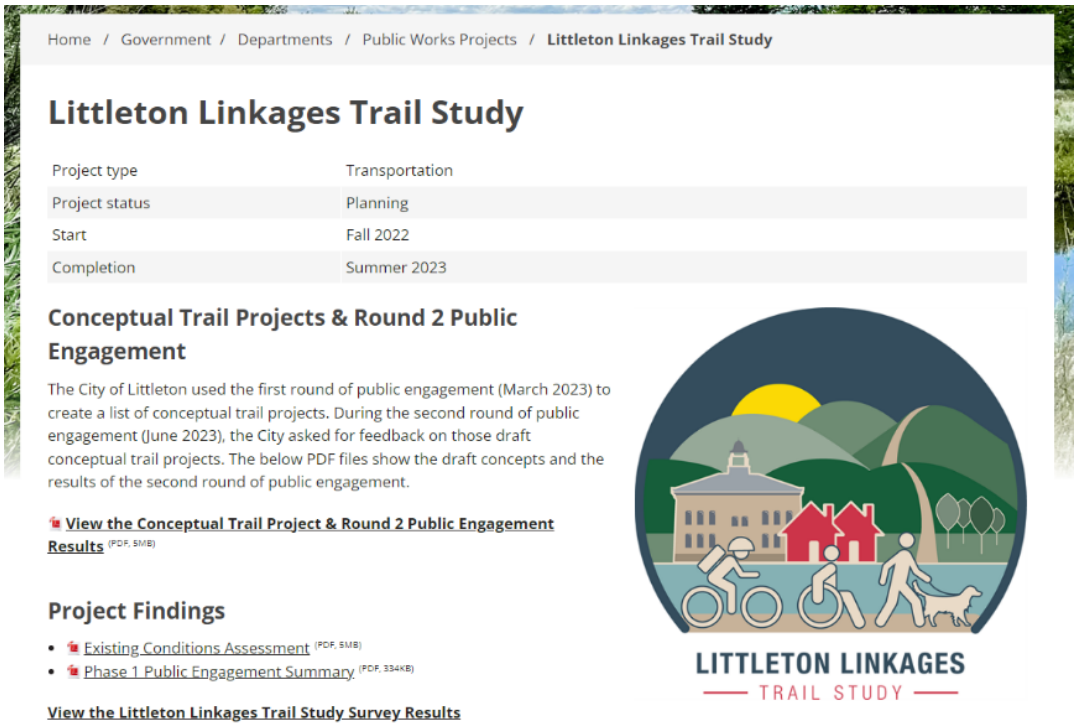
Perhaps more than any other transportation facility, trails are a deeply valued public asset. As such, public engagement was particularly critical for this study – Littleton's trail system needs to be enhanced and expanded in a manner that aligns with how the community wants to use it. This chapter summarizes outreach efforts over the course of the study. A full compilation of outreach efforts and feedback can be found in **Appendix B**.

Project Webpage

A dedicated webpage on the City of Littleton website served as a central digital clearinghouse for information throughout the course of the study.

Information provided on the webpage (Littleton Linkages Webpage) included:

- Key project updates
- Project deliverables
- Input opportunity notices
- Project team contact information



In addition to the main project webpage, social media, newsletters, and hard-copy fliers were leveraged to spread word about the study, with primary pushes during both engagement phases. This included posts on X (Twitter) and Facebook; articles in the print and online versions of the Littleton Report; and printed project-specific fliers distributed at various locations throughout Littleton. **Table 1** summarizes all the engagement activities over the course of the study.

Table 1. Engagement Overview

Engagement Event/Activity	Phase	Metrics
Online Survey Online survey about local trail usage, preferences, and barriers	Phase 1	• 244 visitors to survey webpage • 71 survey responses
Phase 1 Commenting Map Online commenting map for community members to provide location-specific input on local trail issues and opportunities	Phase 1	• 73 comments
Trail Signs Small reusable signs with the project logo and a link and QR code for the webpage were deployed in parks throughout Littleton	Phase 1	• 15 signs deployed
Phase 2 Commenting Map/Survey Online map of draft trail improvement concepts with prioritization surveys by concept type and City Council district	Phase 2	• 703 visits to the webpage • 171 unique visitors • 80 survey responses • 16 additional comments
Sterne Park Pop-Up Project specific "pop-up" event on Saturday, June 10th at Sterne Park – posterboard versions of the Phase 2 commenting map were shared for community members to review and identify priority concepts	Phase 2	• Several dozen community members engaged with
Geneva Park Meet, Greet, and Eat Project-specific table at the Meet, Greet, and Eat event on Wednesday, June 21st – handouts with webpage links and QR codes were distributed to community members	Phase 2	• Several dozen community members engaged with

Littleton Report Article Brief articles about the study were included in the February/March and May editions of the Littleton Report (print and online versions)	Phase 1 & 2	• Articles in two editions, each sent to full Littleton Report distribution list
Social Media The City's Facebook and X (Twitter) accounts were leveraged to share information about engagement opportunities during both Phase 1 and Phase 2 outreach	Phase 1/2	• 2/6 FB Post – 15 reactions, 4 comments, 5 shares • 2/21 FB Post – 9 reactions, 7 shares • 6/6 FB Post – 8 reactions, 3 shares • 7/7 FB Post – 9 likes, 1 comment, 3 shares • 2/6 X Post – 1 like, 2 shares, 1,080 views • 2/21 X Post – 4 likes, 3 shares, 1,943 views • 6/6 X Post – 3 likes, 502 views

Stakeholder Groups

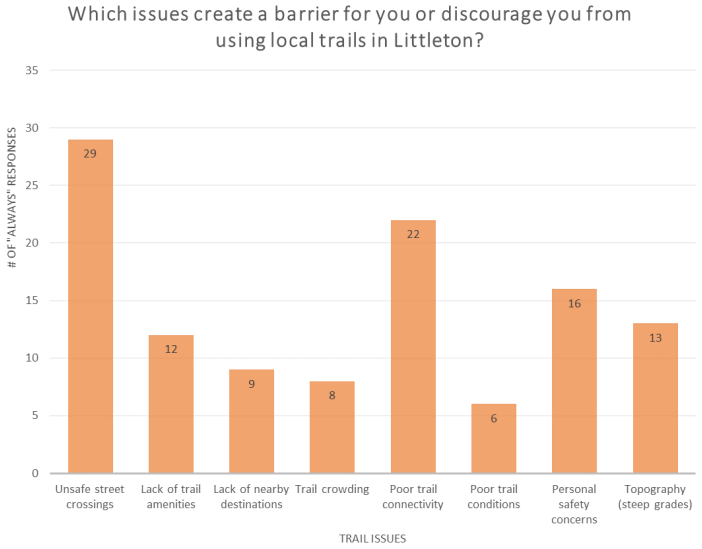
Two stakeholder groups were established to help support and guide the planning process: a Technical Advisory Committee (TAC), composed of staff from Littleton and partner agencies with roles in trail construction and maintenance; and a Stakeholder Committee (SC), composed of representatives from other organizations in Littleton with a concerted interested in the trail network. Specific involved agencies and organizations included:

- City of Littleton – TAC & SC
- South Suburban Park & Recreation – TAC & SC
- Arapahoe County Open Spaces – TAC
- High Line Canal Conservancy – TAC
- Littleton Public Schools – SC
- Colorado Center for the Blind – SC
- South Metro Land Conservancy – SC

Both groups met three times over the course of the study. Their roles and responsibilities included: providing agency insight into trail issues and opportunities, supporting outreach to the public through their communication channels and contacts, reviewing draft deliverables, and weighing in on project concepts. Additionally, two presentations were given to the Littleton Transportation & Mobility Board, a group of appointed community members that meets monthly to discuss mobility issues and develop policy guidance for consideration by city leadership.

Overview of Engagement Activities & Input

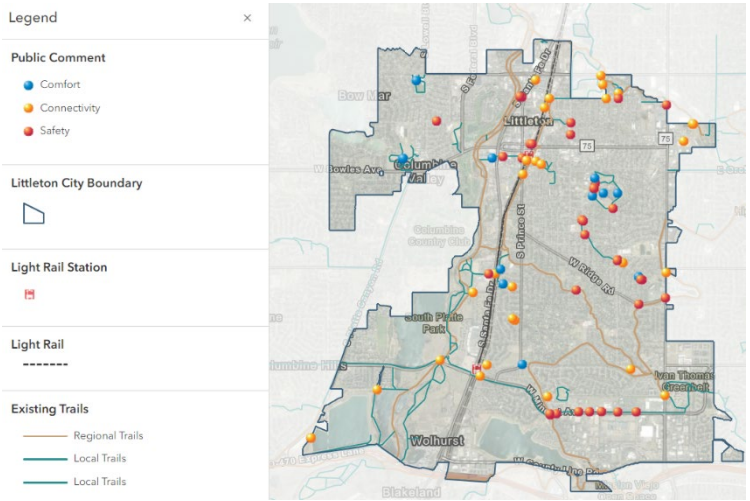
Phase 1 Engagement



The initial phase of public engagement focused on gathering input from community members on the current state of Littleton's local trail network and what types of improvements they would like to see in the future. To capture this input, a digital commenting map and online survey were deployed. The commenting map allowed users to add open-ended comments in one of three categories – Comfort, Connectivity, Safety – to specific geographic locations. The survey asked four questions of respondents related to current trail usage and desired types of improvement, as well as an open-ended question for any other feedback they wished to share with the project team.

A total of 73 comments were added to the map, and the project team provided a specific response to each one. Most specific improvement ideas from the public comments were carried forward into draft concepts; in general, those that were not carried forward were either already going to be addressed by a programmed city project, outside the focus of this study, or deemed infeasible. 71 people took the survey and had a range of responses about how they currently use trails and how they would like to see them improved. Some overarching themes from the open-ended survey question included:

- Street crossings are the most significant barrier to trail usage in Littleton
- Additional trail connections are a substantial need
- Connectivity to the rest of Littleton from the northwest neighborhoods is particularly challenging

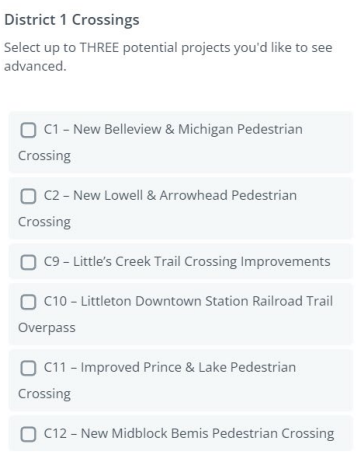


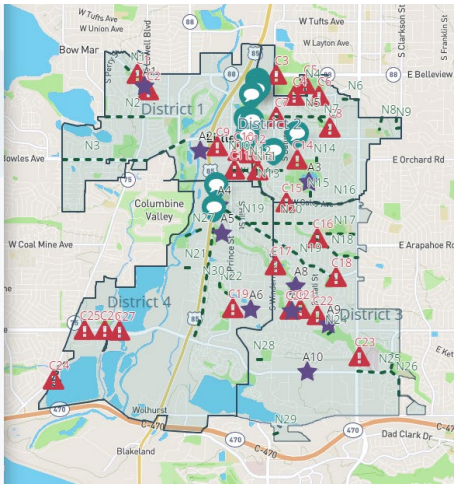
Phase 2 Engagement

The second phase of engagement was conducted after an initial set of draft improvement concepts had been developed and focused on collecting feedback on those concepts. Using the Social Pinpoint platform, a series of map-based mini-surveys broken up by City Council district and concept category were developed that asked participants to identify their priority improvements. The tool also allowed people to provide additional comments on the map. This phase of engagement occurred before the 2023 redistricting process was completed.

To help publicize the Social Pinpoint tool and collect in-person feedback, the study team participated in two "pop-up" style events during the second phase of engagement:

- *Popsicles in the Park* – A standalone event was held on a Saturday morning at Sterne Park, where boards depicting the draft improvement concept maps were shared and members of the public were asked to vote on their priority concepts with stickers
- *Meet, Greet, and Eat* – A project-specific table was set up at this large community event at Geneva Park to share handout maps of the draft improvement concepts and flyers with links to the online tool





80 people participated in this Phase 2 survey, including those who provided input at the in-person events. Types of concepts that generally received high proportions of votes from survey participants include:

- Improvements within or adjacent to local parks
- Major infrastructure improvements (e.g., grade-separation, trail extensions)
- Crossing improvements of relatively busier streets like Windermere Street

The full survey results by district and concept category are presented in **Appendix B**.

Trail Improvement Concepts

Improvement concepts for the local trail network in Littleton were developed based on existing conditions findings, initial community input, collaboration with the stakeholder groups, and a series of concept brainstorming sessions with City staff. Early on during concept development, it was apparent to the team that improvement ideas generally fit into one of three primary categories, which were used to organize the concept development and evaluation steps:

- **Existing Trail Improvements** – improvements to existing local trail segments, such as widening, resurfacing, and realignment.
- **Trail Crossing Improvements** – enhanced bike/ped crossing treatments where trails cross streets, and/or where it is necessary to cross a street to access a trail or a park.
- **New Trail Connections** – new trails through parks and open spaces, and along streets

A total of 69 concepts were ultimately developed for further evaluation and prioritization. **Table 2** below summarizes the number of concepts by category and City Council district, with the maps on the following pages depicting specific concept names and locations (some New Trail concepts are in multiple districts). One New Trail Connection concept in District 1 (N31 – Littleton Community Trail Extension, Railroad to Bemis Street) was added by City staff after public engagement.

Table 2. Improvement Concept Summary

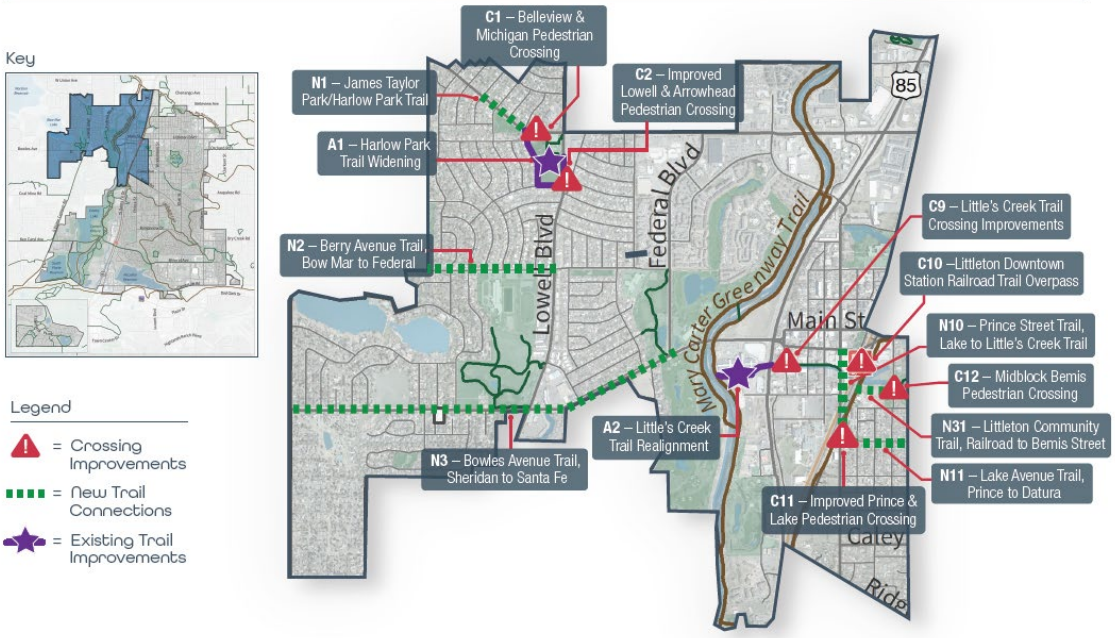
Council District	Existing Trail Improvements	Trail Crossing Improvements	New Trail Connections	**Total**
District 1 – NW Littleton	2 concepts	6 concepts	6 concepts*	**14 concepts**
District 2 – NE Littleton	1 concept	9 concepts	10 concepts	**20 concepts**
District 3 – SE Littleton	4 concepts	7 concepts	11 concepts	**22 concepts**
District 4 – SW Littleton	4 concepts	5 concepts	6 concepts	**15 concepts**
Total	**11 concepts**	**27 concepts**	**31 concepts**	***69***

**N31 – Littleton Community Trail Extension, Railroad to Bemis Street was added by City staff after public engagement*

LITTLETON LINKAGES
TRAIL STUDY

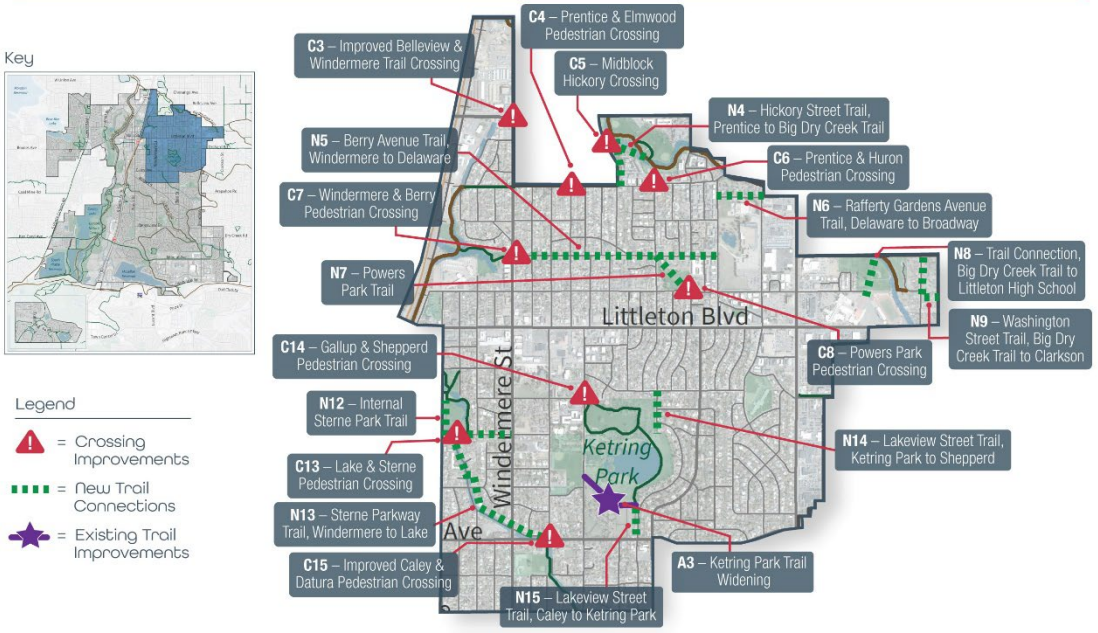
LITTLETON LINKAGES IMPROVEMENT CONCEPTS

DISTRICT 1



LITTLETON LINKAGES IMPROVEMENT CONCEPTS

DISTRICT 2



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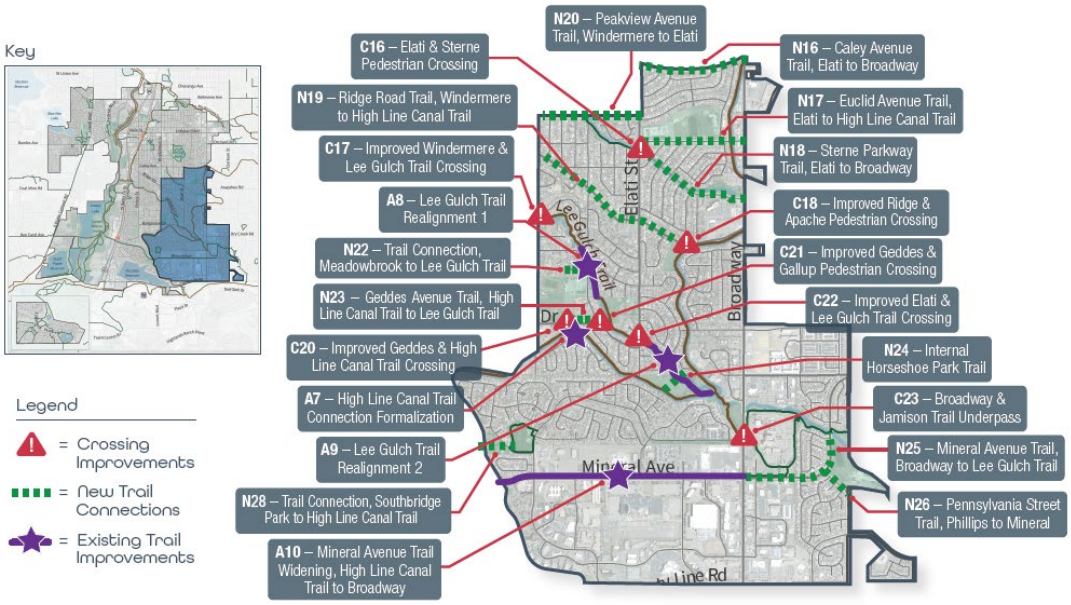
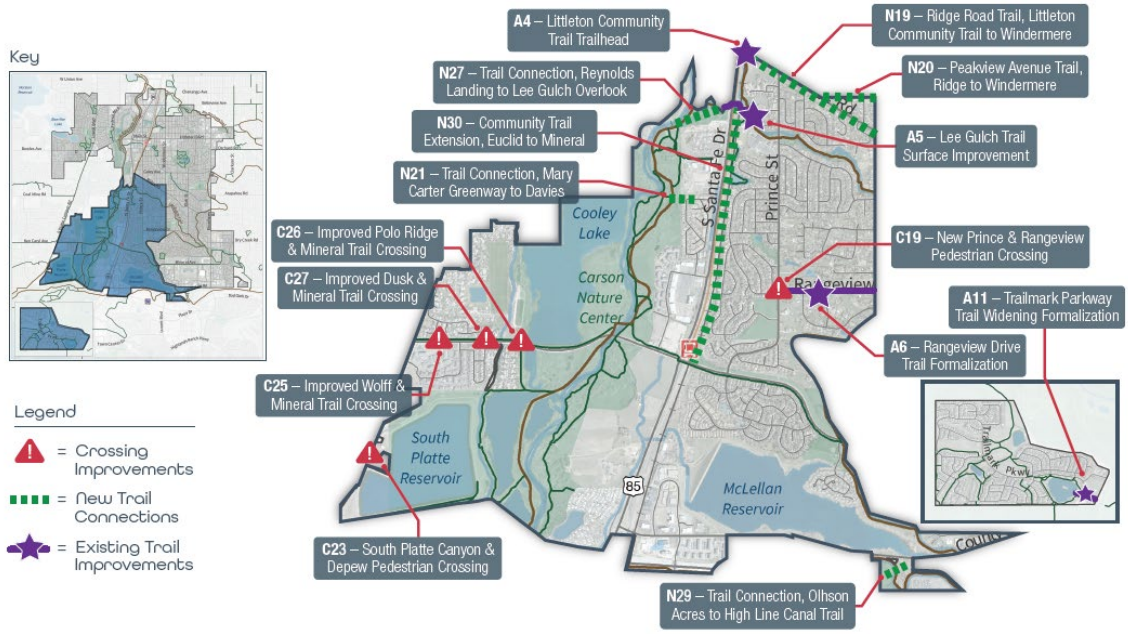
LITTLETON LINKAGES IMPROVEMENT CONCEPTS

DISTRICT 3



LITTLETON LINKAGES IMPROVEMENT CONCEPTS

DISTRICT 4



Pedestrian Crossing Guidance

Pedestrian crossing treatments arose as a key area of interest to City staff and stakeholders during the concept development process. To support future implementation of the recommended crossing improvements from this study and broader evaluation of and improvements to pedestrian crossings throughout Littleton, a separate but related Trail Crossing Guidance document was developed and can be found in **Appendix C**. This appendix includes three main components:

- *Trail Crossing Guidance and Recommendations* – summary of pedestrian crossing treatments, including their function, benefits, appropriate context, and implementation guidance
- *Crossings Near Parks and Schools* – additional considerations for pedestrian crossings located near parks and schools
- *Littleton Linkages Crossing Improvement Recommendations* – specific improvement recommendations for the Trail Crossing Improvement concepts identified in this study

Concept Evaluation & Prioritization

Once a set of draft concepts was developed, an evaluation framework was devised to first assess, then refine, and ultimately prioritize them. The purpose of this step was to ensure recommendations from the Littleton Linkages Trail Study are consistent with its initial intent.

Criteria Overview

12 quantifiable evaluation criteria were developed to evaluate and compare each improvement concept. As outlined below, each criterion was associated with one of the five project values and given a unique scoring framework; the total possible score from this evaluation framework was 15 points. A more detailed explanation of how the concepts were evaluated for each criterion can be found in **Appendix D**.

Connectivity

- **Network Connections –** Does the concept connect to existing or planned regional trails?
  - Scoring Framework:
    - 0 = No
    - 1 = Connection to Planned Regional Trail
    - 2 = Connection to Existing Regional Trail

Healthy

- **New Trail –** Is the concept located on a roadway without existing bike/ped facilities?
  - Scoring Framework (only applied to New Trail Connections & Existing Trail Improvements):

- 0 = No
- 1 = Yes

- **Crossing Installation –** Does the concept install a new crossing where one currently doesn't exist?
  - Is the project installing a new crossing at a location where one currently doesn't exist?
  - Scoring Framework (only applied to Trail Crossing Improvement concepts):
    - 0 = No
    - 1 = Yes
- **Conflict Improvement –** Does the concept improve crossing conditions at a street intersection?
  - Scoring Framework (only applied to Trail Crossing Improvement concepts):
    - 0 = No/Inapplicable
    - 1 = Yes – 25 mph street
    - 2 = Yes – 30 mph street
    - 3 = Yes – 35+ mph street
- **Conflict Mitigation –** Does the concept widen an existing bike/ped facility or provide a new one?
  - Scoring Framework (only applied to New Trail Connection and Existing Trail Improvement concepts):
    - 0 = No/Inapplicable
    - 1 = Widens Existing Facility
    - 2 = Provides New Facility

Inclusive

- **Potential Users –** How many residents per acre live within ¼ mile of the concept?
  - Scoring Framework:
    - 1 = Less than 5 people per acre
    - 2 = 5 to 10 people per acre
    - 3 = Over 10 people per acre
- **ADA Issues –** How many documented ADA compliance issues could be addressed by implementing the concept?
  - Scoring Framework:
    - 1 = 1-2 issues
    - 2 = 3-5 issues
    - 3 = Over 5 issues

- **Equity Area –** Is the concept located within, or would it demonstrably serve, an equity zone as defined by the State of Colorado's EnviroScreen assessment?
  - Scoring Framework:
    - 0 = No
    - 1 = Serves EnviroScreen block group
    - 2 = Within EnviroScreen block group

Prosperous

- **Proximity to School/Park –** How many schools and parks are within ¼ mile of the concept (½ mile for middle and high schools)?
  - Scoring Framework:
    - 0 = None
    - 1 = 1-2 schools/parks
    - 2 = more than 2 schools/parks
- **Proximity to Activity Area –** Is the concept within ½ mile of a major employment and/or commercial area?
  - Scoring Framework:
    - 0 = No
    - 1 = Yes

Sustainable

- **Sustainable Mobility –** Would the concept improve access to existing bus stops and/or rail stations?
  - Scoring Framework:
    - 0 = No
    - 1 = Yes (Only Bus)
    - 2 = Yes (Rail or Bus & Rail)
- **Constructability –** Is the concept located fully within City-owned/managed right-of-way?
  - Scoring Framework:
    - 0 = No
    - 1 = Yes

Concept Prioritization

The Littleton Linkages improvement concepts were initially scored based solely on the raw scoring framework. However, doing so did not equally consider each of the project values because they have varying numbers of associated criteria and possible points – *Connected* has only one associated criteria and two possible points, while *Inclusive* has three criteria and eight possible points. It was decided that each value should be weighed equally, so the scoring was normalized to be out of 100, with 20 total points possible for each value. The weighted scores and rankings for each concept, separated into three primary categories, are presented in **Tables 3** through **5** on the following pages. The three concept categories were ranked independently of each other because they have different potential funding sources and provide different types of benefits to the community.

Table 3. Existing Trail Improvement Scoring

Existing Trail Improvement Concept	Weighted Score	Weighted Ranking
A10 – Mineral Avenue Trail Widening & Intersection Improvements	70.00	1
A1 – Harlow Park Trail Widening	61.67	2
A3 – Ketring Park Trail Widening/Formalization	56.67	3
A7 – High Line Canal Trail Connection Easement	51.67	4
A9 – Lee Gulch Trail Alignment Improvement 2	50.00	5
A8 – Lee Gulch Trail Alignment Improvement 1	45.00	6
A5 – Lee Gulch Trail Underpass Improvements	38.33	7
A2 – Little's Creek Trail Realignment	34.17	8
A4 – Littleton Community Trail Trailhead	34.17	8
A6 – Rangeview Drive Trail Formalization	28.33	10
A11 – Trailmark Parkway Trail Widening	28.33	10

Table 4. Trail Crossing Improvement Scoring

Trail Crossing Improvement Concept	Weighted Score	Weighted Ranking
C11 – Improved Prince Street & Lake Avenue Crossing	71.67	1
C14 – New Gallup Street & Shepperd Avenue Crossing	67.50	2
C2 – Improved Lowell Boulevard & Arrowhead Road Crossing	65.00	3
C16 – New Elati Street & Sterne Parkway Crossing	62.50	4
C10 – Littleton Downtown Station Railroad Trail Overpass	61.67	5
C1 – New Belleview Avenue & Michigan Court Crossing	60.83	6
C5 – New Midblock Hickory Street Crossing	60.83	6
C23 – Broadway & Jamison Avenue Trail Underpass	60.00	8
C13 – New Lake Avenue & Sterne Parkway Pedestrian Crossing	58.33	9

C15 – Improved Caley Avenue & Datura Street Crossing	57.50	10
C21 – Improved Geddes Avenue & Gallup Street Crossing	55.00	11
C3 – Improved Belleview Avenue & Windermere Street Crossing	51.67	12
C25 – Improved Wolff Street & Mineral Avenue Trail Crossing	51.67	12
C18 – Improved Ridge Road & Apache Street Crossing	50.83	14
C20 – Improved Geddes Avenue & High Line Canal Trail Crossing	50.00	15
C22 – Improved Elati Street & Lee Gulch Trail Crossing	50.00	15
C12 – New Midblock Bemis Street Crossing	50.00	15
C26 – Improved Dusk Court & Mineral Avenue Trail Crossing	49.17	18
C8 – New Powers Park Crossing	48.33	19
C7 – New Windermere Street & Berry Avenue Crossing	47.50	20
C9 – Improved Little's Creek Trail Crossings	45.83	21
C17 – Improved Windermere Street & Lee Gulch Trail Crossing	45.83	21
C4 – New Prentice Avenue & Elmwood Street Crossing	43.33	23
C6 – New Prentice Avenue & Huron Street Crossing	43.33	23
C27 – Improved Polo Ridge Drive & Mineral Avenue Trail Crossing	39.17	25
C19 – Improved Prince Street & Rangeview Drive Crossing	38.33	26
C24 – New South Platte Canyon Road & Depew Street Crossing	22.50	27

Table 5. New Trail Connection Scoring

New Trail Connection Concept	Weighted Score	Weighted Ranking
N11 – Lake Avenue, Prince Street to Datura Street	77.50	1
N16 – Caley Avenue, Prince Street to Broadway/High Line Canal	70.83	2
N31 – Littleton Community Trail Extension, Railroad to Bemis Street	70.00	3
N10 – Prince Street, Lake Avenue to Little's Creek Trail	68.33	4
N23 – Geddes Avenue, High Line Canal Trail to Lee Gulch Trail	65.83	5
N12 – Sterne Park Trail	65.83	5
N18 – Sterne Parkway, Elati Street o Broadway	65.00	7
N19 – Ridge Road, Littleton Community Trail to High Line Canal Trail	64.17	8
N1 – James Taylor Park/Harlow Park Trail	63.33	9
N25 – Mineral Avenue, Broadway to Lee Gulch Trail	63.33	9
N17 – Euclid Avenue, Elati Street to Broadway	59.17	11
N20 – Peakview Avenue, Ridge Road to Elati Street	59.17	11
N8 – Trail Connection, Big Dry Creek Trail to Littleton High School	58.33	13
N7 – Powers Park Trail	58.33	13
N24 – Horseshoe Park Trail	58.33	13
N13 – Sterne Parkway, Windermere Street to Lake Avenue	57.50	16
N22 – Trail Connection, Meadowbrook to Lee Gulch Trail	55.83	17
N3 – Bowles Avenue, Sheridan Boulevard to Santa Fe Drive	55.00	18

N15 – Lakeview Street, Caley Avenue to Ketring Park	54.17	19
N5 – Berry Avenue, Windermere Street to Delaware Street	53.33	20
N4 – Hickory Street, Prentice Avenue to Big Dry Creek Trail	52.50	21
N14 – Lakeview Street, Ketring Park to Shepperd Avenue	52.50	21
N28 – Trail Connection, Southbridge Park to High Line Canal Trail	51.67	23
N30 – Littleton Community Trail Extension, Euclid Street to Mineral Avenue	49.17	24
N2 – Berry Avenue, Bow Mar Drive to Federal Boulevard	45.00	25
N9 – Washington Street/Littleton Blvd, Big Dry Creek Trail to Clarkson Street	45.00	25
N21 – Trail Connection, Mary Carter Greenway Trail to Davies Avenue	45.00	25
N27 – Trail Connection, Reynolds Landing to Lee Gulch Overlook	45.00	25
N26 – Pennsylvania Street, Phillips Avenue to Mineral Avenue	42.50	29
N29 – Trail Connection, Olhson Acres to High Line Canal Trail	42.50	29
N6 – Rafferty Gardens Avenue, Delaware Street to Broadway	39.17	31

Concept Implementation

The weighted scores and rankings demonstrate relative community benefit for each project. Other important considerations to determining appropriate phasing of infrastructure improvements include ease of implementation – cost, construction feasibility, etc. – packageability with other planned/programmed infrastructure improvements, and compatibility with outside funding opportunities. For the Littleton Linkages process, this was all assessed at a high level to inform further conversations and ultimately lead to implementation.

Ease of Implementation

The recommended concepts vary greatly in the level of effort necessary to construct and maintain them. Determining factors include size/scale, right-of-way needs, existing topography, and drainage considerations. For example: C22 (Improved Elati Street & Lee Gulch Trail Crossing) requires just relatively simple upgrades to the existing curb ramps at that crossing, while C10 (Littleton Downtown Station Railroad Overpass) is a highly complicated project which will require substantial modifications to the existing structure, coordination with numerous partner agencies, and construction of new trail landings on either end of the structure. Concepts within each district that have a relatively high ease of implementation and scored high in the prioritization process (top third of their category) are summarized below. Relative ease of implementation – rated on a scale of 1 to 3, with 1 being easiest to implement – for every concept can be found in **Appendix D**.

Existing Trail Improvements

- Harlow Park Trail Widening
- Ketring Park Trail Widening
- High Line Canal Trail Connection Easement

Trail Crossing Improvements

- Improved Prince Street & Lake Avenue Crossing
- New Gallup Street & Shepperd Avenue Crossing
- Improved Geddes Avenue & Gallup Street Crossing

New Trail Connections

- Geddes Avenue, High Line Canal Trail to Lee Gulch Trail
- James Taylor Park/Harlow Park Trail
- Sterne Park Trail

Concept Packageability

There are opportunities for many of these concepts to be packaged or grouped in a way that allows for them to be completed simultaneously (and more efficiently). **Table 6** summarizes six packages of concepts that be considered for simultaneous implementation due to proximity, each of which is described in more detail below.

Table 6. Potential Concept Packaging

Concept Packages	Included Concepts
Little's Creek Improvement Package	A2, C9, C10, N10
Harlow Park Improvement Package	A1, C1, C2, N1
Ketring Park Improvements Package	A3, C14, N14, N15
Progress Park Improvements Package	C3, C4, C5, C6, N4
Heritage High School Improvements Package	A7, A8, C20, C21, N23, N24
Mineral Avenue Improvements Package	C25, C27, C27

In District 1, the Little's Creek/Downtown area contains concepts A2, C9, C10, and N10, all of which relate to Little's Creek and could be pursued simultaneously. Similarly, the Harlow Park area includes multiple concepts – C1, C2, N1, and A1 – which could be efficiently implemented together.

Two major opportunities for concept packageability in District 2 are located around Ketring Park and Progress Park/Cornerstone Park. Concepts A3, C14, N14, and N15 are all located around or within

Ketring Park. Concepts C3, C4, C5, C6, and N4 are all located in the Progress Park/Cornerstone Park area; while a slightly larger geographic grouping of concepts, they are all mostly focused on improving pedestrian safety and access around the two parks and would be logical to implement together.

For District 3, the Heritage High School area has a large number of concepts that could be packaged – concepts A7, A8, C20, C21, N23, and N24 are all proximate to the high school and mainly focused on safety and connectivity. The District 4 concepts are more widely spread, but concepts C25, C26, and C27 are all crossing improvement projects along a short stretch of Mineral Avenue that could be packaged.

Overview of Funding Sources

Continued agency partnerships with other public and private entities, as well pursuits of additional grant funding will be critical to successful implementation of the study recommendations. **Table 7** summarizes funding sources that may be considered.

Table 7. Trail Funding Opportunities

Grant	Agency	Applicability to Trails	Requirements/Timeline
County			
Arapahoe County Open Spaces Fund	Arapahoe County	• Funds projects in the county that support construction/renovation of trails, trailheads, and parks. • Funds land acquisition for open space, parks, and trails.	Annual • Generally $10 million to $15 million available
State			
Community Impact	Great Outdoors Colorado (GOCO)	• Aim is to develop and revitalize parks, trails, schoolyards, fairgrounds, environmental education facilities, and other outdoor projects. • Flexible program that funds big and small community driven projects.	Tri-annual grants; Summer, Fall, Winter • Below $1 million • No match requirement
Stewardship Impact	Great Outdoors Colorado (GOCO)	• Awarded to projects that demonstrate meaningful improvements to the state's ecological and recreational amenities.	Tri-annual grants; Summer, Fall, Winter • Considers requests between $100,000 and

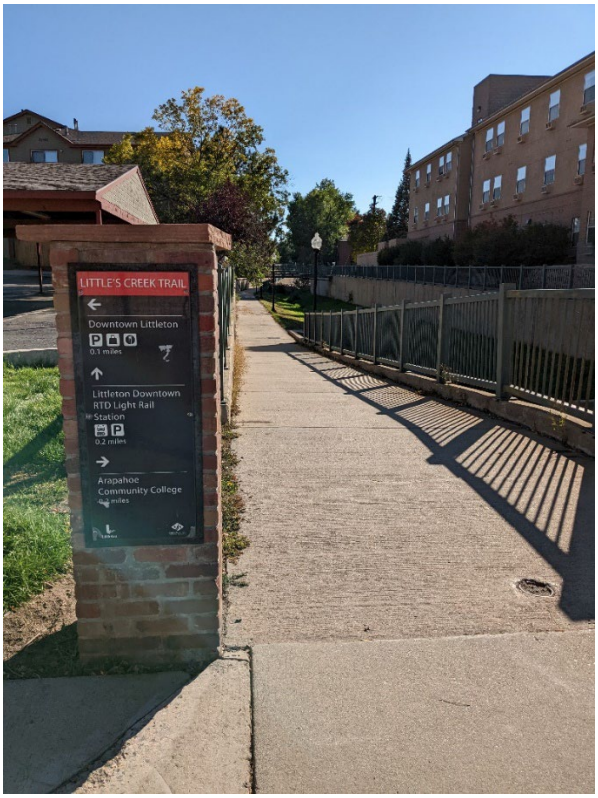
			$300,000 per project
Non-Motorized Trails	Colorado Parks & Wildlife	• Funds projects that improve outdoor recreation opportunities, including trail construction, maintenance, planning and support.	Annual Funding request limit: • $250,000 for Construction/Maintenance projects • $45,000 for Planning/Support
Transportation Improvement Program (TIP)	DRCOG	• Comprehensive program aimed at improving transportation infrastructure and services in the DRCOG region. • Encompasses projects including bicycle and pedestrian infrastructure. • Supports projects that enhance mobility, reduce congestion, improve safety, and promote sustainable transportation options within the region.	Biennial • Minimum 20% match • Minimum of $100,000 in DRCOG allocated funds must be requested. • Federal grant requirements apply
Colorado Safe Routes to School Infrastructure Grant	CDOT	• Program which funds safety improvements within 2 miles of K-8 schools • Pedestrian crossing improvements have been awarded funding through this program	Annual • Next application window anticipated for August 2024 • Approximately $5 million available every year • Grant amounts between $100,000 and $750,000 per project • Minimum 20% match
Federal			
Transportation Alternatives Program (TAP)	FHWA	• Program aims to enhance transportation alternatives and non-motorized modes of transportation. • Includes the construction, improvement and maintenance of bike lanes, bicycle trails, and other related facilities. • Supports projects that promote safety, accessibility and mobility.	Annual • Minimum 20% match • Region 1 "Total Pool Funding" (2023-2026): $11,210,491

Multimodal Transportation and Mitigation Options Fund	FHWA	• Funds multimodal accessibility and safety improvement projects. • Goals include benefiting seniors, residents of rural areas, safe routes to schools for children, reducing emissions.	Annual • $127,502,541 was the total allocation for the Denver Area for 2022 • Minimum 50% match
Surface Transportation Block Grant Program	FHWA	• Provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure.	Annual • Deadlines provided by CDOT or MPO
Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant Program	USDOT	• Competitive national funding source for major multimodal infrastructure investments • Pedestrian bridges and substantial trail expansions have been awarded funding through this program	Annual • $1-$2 billion awarded annually • Individual awards must be between $5 million and $25 million • Minimum of 20% match

Conclusion

Littleton's trail network is robust in its reach, with most residential areas within easy walking or biking distance from a regional trail such as the High Line Canal Trail or the Mary Carter Greenway Trail. But accessing those major trails and other destinations in the city by foot can be a challenge – there is a need for more and better local connections, and enhanced bicycle & pedestrian crossing treatments. The Littleton Linkages Trail Study was conducted to identify, assess, and make a plan for filling local gaps in the trail network.

Through a comprehensive effort of community engagement, technical analysis, and concept development, a set of 69 local trail improvement concepts was ultimately identified throughout Littleton – these will make it safer and more comfortable to bike and walk to schools and parks, to access regional trails for recreation and commuting, and to simply go for walks. The evaluation results and concept scoring demonstrate the relative benefit each one will bring to the community, but there are numerous other factors to consider in determining implementation timelines. Key next steps in bringing this study's recommendations to fruition include furthering design, matching concepts with appropriate funding sources, and pursuing that funding to complete design and construction.



LITTLETON LINKAGES
TRAIL STUDY

Appendix A. Existing Conditions Assessment

Appendix B. Public Engagement Summary

Appendix C. Pedestrian Crossing Guidance

Appendix D. Concept Development & Evaluation Details