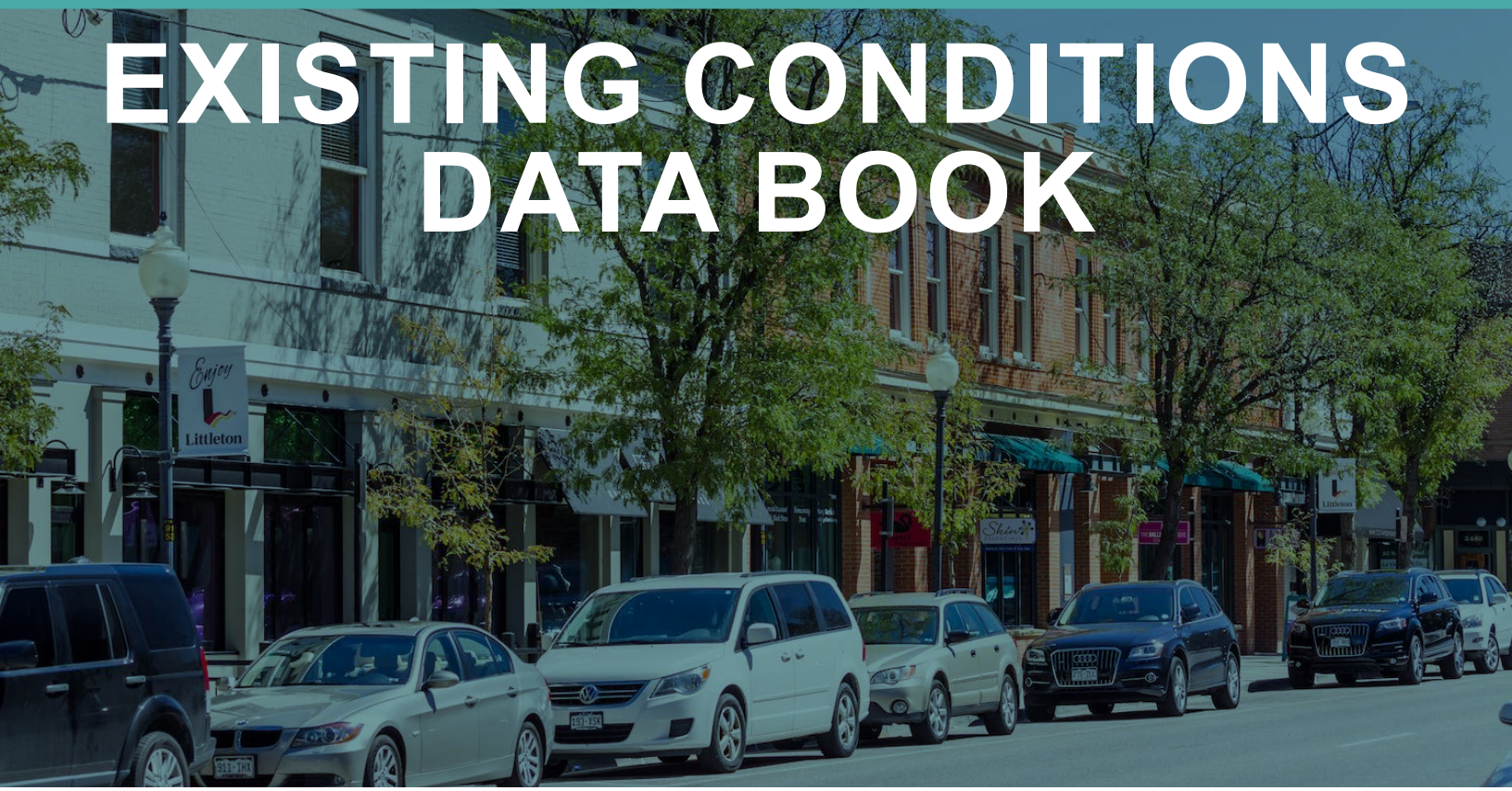
project
downtown

EXISTING CONDITIONS DATA BOOK



Prepared for the City of Littleton
November 2023

Littleton LIVABLE CITIESTUDIO consor

TABLE OF CONTENTS

TABLE OF FIGURES

INTRODUCTION

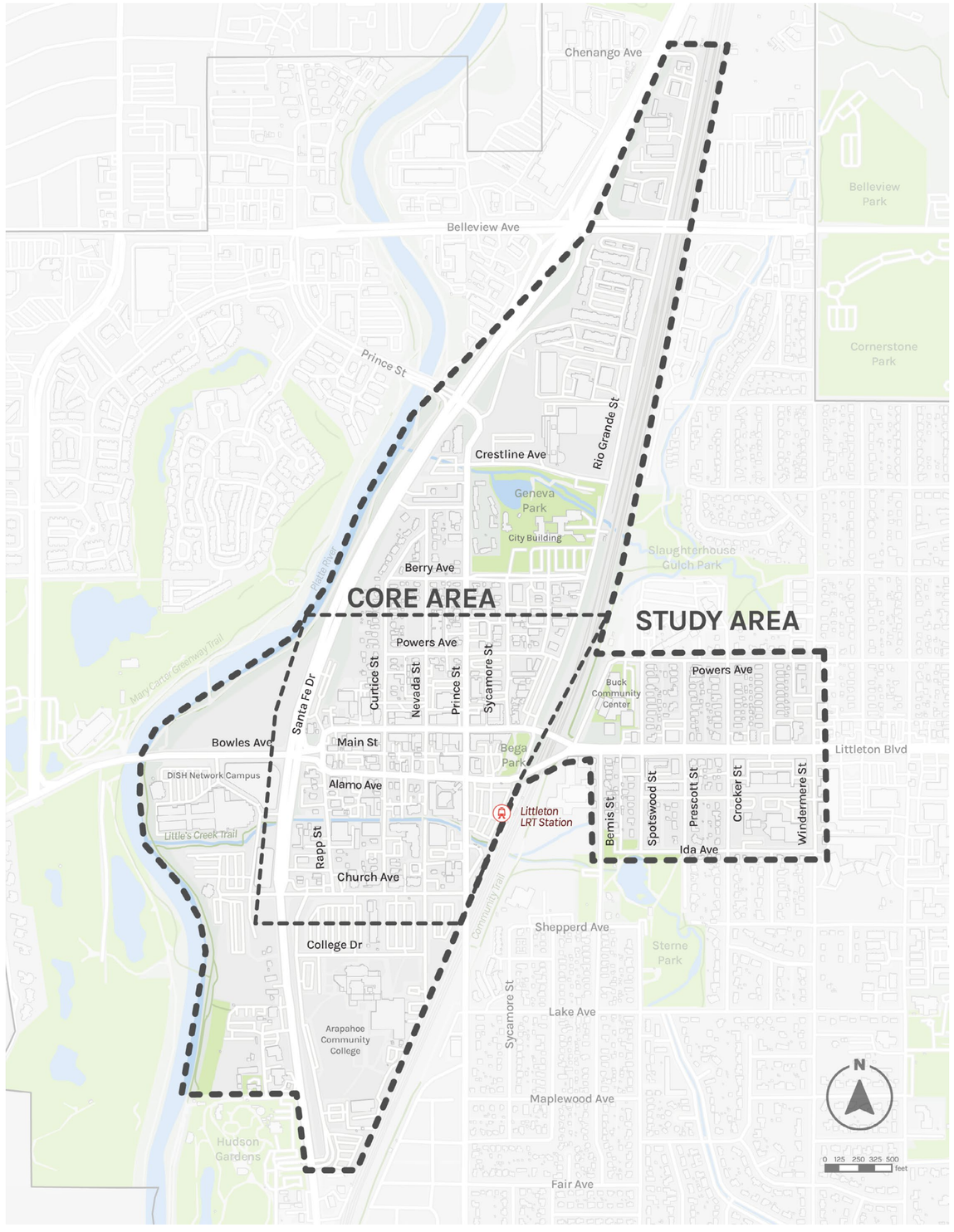
PROJECT PURPOSE

The purpose of Project Downtown is to guide the City of Littleton's investment decisions to improve multimodal connectivity, parking, pedestrian safety, wayfinding, green infrastructure, and streetscape enhancements in Downtown Littleton.

Project Downtown builds upon Envision Littleton, the City's comprehensive plan adopted in 2019, the City Council Goals and Work Plan, as well as the Transportation Master Plan and other previous strategic planning efforts. Through those planning processes, the community identified mobility and streetscape improvements as top priorities. Improvements to mobility and streetscape can enhance Littleton's downtown area, increase access to the local businesses and amenities it offers, reinforce Littleton's small town charm and create a vibrant and lively downtown for all. Project Downtown includes a robust community engagement process, connecting with residents, business owners, and other interested parties throughout the project. The community engagement process will be transparent with multiple touch points that balance trade-offs while ensuring the downtown core continues to grow responsibly.

EXISTING CONDITIONS PROCESS

The first phase of the planning process is developing an existing conditions databook. This analysis consists of reviewing previous Littleton plans and relevant studies, a physical assessment, a mobility assessment, a safety assessment, and a stormwater and utility assessment. The needs assessment in each section points out key opportunities for the study area as identified by the project team and staff using best practices, and also takes into account preliminary community and stakeholder input.



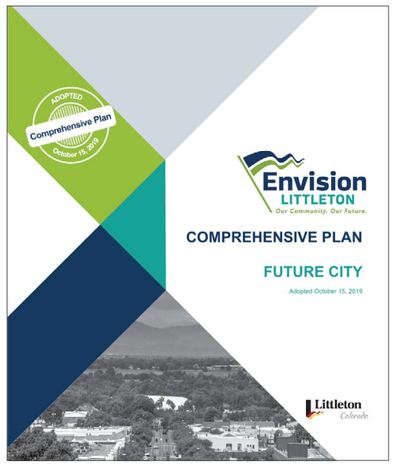
PREVIOUS PLAN REVIEW

The project team reviewed the following Littleton plans to inform the existing conditions analysis. The RTD 2021-2026 Strategic Plan and Arapahoe County 2035 Transportation Plan were also reviewed, but these plans did not have any recommendations specific to the study area.

Two goals guided the previous plans review process:

- Understand Littleton's vision on guiding principles for transportation and mobility
- Identify prior recommendations relevant to the downtown area

ENVISION LITTLETON COMPREHENSIVE PLAN (2019)

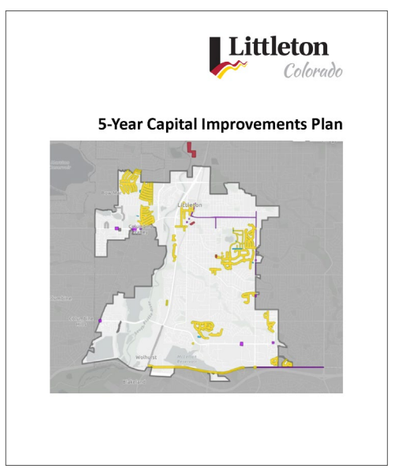


Establishes a framework for action that guides future development, redevelopment, and community enhancement efforts through 2040. This plan assesses near and long-term needs and desires of the community and recommends actions to accomplish these goals.

RELEVANCY TO DOWNTOWN:

- Identifies the downtown light rail station, river corridor, and city parks as places to improve connections between.
- Recommends improving parking downtown through implementing parking structures and/or parking restrictions.

5-YEAR CAPITAL IMPROVEMENTS PLAN

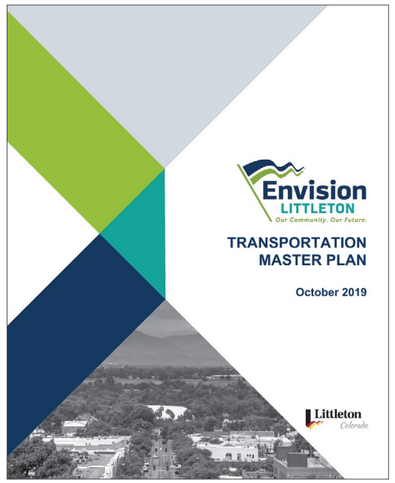


The 5-Year Capital Improvements Plan identifies Capital Improvement Projects happening in the next 5 years. The following projects are planned to be constructed in 2023.

RELEVANCY TO DOWNTOWN:

- Identifies water infrastructure replacements in the downtown area which can provide opportunities to reconfigure the ROW and streetscape above ground.
- Recommends reconstruction of raised pedestrian crossings downtown to improve safety connecting to/from the light rail station.
- Identifies improvements to enhance pedestrian and bicycle safety at the intersections of Prince Street & Church Avenue and Prince Street & Santa Fe Drive.
- Recommends installation of a multimodal trail linking Prince Street on the west to the Community Trail in Slaughterhouse.

ENVISION LITTLETON TRANSPORTATION MASTER PLAN (2019)

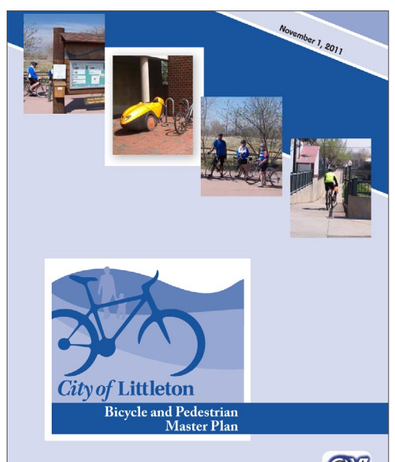


This plan establishes the City's transportation system vision and goals, the policies to support it, and prioritizes capital projects to achieve that vision.

RELEVANCY TO DOWNTOWN:

- Recommends establishing transit stop/station standards, as well as improving access and wayfinding to them.
- Identifies transit speed and reliability improvements such as queue jumps, transit signal priority, or other operation improvements for downtown.
- Identifies protected bike lanes for three corridors downtown (Alamo Avenue, Prince Street to Court Place; Main Street, Prince Street to Court Place; Church Avenue, Santa Fe Drive to Prince Street) and bicycle intersection improvements to two downtown intersections (Prince Street and Alamo Avenue, Prince Street and Main Street).
- Identifies rectangular rapid flashing beacons /raised pedestrian crossings on three corridors in downtown (Prince Street and Little's Creek Trail, Bega Park Trail and Alamo Avenue, Bega Park Trail and Main Street).

BICYCLE AND PEDESTRIAN MASTER PLAN (2011)



This plan focuses on short-term improvements to on street pedestrian and bicycle facilities as well as education and encouragement programs in Littleton.

RELEVANCY TO DOWNTOWN:

- Recommends sharrows on Prince Street through downtown, which have since been implemented, and a bike lane on Church Avenue just south of Alamo Avenue in the downtown area.
- Identifies key sidewalk gaps on Berry Avenue and Santa Fe Drive.
- Prioritizes gaps in the sidewalk network around schools and other public facilities.

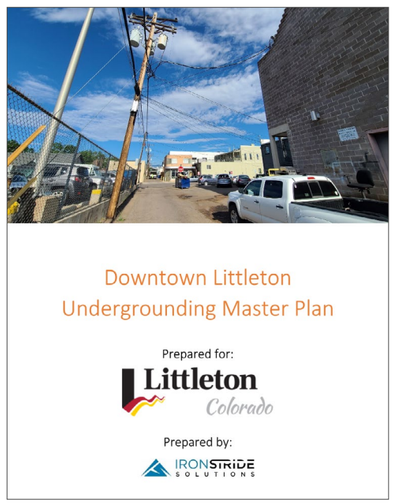
DOWNTOWN LITTLETON PLAN OF DEVELOPMENT (2022)

This plan provides a road map for future investments in physical improvements, maintenance, programs, and services for the betterment of downtown to be implemented by the Littleton Downtown Development Authority.

RELEVANCY TO DOWNTOWN:

- Recommends a redesign of Main Street in downtown for future generations in coordination with Denver Water's water main line replacement project.
- Acknowledges need to activate parks, alleys, and other spaces to increase vibrancy and reduce perceived safety challenges downtown at night.
- Suggests improvements to intersection safety for pedestrians downtown.
- Recommends distributing parking demand to underutilized parking lots.
- Identifies need to complete the multimodal network.
- Recommends enhancing the gateways into downtown so people know they are entering a unique, beautiful, and well-maintained place.
- Acknowledges need to improve biking and pedestrian connections.
- Suggests designing Prince Street, Church Avenue, Littleton Boulevard, and Bowles Avenue as "complete streets" and gateway streets into downtown.

DOWNTOWN LITTLETON UNDERGROUNDING MASTER PLAN (2023)

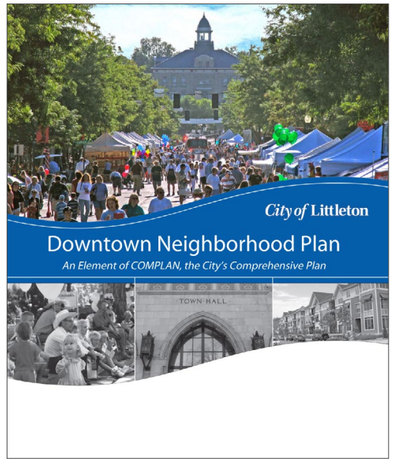


This plan guides the City's use of XCEL's 1% fund to ensure monies are used in a cost-effective manner to underground electrical utilities in and around the downtown area as part of phase one undergrounding.

RELEVANCY TO DOWNTOWN:

- Identifies segments in and near downtown that may need to be coordinated with other city infrastructure improvement projects to cost share, prevent rework, and minimize disruptions due to construction for businesses and the transportation network.

CITY OF LITTLETON DOWNTOWN NEIGHBORHOOD PLAN (2011)

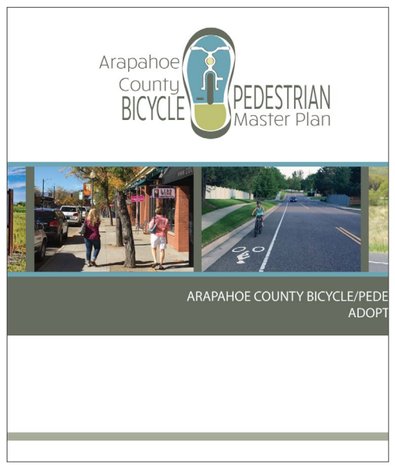


The Downtown Neighborhood Plan establishes a forward-looking program that strives to understand and respond to changes that may impact the area in the next 20 years. This includes demographic shifts, evolution of transportation infrastructure, and changes to land use patterns.

RELEVANCY TO DOWNTOWN:

- Sets forth a vision for downtown to have a mixture of land uses that promote a vibrant main street district, strong sense of community, and a healthy and stable business environment.
- Recognizes need to improve major entryways into downtown with gateway features, sculptures, landscaping, and signage.
- Identifies the need to have downtown parking for residents, employers, and shoppers without diminishing downtown's overall design quality.
- Emphasizes connectivity and improvements to the pedestrian and bike network.

ARAPAHOE COUNTY BICYCLE/PEDESTRIAN MASTER PLAN (2017)



This plan highlights the status of bicycling and walking in Arapahoe County and provides a vision and direction on how it will evolve in the future. Goals, policies, strategies, and performance measures are outlined related to bicycle and pedestrian infrastructure, including identifying a network of low stress bike facilities as well as projects to fill gaps in the sidewalk network.

RELEVANCY TO DOWNTOWN:

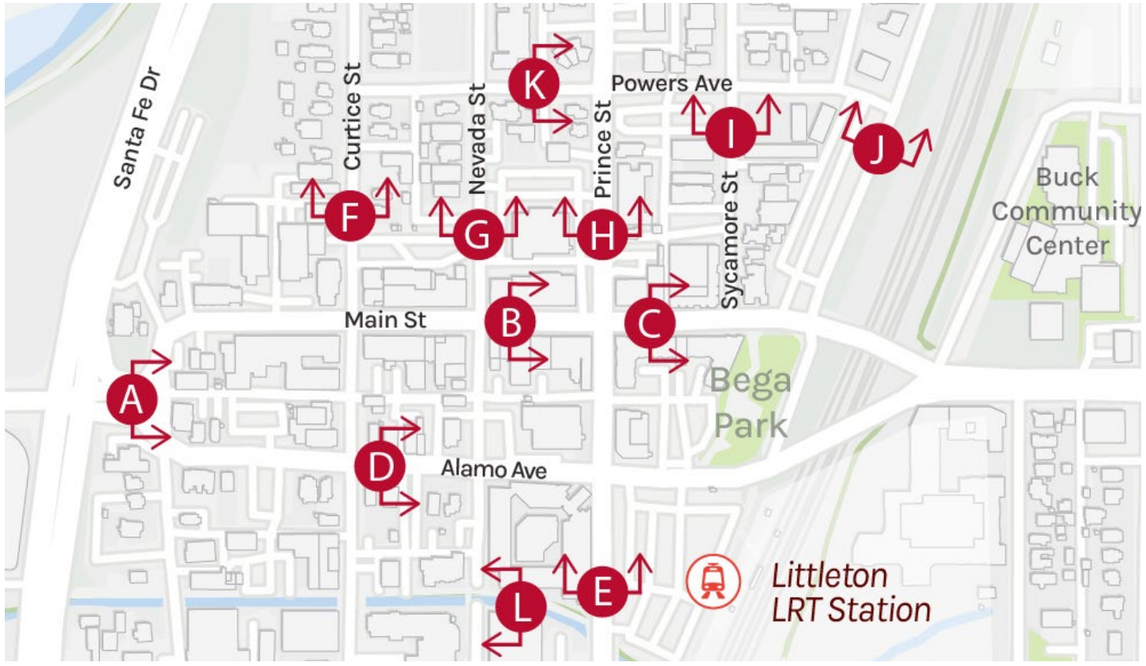
- Identifies a Little's Creek Trail connector from Santa Fe Drive to Bemis Street.
- Identifies high priority trail and railroad grade separation projects for Little's Creek trail and Littleton Community Trail.

MOBILITY CONNECTIVITY

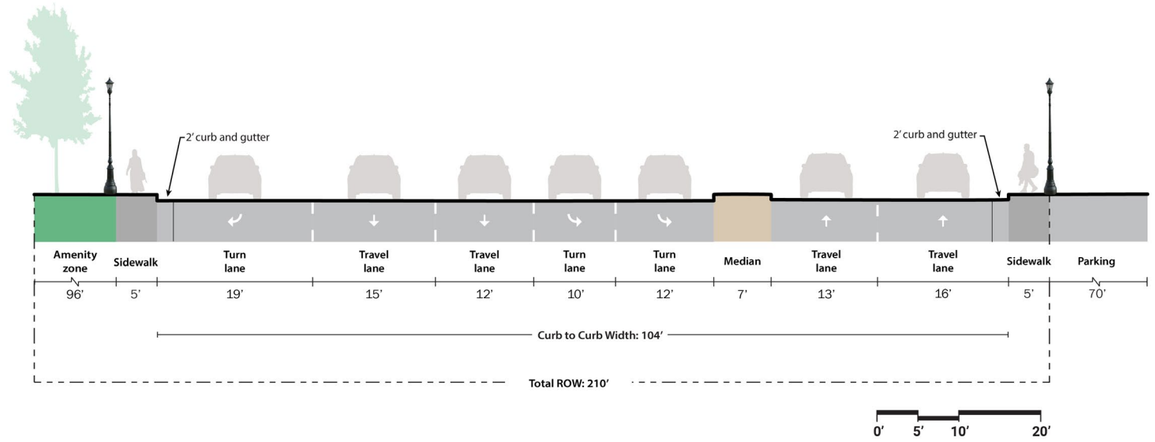
EXISTING CROSS SECTIONS

Throughout the study area, roadways have varying cross sections and lane configurations, with most containing two travel lanes and two parking lanes. Amenity and sidewalk zones in the downtown area are largely based on the nearby land uses. The following cross sections show typical exhibits of the roadway at 11 locations in the downtown core.

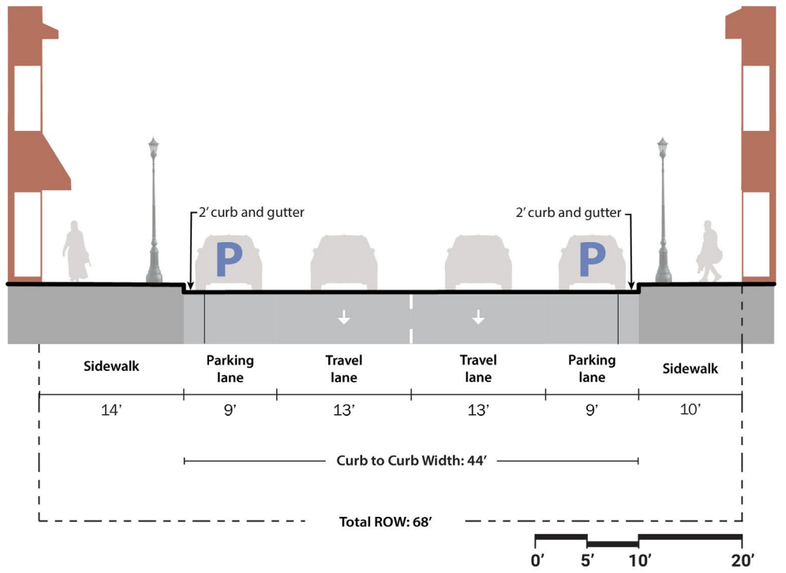
Note: ROW was determined by measuring parcel to parcel.



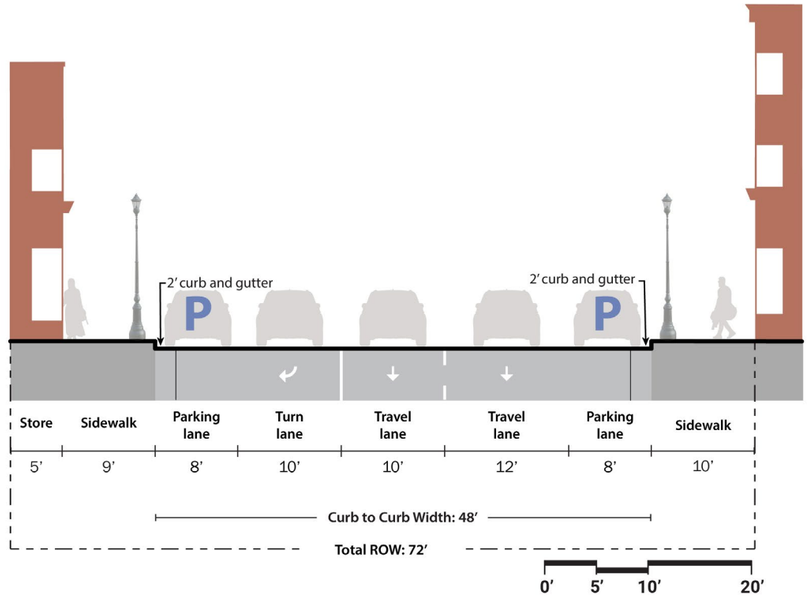
SECTION A: LITTLETON BOULEVARD WEST OF RAPP STREET - LOOKING EAST



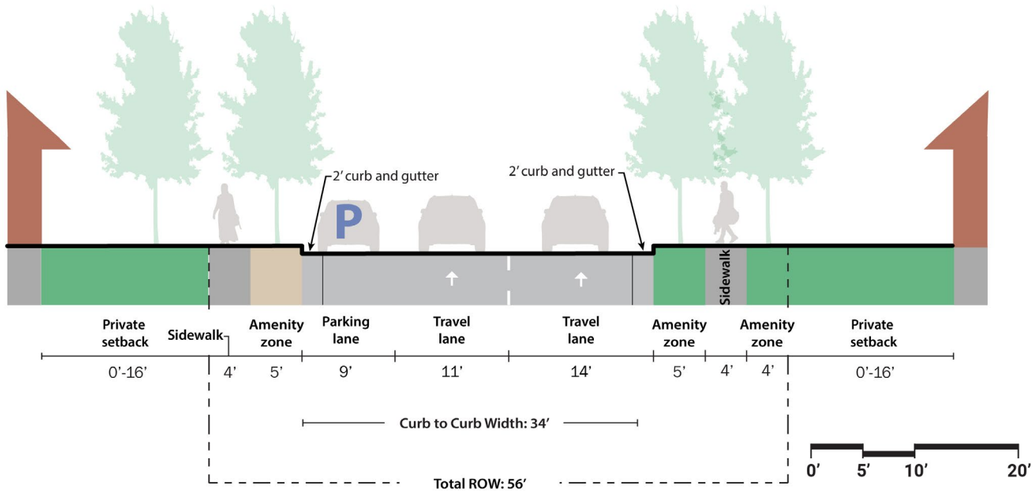
SECTION B: MAIN STREET EAST OF NEVADA STREET - LOOKING EAST



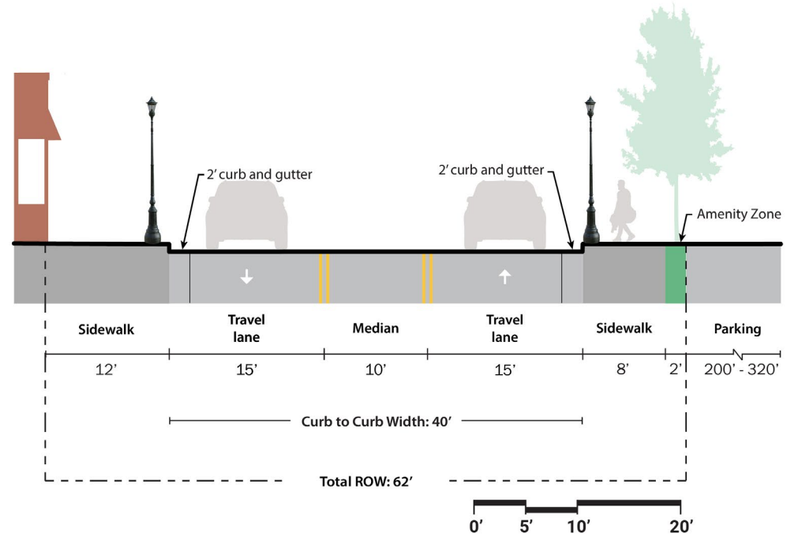
SECTION C: MAIN STREET EAST OF PRINCE STREET - LOOKING EAST



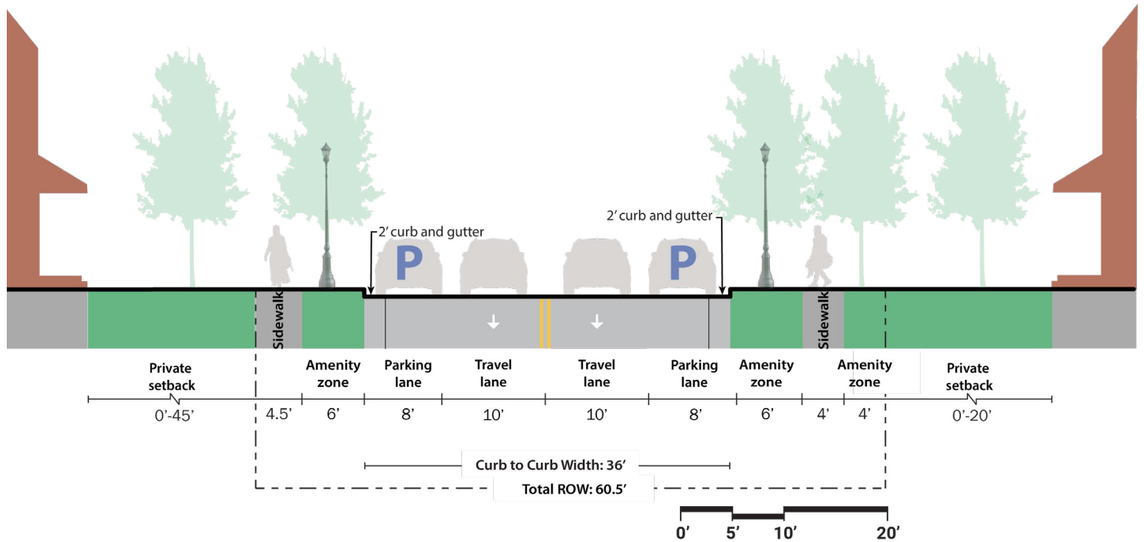
SECTION D: ALAMO AVENUE EAST OF CURTICE STREET - LOOKING EAST



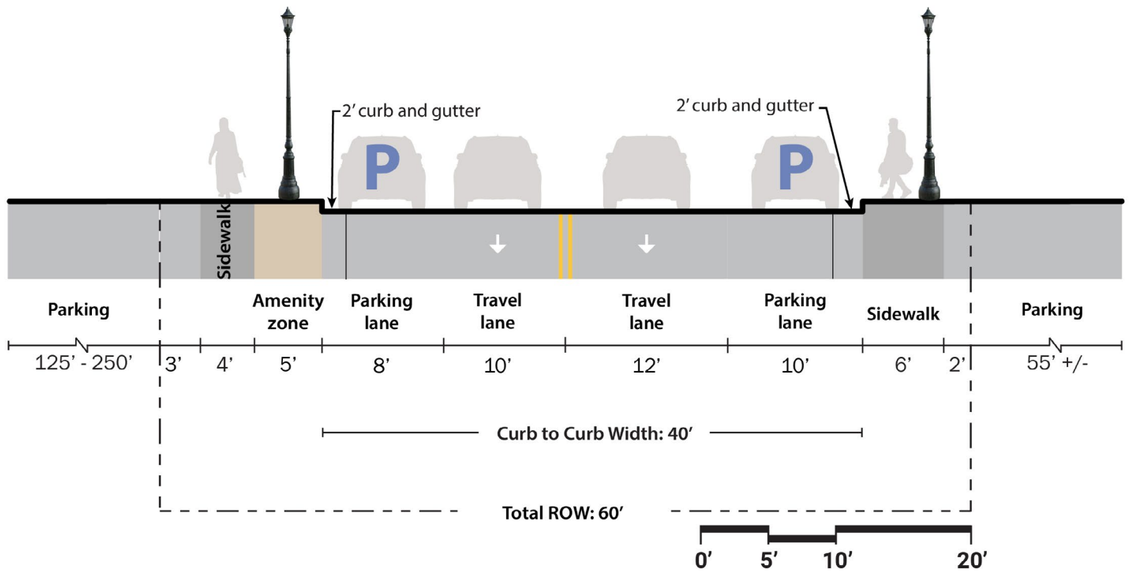
SECTION E: PRINCE STREET NORTH OF LITTLE'S CREEK - LOOKING NORTH



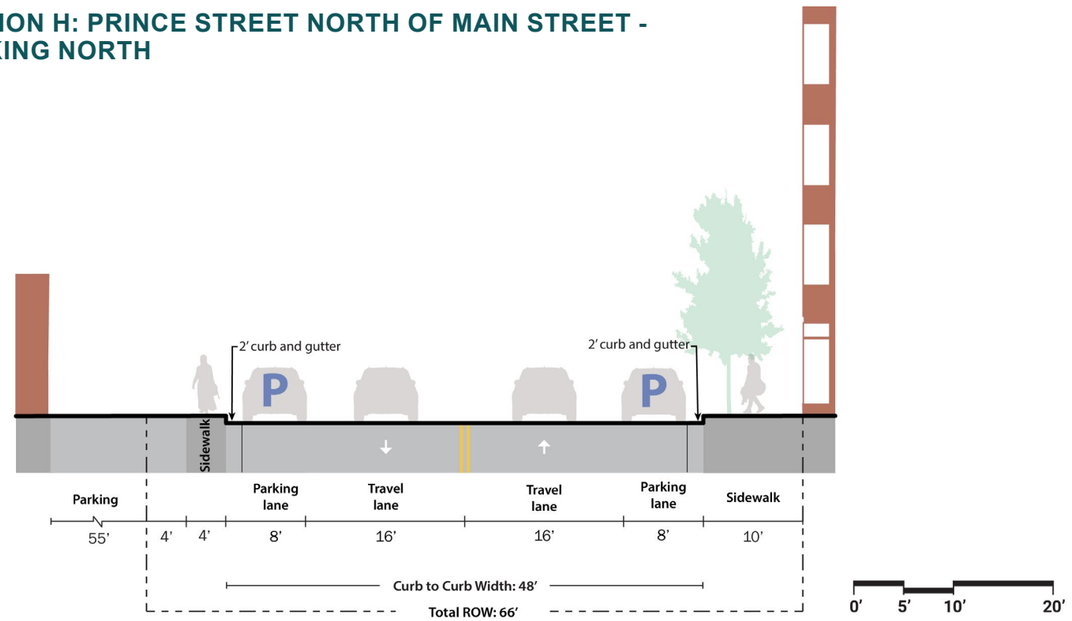
SECTION F: CURTICE STREET NORTH OF MAIN STREET - LOOKING NORTH



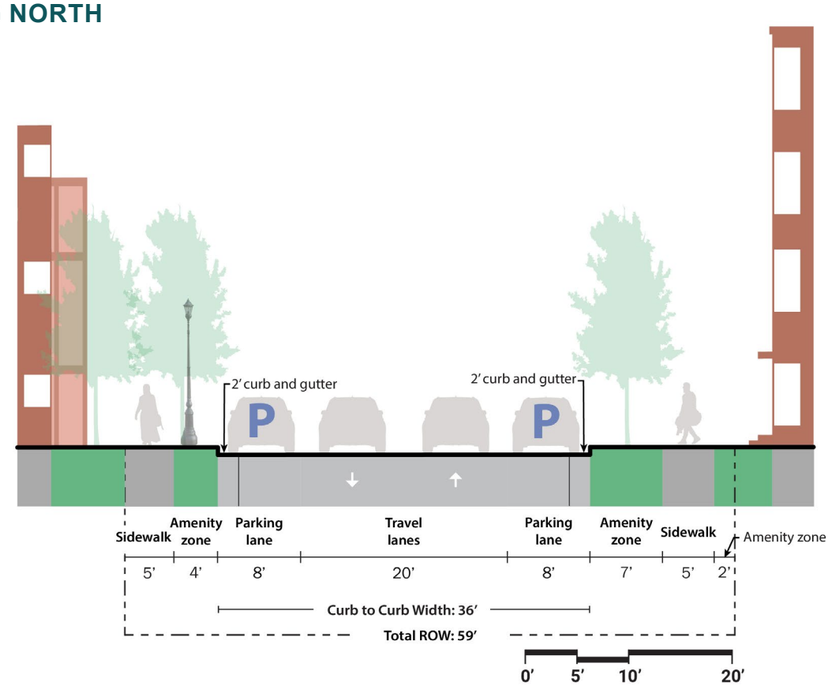
SECTION G: NEVADA STREET NORTH OF MAIN STREET - LOOKING NORTH



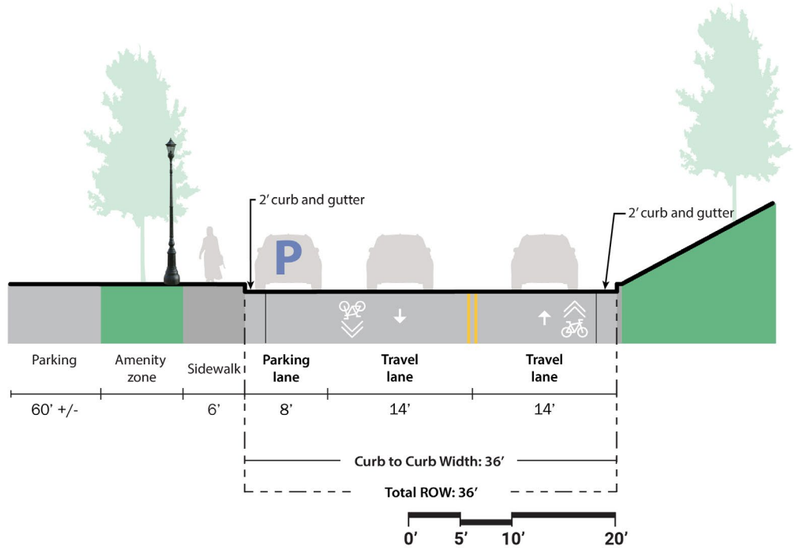
SECTION H: PRINCE STREET NORTH OF MAIN STREET - LOOKING NORTH



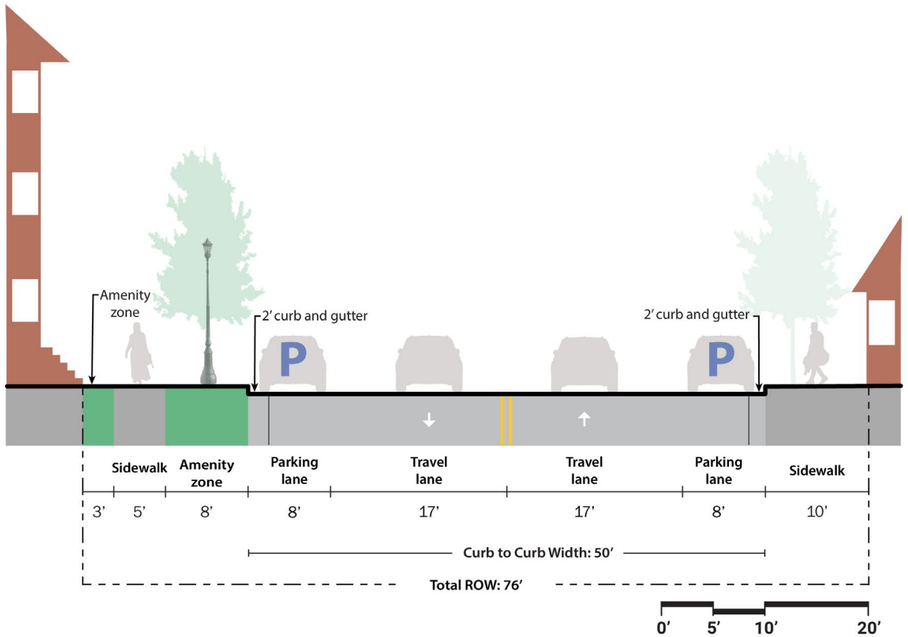
SECTION I: SYCAMORE STREET NORTH OF MAIN STREET - LOOKING NORTH



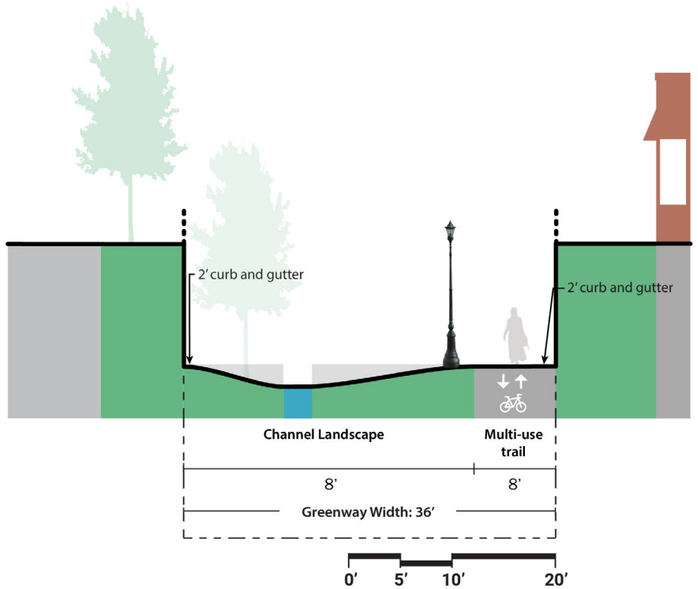
SECTION J: RIO GRANDE STREET NORTH OF MAIN STREET - LOOKING NORTH



SECTION K: POWERS AVENUE EAST OF NEVADA STREET - LOOKING EAST



SECTION L: LITTLE'S CREEK TRAIL WEST OF PRINCE STREET LOOKING WEST



PEOPLE WALKING

Pedestrian facilities in the study area range from wide, connected sidewalks on Main Street to missing or extremely narrow sidewalks on Windermere Street. Generally, sidewalks, curb ramps, and crosswalks in Downtown Littleton enable pedestrians to travel to and from businesses and other destinations in the study area. However, many of these facilities are in need of repair or need additional safety measures to enhance comfort for people walking. Recent planning efforts propose improvements on most streets in the study area, including the Littleton Transportation Master Plan, identifying most streets as pedestrian priority areas.

SIDEWALKS

Overall, the sidewalk network has very few gaps and is a combination of both attached and detached sidewalks. Attached sidewalks do not have a buffer between pedestrians and the travel lane, whereas detached sidewalks are buffered by an amenity zone (grass, trees, benches, etc.). Separation from vehicles makes detached sidewalks a safer and more comfortable environment for pedestrians. Much of the downtown core contains attached sidewalks, however, these are mostly buffered by 2 - 8 feet of on-street parking and some trees.

About half of the sidewalks in the study area are over 5 feet wide, which is the standard for ADA accessibility without a required passing zone. Sidewalks adjacent to the Berry Avenue and Nevada Street intersection are only 3 feet wide, as are the sidewalks along Ida Avenue and its cross streets. These sidewalks are difficult or impossible for a person in a wheelchair to travel along or for two people to pass each other without stepping into a vehicle lane. The rest of the study area is a mix of sidewalks 4 feet or wider, as can be seen in the **Sidewalk Widths** map.

Attached sidewalk on Windermere Street

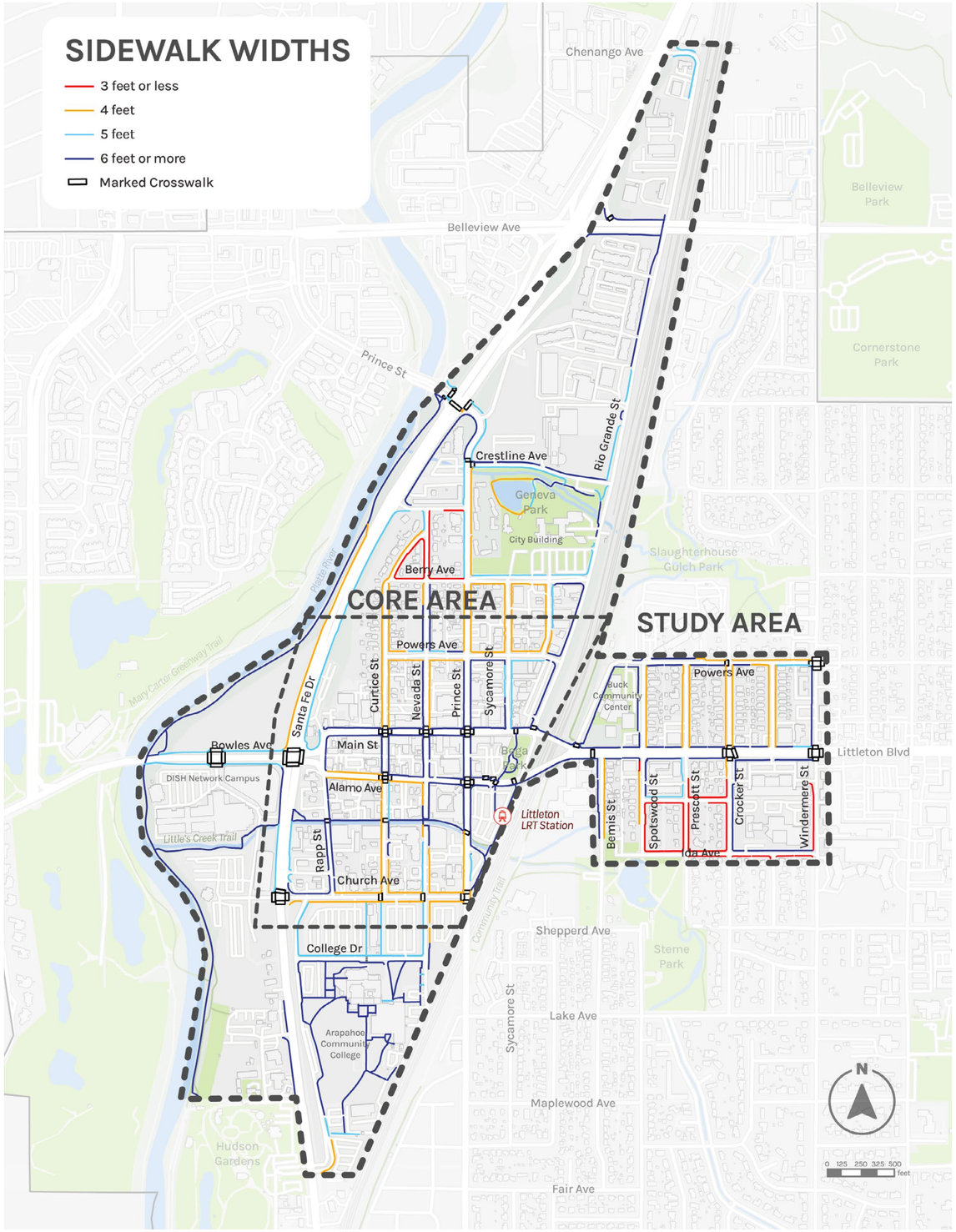
Detached sidewalk on Littleton Boulevard

CROSSWALKS

Currently, marked crosswalks exist at signalized intersections, trail crossings, and other high-demand pedestrian crossings. Through the 2023 CIP, three **Rectangular Rapid Flashing Beacons (RRFBs) and raised pedestrian crossings** have been installed at Prince Street & Little's Creek Trail, Bega Park Trail & Alamo Avenue, and Bega Park Trail & Main Street. These projects enhance pedestrian and bicycle safety and comfort for people crossing Alamo Avenue and Main Street at Bega Park.

Rectangular Rapid-Flashing Beacon (RRFB) on Main Street

Marked crosswalk on Main Street



MULTI-USE TRAILS

The study area contains three multi-use trails, which are comfortable places for both pedestrians and bicyclists to travel:

- Little's Creek Trail (travels east-west).
- Mary Carter Greenway Trail (travels north-south along the Platte River).
- Geneva Park Lake Loop (will connect to Slaughterhouse Gulch Park once grade-separated crossing is built).

Little's Creek Trail and the Mary Carter Greenway Trail connect just south of Bowles Avenue, and both intersect with the shared lane on Prince Street, creating a triangle of connectivity around and through the downtown core.

Trail connection from Prince Street to Little's Creek Trail

CURB RAMPS

Approximately half of the curb ramps in the study area are not currently ADA compliant as they lack truncated domes and/or a sufficient landing pad. Truncated domes and landing pads are critical for safe access for those with disabilities. These locations can be seen on the **Walking Infrastructure** map.

NEEDS ASSESSMENT

Complete the Sidewalk Network

Fill gaps in sidewalk network at the following locations:

- Santa Fe Drive (west side only) from Church Avenue past the southern edge of the study area.
- Berry Avenue from Curtice Street to Prince Street.
- Crestline Avenue from Santa Fe Drive to Prince Street.
- Segments of Prescott Street and Lilley Avenue south of Littleton Boulevard.

Widen sidewalks that are currently less than 4 feet in width to meet minimum ADA standards. These locations can be seen in the **Sidewalks Widths** map.

Upgrade Curb Ramps

Reconstruct non-compliant curb ramps to meet ADA standards. This includes approximately half of the locations in the study area, which can be seen on the **Walking** map.

Install Crosswalks

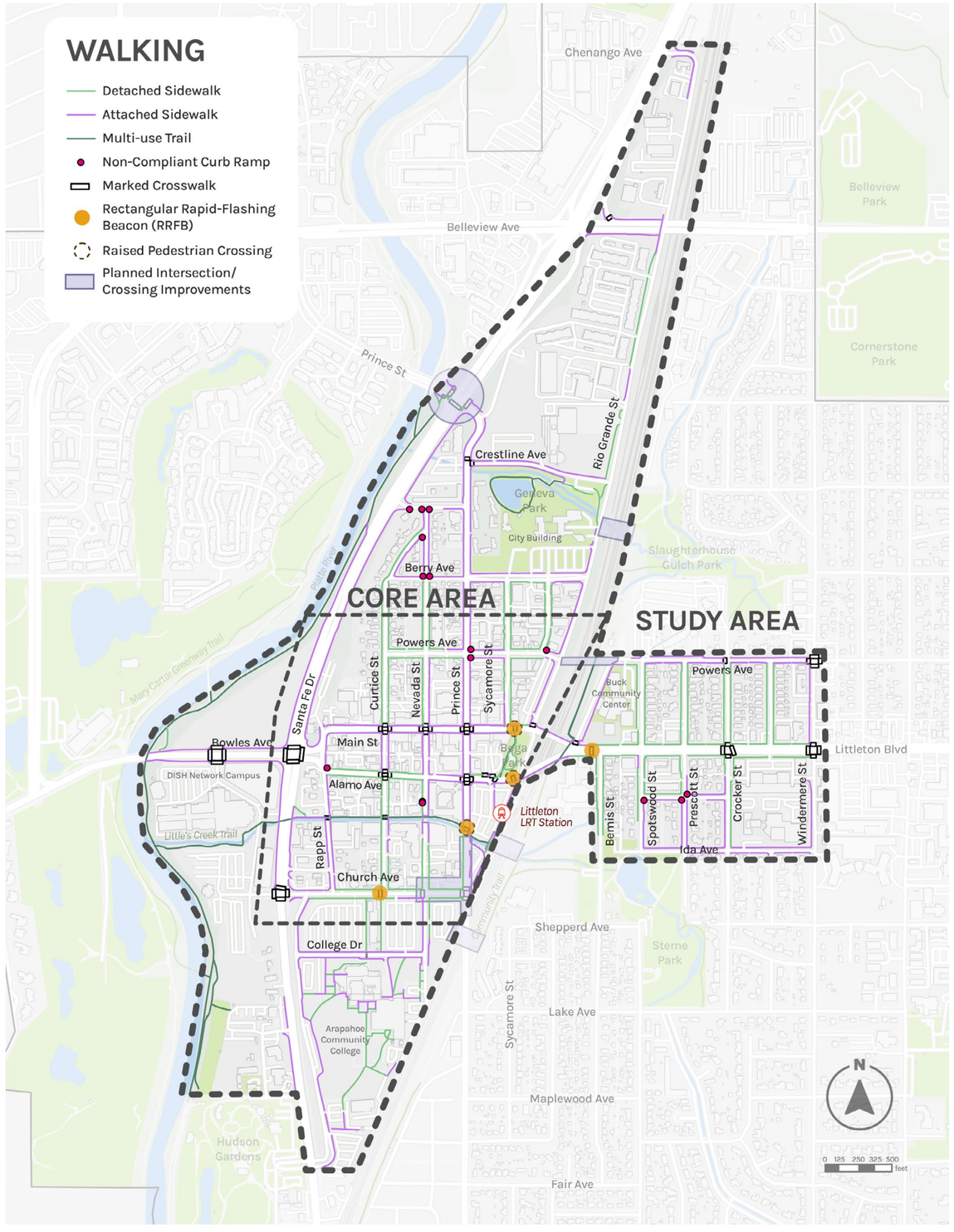
Develop and adopt an Uncontrolled Pedestrian Crossing Guidelines to inform when the City should mark crosswalks and implement other pedestrian related traffic control devices. If the City develops crossing guidelines, it should be coordinated with the Trail, School, and Park Crossing Guidance and Recommendations the City is currently developing.

Based on land use and pedestrian trip generators, mark all crossings in the core area.

Build Grade-Separated Crossings

- An underpass from Slaughterhouse Gulch Park to Geneva Park to connect the multi-use trail on each side of the train tracks.
- A pedestrian bridge over the train tracks at Powers Avenue to close the gap between neighborhoods east of the train tracks to the downtown core.
- Grade separated crossing to connect Little's Creek Trail across the railroad and to Littleton Community Trail.

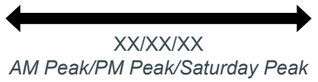
The recent **ADA Transition Plan** also includes detailed recommendations to bring the City up to ADA compliance.



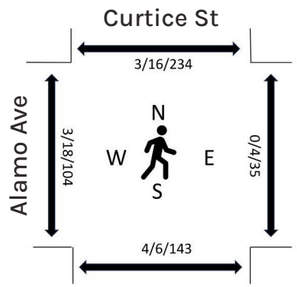
PEDESTRIAN VOLUMES

Pedestrians were counted at seven locations in the core area as noted on the **Pedestrian Count Locations** map. Data was collected on August 24th and 26th, 2023 during Thursday AM and PM peak hours, as well as Saturday at noon. These locations were selected based on land use and potential pedestrian demand.

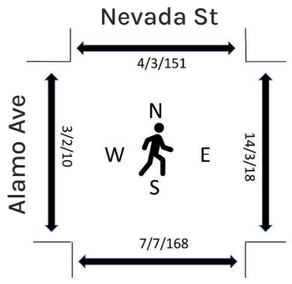
The numbers shown in the diagrams below account for pedestrians crossing the street at intersections. The first number in the series indicates pedestrians crossing during the morning peak, the middle number indicates crossings during the evening peak, and the last number indicates crossings during the Saturday peak.



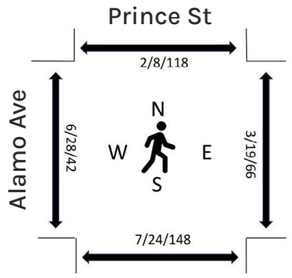
LOCATION A:



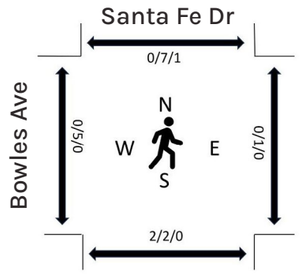
LOCATION B:



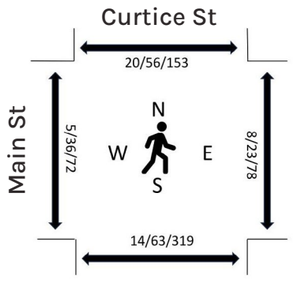
LOCATION C:



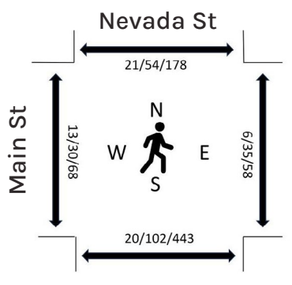
LOCATION D:



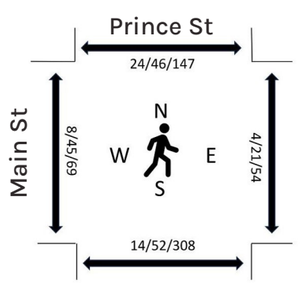
LOCATION E:



LOCATION F:

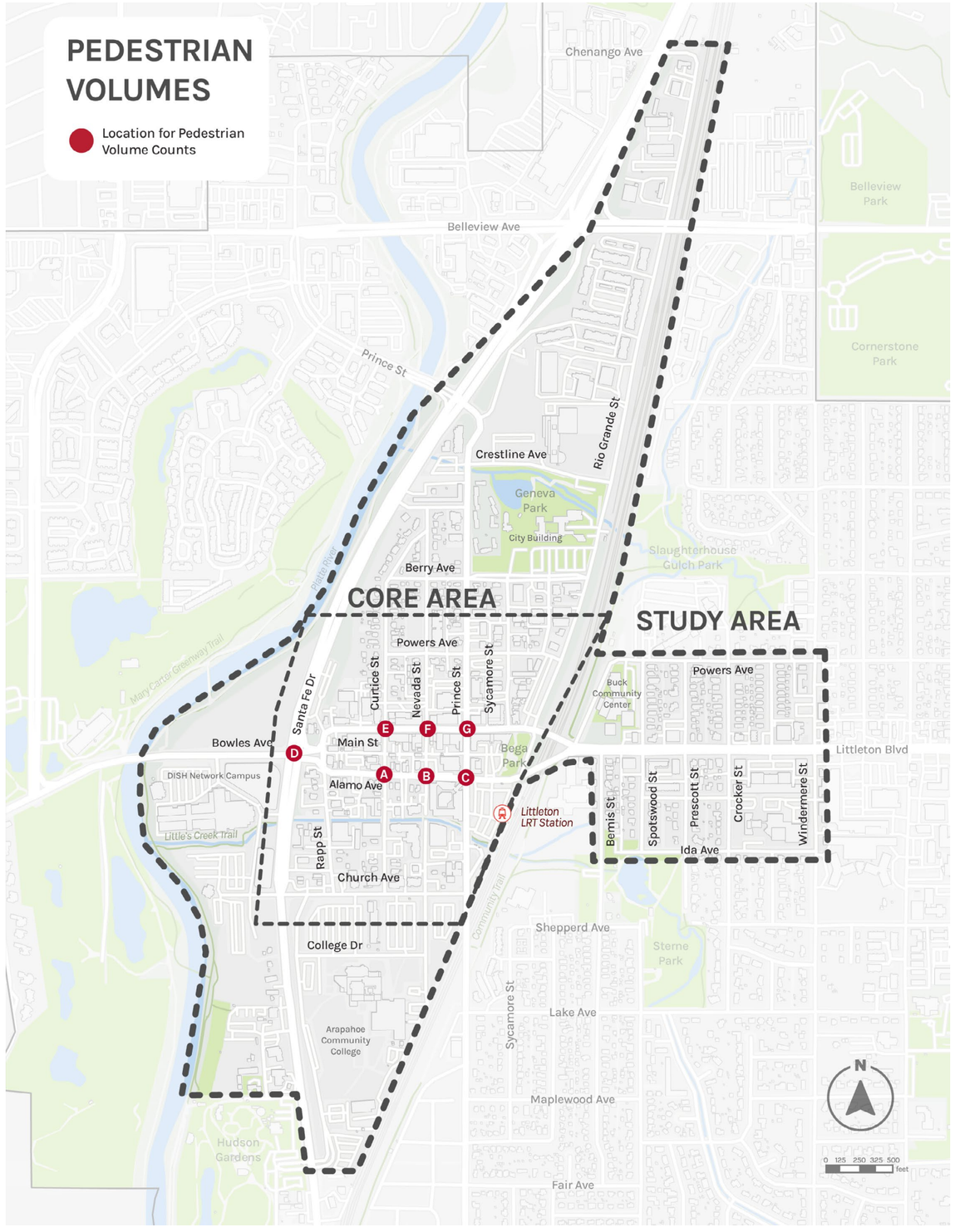


LOCATION G:



KEY TAKEAWAYS

The intersection of Main Street and Nevada during the day on Saturdays has the highest pedestrian demand of all seven locations that data was collected on. Main Street and Nevada Street, Main Street and Curtice Street, and Main Street and Prince Street have 450 to 600 people crossing Main Street at each intersection, which is in line with where the most existing commercial activity is located. Only two locations of the seven collected are unsignalized intersections - Alamo Avenue and Nevada Street and Alamo Avenue and Prince Street. Alamo Avenue and Prince Street is also the only intersection of the seven that does not currently have a marked crosswalk.



PEOPLE BIKING

Currently, people biking in Downtown Littleton have few comfortable and convenient options to travel in the study area. A combination of multi-use trails and shared lane markings provide some connectivity but are not comfortable for most users. However, Littleton has been making strides to expand its bicycle infrastructure to accommodate the growing interest in cycling and promote a more bike-friendly environment. For example, the Littleton Transportation Master Plan (TMP) (2019) identifies a few bike priority streets in the study area:

- Prince Street from Santa Fe Drive past the southern boundary of the study area
- Powers Avenue from Prince Street past eastern boundary of study area
- Church Avenue from Santa Fe Drive to Prince Street

EXISTING BIKE FACILITIES

The table below outlines the bike facilities within the study area.

Figure 1: Existing Bike Facilities

Type	Location
Buffered Bike Lane	Church Avenue from Santa Fe to Prince Street (coming in 2024)
Shared Lane Marking	Rio Grande Street from north of Geneva Park to Main Street
	Powers Avenue from Littleton Boulevard past the eastern edge of the study area
	Prince Street from Santa Fe Drive past the southern edge of the study area
Conventional (paint only) bike lane	Windermere Street from the top to bottom of the study area
Multi-Use Trails	Little's Creek Trail (travels east-west)
	Mary Carter Greenway Trail (travels north-south along the Platte River)
	Geneva Park Lake Loop (will connect to Slaughterhouse Gulch Park once grade-separated crossing is built)

Through the 2023 CIP, three RRFBs and raised pedestrian crossings have been installed at Prince Street & Little's Creek Trail, Bega Park Trail & Alamo Avenue, and Bega Park Trail & Main Street. These projects are significant to make the core a more comfortable place for bikes and pedestrians to cross vehicle traffic.

NEEDS ASSESSMENT

Upgrade Existing Bike Infrastructure

- Replace the shared lane markings on Prince Street with protected bike lanes to make this a much safer connection in the bike network.

Connect the Bike Network

- Install protected bike lanes on Church Avenue from Santa Fe Drive to Prince Street.
- Install protected bike lanes on Main Street from Prince Street to Court Place.
- Install protected bike lanes on Alamo Avenue from Prince Street to Court Place.
- Improve bike crossings at Prince Street & Alamo Avenue.
- Improve bike crossings at Prince Street & Main Street.

Main Street and Alamo Avenue currently do not have any bike infrastructure. The Littleton TMP proposes protected bike lanes east of Prince Street. However, this recommendation is missing a connection for bicyclists to businesses downtown. Consider protected bike lanes on Main Street and Alamo Avenue to Bowles Avenue.

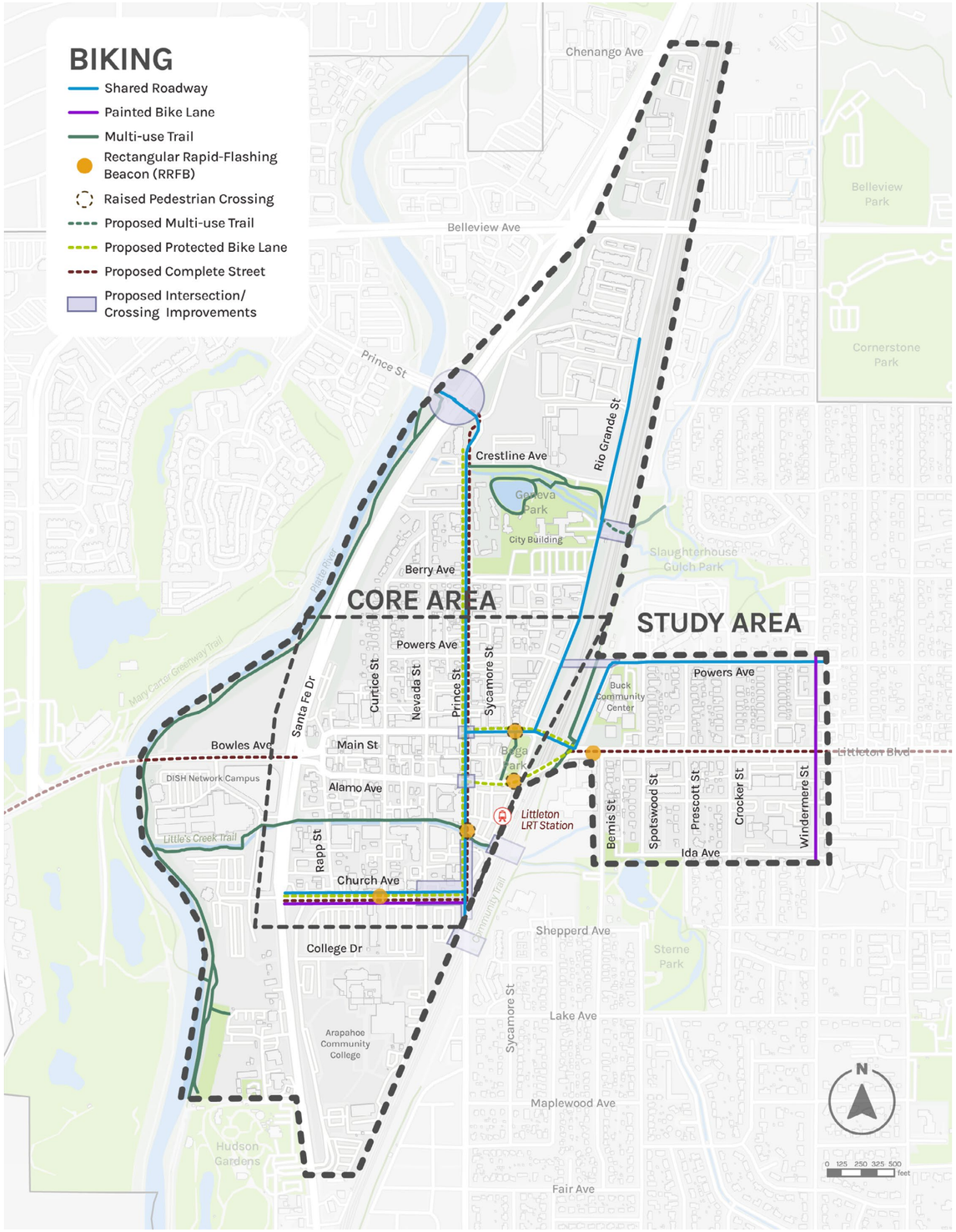
Build Grade-Separated Crossings

- An underpass from Slaughterhouse Gulch Park to Geneva Park to connect the multi-use trail on each side of the train tracks.
- A pedestrian bridge over the train tracks at Powers Avenue to close the gap between neighborhoods east of the train tracks to the downtown core.
- Grade separated crossing to connect Little's Creek Trail across the railroad and to Littleton Community Trail.

Install Bike Amenities

- Install functional bike racks and repair stations on Main Street and Alamo Avenue.
- Install secure bike parking at the light rail station.

Shared lane marking on Prince Street north of Main Street



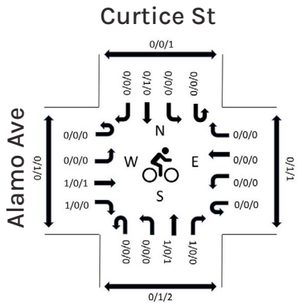
BICYCLIST VOLUMES

Bicyclists were counted at seven locations in the core area as noted on the **Bicyclist Count Locations** map. Data was collected on August 24th and 26th, 2023 during Thursday AM and PM peak hours, as well as Saturday at noon. These locations were selected based on land use and potential bike demand.

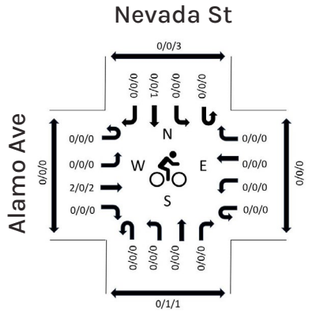
The numbers shown in the diagrams below account for bicyclists crossing the street at intersections. The first number in the series indicates bicyclists crossing during the morning peak, the middle number indicates crossings during the evening peak, and the last number indicates crossings during the Saturday peak.

XX/XX/XX
AM Peak/PM Peak/Saturday Peak

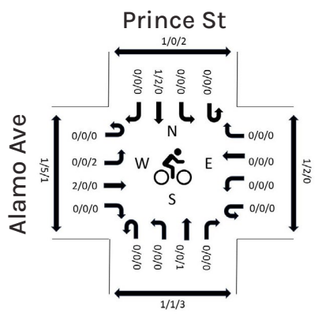
LOCATION A:



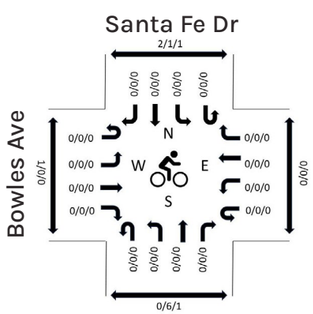
LOCATION B:



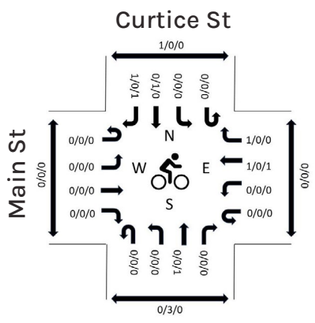
LOCATION C:



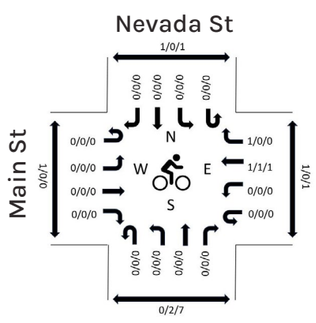
LOCATION D:



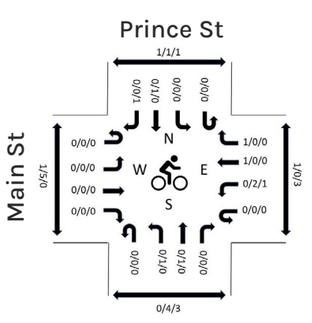
LOCATION E:



LOCATION F:

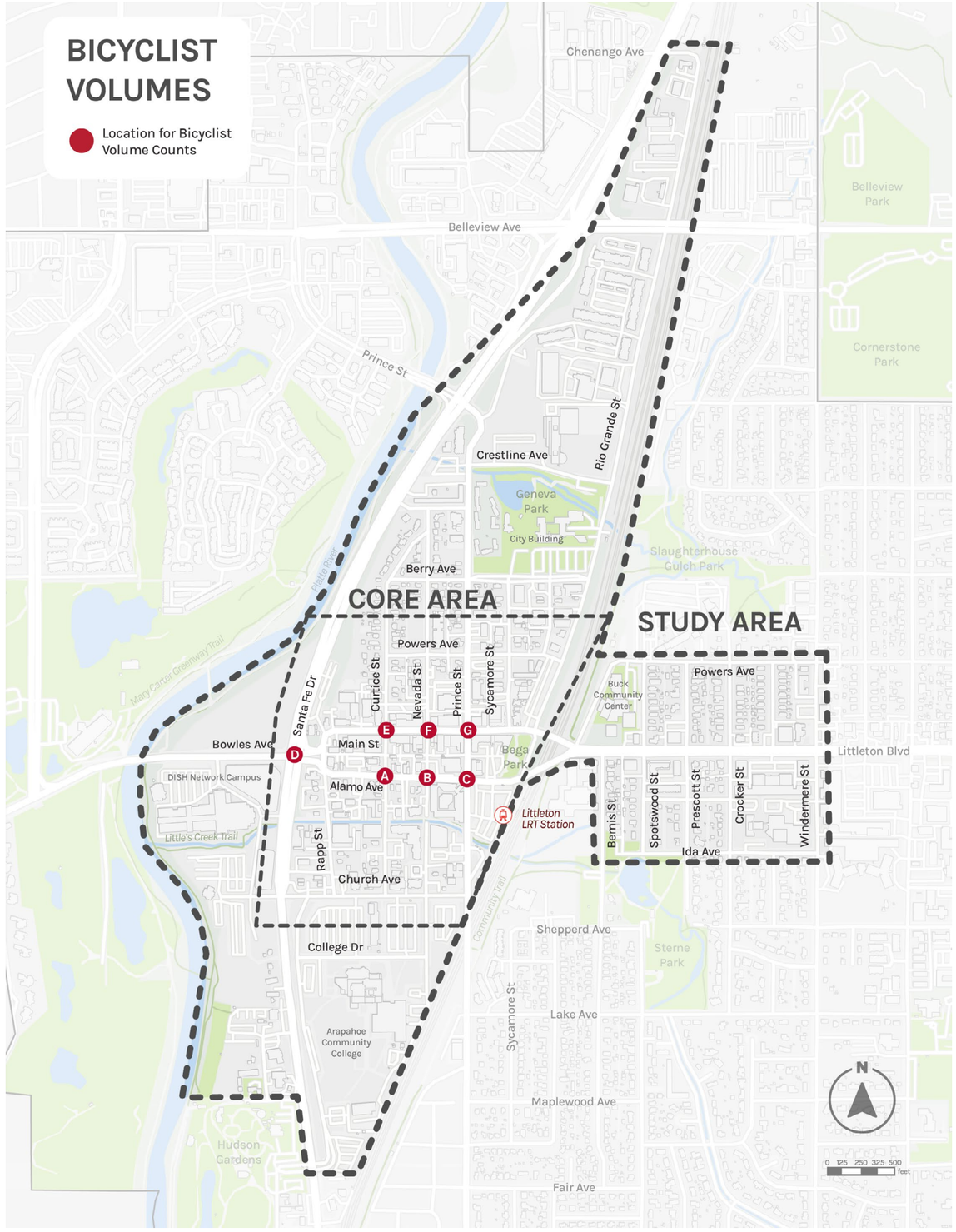


LOCATION G:



KEY TAKEAWAYS

Currently, there is little bicyclist activity in the downtown core. This, however, does not indicate a lack of desire for comfortable bike infrastructure, but rather indicates there may be latent demand in the area. Latent demand refers to the idea that people may want to bike or cross in an area, but they choose not to do so because the current conditions are unsafe. Latent demand can be measured by observing adjacent land uses for activity generators such as commercial areas, parks, trails, transit stops, schools, and other areas where user activity may be anticipated. Based on the context, latent bicyclist demand most likely exists on Main Street and Alamo Avenue.



PEOPLE TAKING TRANSIT

One light rail line and two RTD bus routes serve the study area. The D line runs from downtown Denver through Downtown Littleton and terminates at the Littleton Mineral station. Bus route 59 starts near C-470 and terminates in Downtown Littleton. Bus route 66 starts in Downtown Littleton and runs east to I-25, primarily traveling along Littleton Boulevard within the study area. Bus route 29 terminates in Downtown Littleton, coming from the north on Federal Boulevard. Bus route 36/36L also terminates in Downtown Littleton and comes from the north on Lowell Boulevard.

BUS

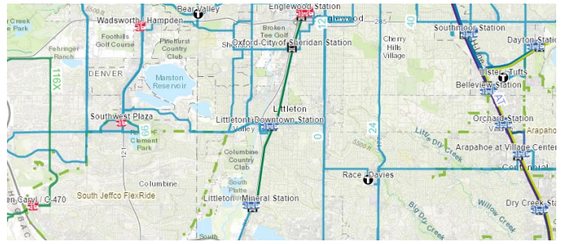
The following table summarizes 2023 service levels for the bus routes that serve the downtown Littleton area.

Figure 2: Bus Service in the Study Area

Route	Name	Days of Operation	Peak Hour Frequency
59	West Bowles	All	60 minutes
66	Arapahoe Road	All	60 minutes
29	Riverbend	All	60 minutes
36/36L	Fort Logan	All	60 minutes

There are 17 bus stops in the study area. The table below details amenities and average ridership (January – May 2023) at these stops. Notably, Gate D near the light rail station has significantly higher ridership than other stops in the study area.

The Littleton Transportation Master Plan (2019) identifies a few transit priority streets in the study area: Bowles Avenue from Santa Fe Drive west past the study area boundary; Church Avenue from Santa Fe Drive to Prince Street; Prince Street, from Littleton Boulevard south past the study area boundary; and Littleton Boulevard, from Prince Street east past the study area boundary.



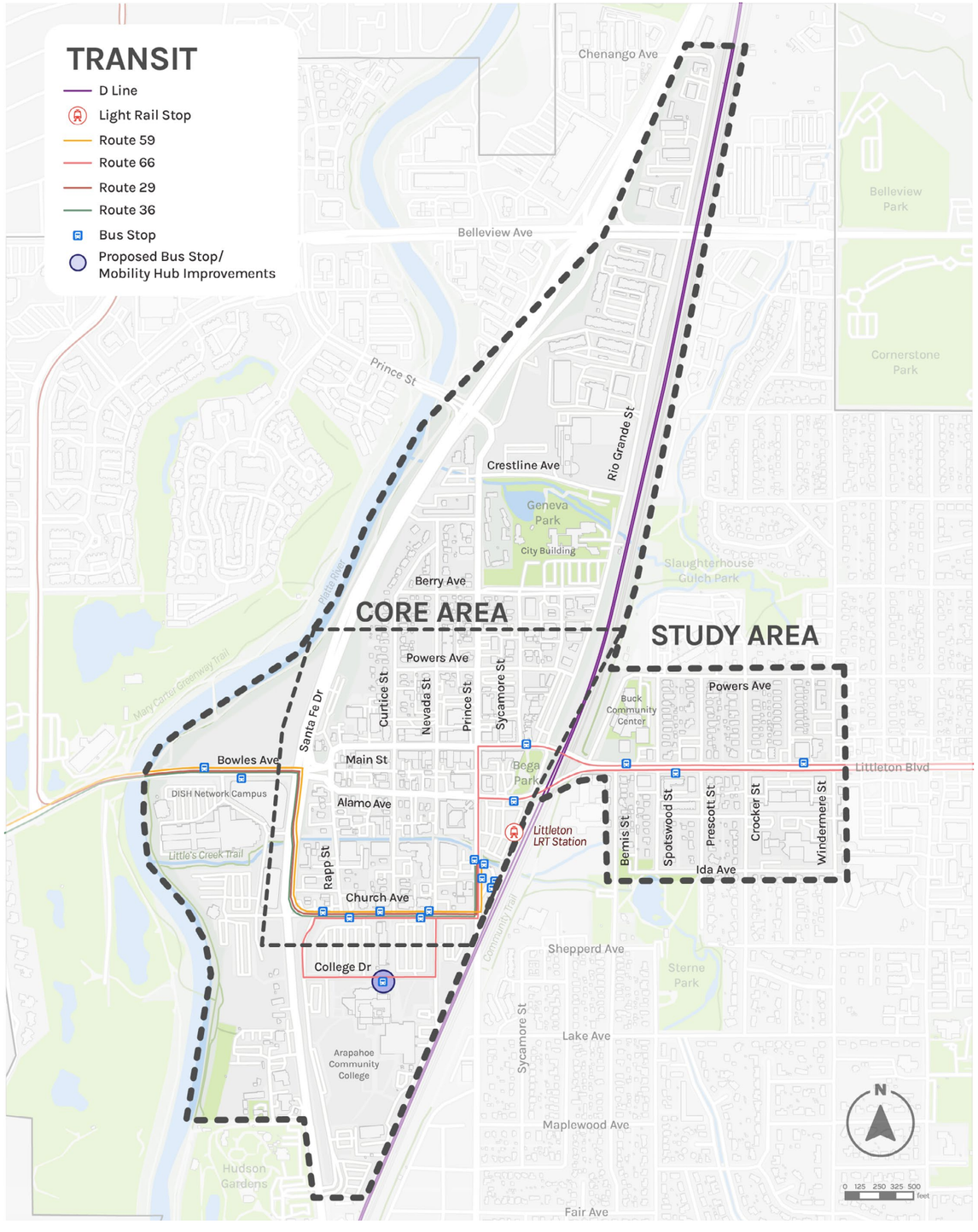
RTD System Map, focused on the study area

Bus stop on Littleton Boulevard

Bus stop on Alamo Avenue near light rail station

Figure 3: Bus Stops in the Study Area

Stop Number	Location	Routes	Amenities	January 2023 Average Weekday Daily Boardings/Alightings
11935	Arapahoe Community College	66	benches, trash can	30/26
12417	Bowles Avenue & Echostar	59, 29, 36/36L	none	1/3
12419	Bowles Avenue & Echostar	59, 29, 36/36L	bench	5/1
12759	Church Avenue & Curtice Street	59, 66, 29, 36/36L	bench, trash can	8/8
12761	Church Avenue & Rapp Street	59, 29, 36/36L	bench	1/13
12762	Church Avenue & Nevada Street	59, 29, 36/36L	shelter, bench, trash can	0/3
15001	Littleton Boulevard & Windermere Street	66	bench, trash can	6/7
15016	Littleton Boulevard & Spotswood Street	66	bench	0/4
15018	Littleton Boulevard & Spotswood Street	66	bench	2/1
15176	Main Street & Rio Grande Street	66	benches	0/23
16081	Prince Street & Church Avenue Gate E	66	trash can	22/2
19865	Church Avenue & Nevada Street	59, 66, 29, 36/36L	bench	3/6
20424	Alamo Avenue & Prince Street Gate G	66	shelter, bench, trash can	39/0
24430	Prince Street & Alamo Avenue Gate F	66	none	1/28
24839	Church Avenue & Santa Fe Drive	59, 29, 36/36L	trash can	9/1
26266	Littleton Downtown Station Gate B	59, 67	shelter, bench, trash can	2/53
26268	Littleton Downtown Station Gate D	59, 29, 67, 36/36L	shelter, bench, trash can	122/121
33235	Littleton Downtown Station Gate C	59, 29, 67	shelter, bench, trash can	55/0



LIGHT RAIL

The following table summarizes 2023 service levels for the D line that serves the downtown Littleton area.

Figure 4: Light Rail Service at the Downtown Littleton Station

Route	Name	Days of Operation	Peak Hour Frequency
D line	Downtown Denver (18th/ California & Stout) – Littleton/Mineral	All	15 minutes

The D line has one stop in the study area. The table below details amenities and average ridership (January – May 2023) at this stop.

Figure 5: Light Rail Stops in the Study Area

Stop Number	Routes	Amenities	January 2023 Average Weekday Daily Boardings/Alightings
Littleton/ Downtown	D Line	shelter, benches, trash cans	589/611

Bike rack at the Downtown Littleton Station

Shelter and benches at the Downtown Littleton Station

Public art at the Downtown Littleton Station

Little Free Library at the Downtown Littleton Station

NEEDS ASSESSMENT

Transit connectivity is decent in the study area, with the D line stop in the downtown core and four bus routes that connect to this station.

Light Rail

The D Line runs frequently (every 15 minutes) and has most of the typical amenities at the station. No major changes needed at this stop, outside of enhancing connectivity for people biking and walking.

Improve Bus Connectivity

The bus routes in the study area only run once an hour at peak times, making bus travel a difficult option for those traveling to and from the downtown area.

- Coordinate with RTD in an effort to increase the frequency, especially for the 66, which sees the highest ridership on average.

All routes only run through the southern part of the study area, which leaves the northern residential area far from any bus stop.

- Change one of the bus routes to come from Belleview Avenue down Prince Street to provide transit connection for the neighborhood north of the core area.

The bus stops in the area are extremely close together. A bus stopping too frequently can increase dwell times significantly to a point that transit is not a viable travel option.

- Conduct an analysis to identify bus stops that should be consolidated.

Enhance Bus Stop Amenities

- Bus stop/mobility hub improvements like amenities and wayfinding at stop #11935, which services Arapahoe Community College.
- Install a bench and shelter at stop #24430, which currently has no amenities and is across from the light rail station.

PEOPLE DRIVING

Main Street and Alamo Avenue make up the roadway couplet that bisect the core of Downtown Littleton. Main Street and Alamo Avenue grow out of Bowles Avenue on the west side of Downtown and Littleton Boulevard on the east side. They were both recently re-classified as “downtown” streets by the Littleton TMP and have two travel lanes, 25 mph speed limits, and on-street parking on one or both sides. When a turn lane is present, Main Street and Alamo Avenue have three lanes. Santa Fe Drive is a regional highway that travels north-south on the west end of the study area. It has seven travel lanes with a 45 mph speed limit near Downtown and a 55 mph speed limit north of Prince Street and a 50 mph speed limit south of Sumner Street. Rio Grande Street is a 30 mph local road with two travel lanes that marks the eastern edge of the study area. The other streets in the study area are primarily local roads with 30 mph speed limits by default, with the exception of Prince Street with a 25 mph speed limit.

TRAFFIC VOLUME AND SPEEDS

The project team collected average daily traffic (ADT) counts and speeds at five locations in the study area on Thursday, August 24th and Saturday, August 28th. Table 8 and Table 9 display the 85th percentile speeds and ADT counts, respectively. In general, vehicle volumes and speeds were slightly lower on the weekends. Note: These five streets are all signed for 25 mph.

Figure 6: Weekday (Thursday) Traffic Speeds and Volumes

Location (*italic* indicates one-way street)	**Speed (85th percentile)**	**Average Daily Traffic (ADT)**
Prince Street between Alamo Avenue and Church Avenue	28.6	7,760
Prince Street between Powers Avenue and Berry Avenue	33.3	5,900
Alamo Avenue between Nevada Street and Prince Street	24.9	8,340
Main Street between Nevada Street and Prince Street	25.2	8,490
Littleton Boulevard between Court Place and Bemis Street	33.9	18,860

Figure 7: Weekend (Saturday) Traffic Speeds and Volumes

Location (*italic* indicates one-way street)	**Speed (85th percentile)**	**Average Daily Traffic (ADT)**
Prince Street between Alamo Avenue and Church Avenue	29.5	5,510
Prince Street between Powers Avenue and Berry Avenue	26.8	4,450
Alamo Avenue between Nevada Street and Prince Street	24.4	7,350
Main Street between Nevada Street and Prince Street	23.4	7,730
Littleton Boulevard between Court Place and Bemis Street	33.5	15,310

ACCESS

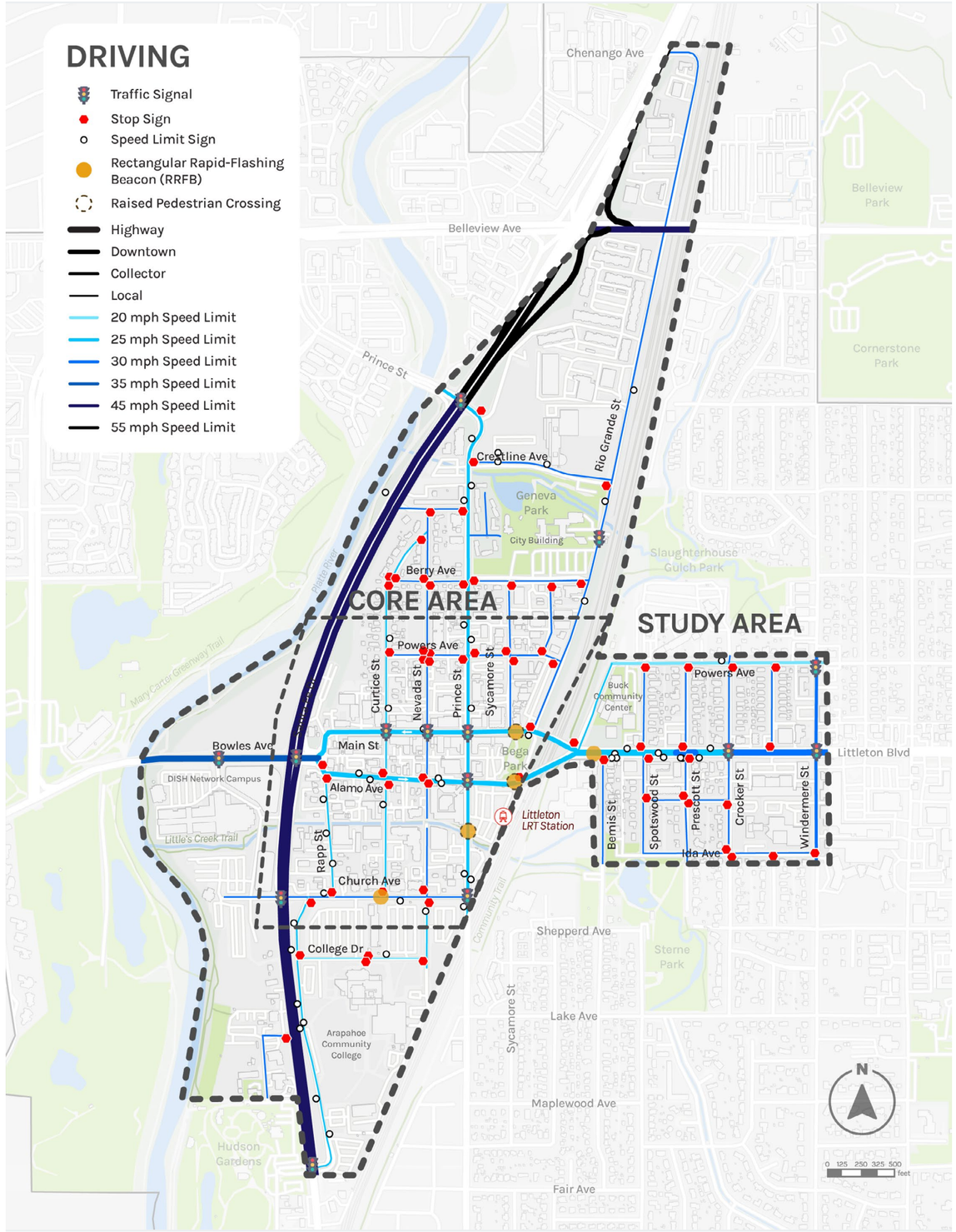
Primary vehicle access to businesses in the downtown core is via driveways and alleys on the north-south streets that cross Main Street and Alamo Avenue. On-street and off-street parking provide additional access to businesses in this area. There is one alley between Main Street and Alamo Avenue that provides business and parking lot access. Elsewhere in the study area, driveways and alleys are a common form of access.

LOADING

There are only three marked loading zones in the study area – one at Nevada Street in front of Arapahoe Community College Art and Design Center, and two on Bemis Street next to Vita Littleton and the Colorado Academy of Martial Arts. Outside of these locations, deliveries happen primarily in the alleys downtown.

Rectangular Rapid-Flashing Beacon (RRFB) and raised pedestrian crossing on Main Street

Vehicles at the intersection of Alamo Avenue and Prince Street



VEHICLE VOLUMES

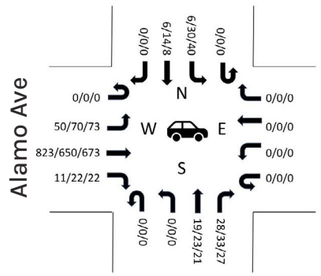
Vehicles were counted at seven locations in the core area as noted on the **Vehicle Count Locations** map. Data was collected on August 24th and 26th, 2023 during Thursday AM and PM peak hours, as well as Saturday at noon.These locations were selected based on land use and potential vehicle demand.

The numbers shown in the diagrams below account for vehicles crossing the street at intersections. The first number in the series indicates vehicles crossing during the morning peak, the middle number indicates crossings during the evening peak, and the last number indicates crossings during the Saturday peak.

XX/XX/XX
AM Peak/PM Peak/Saturday Peak

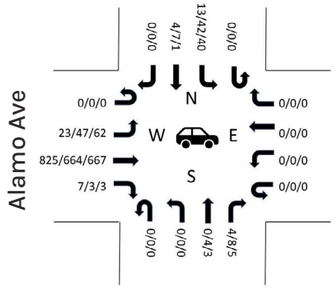
LOCATION A:

Curtice St



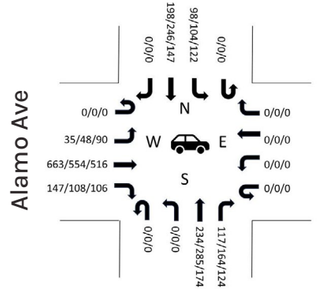
LOCATION B:

Nevada St



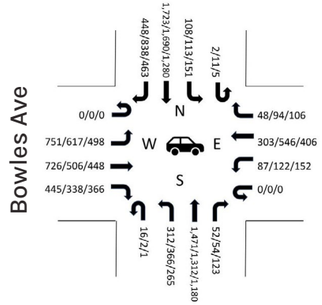
LOCATION C:

Prince St



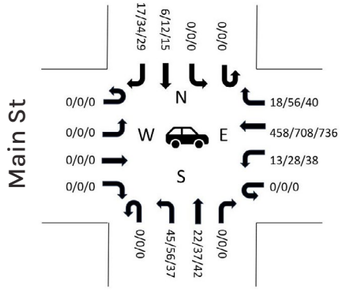
LOCATION D:

Santa Fe Dr



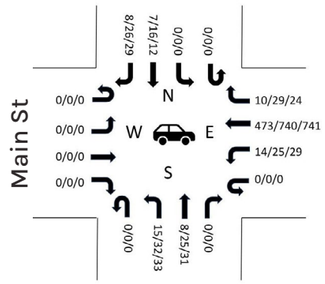
LOCATION E:

Curtice St



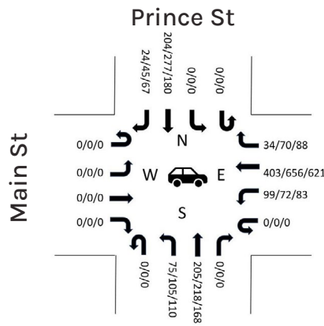
LOCATION F:

Nevada St



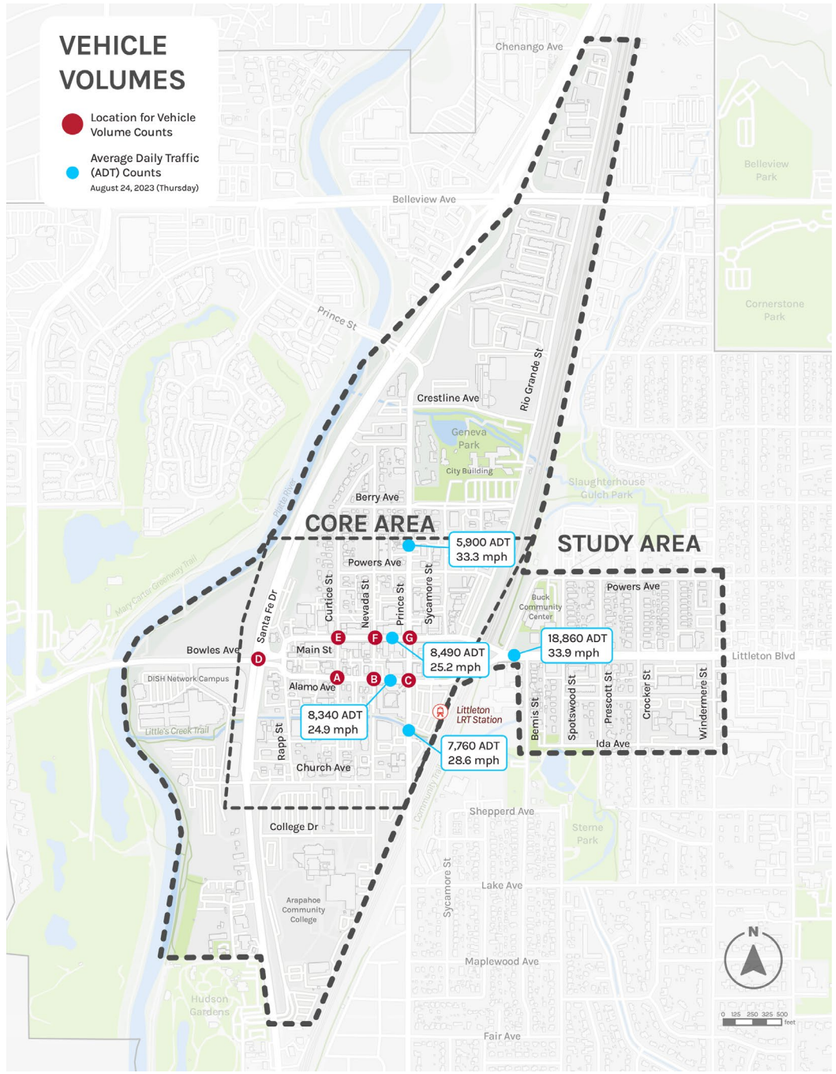
LOCATION G:

Prince St



KEY TAKEAWAYS

The intersection of Bowles Avenue and Santa Fe Drive is the busiest in the study area. Over 6,000 vehicles travel through this intersection during each of the AM and PM peak hours compared to approximately 1,500 vehicles traveling through the intersection of Alamo Avenue & Prince Street in each of the AM and PM peak hours. Main Street and Alamo Avenue are one-way couplets in the downtown area between Santa Fe Drive and South Court Place. These roadways transition to two-way east and west of the downtown area and become Littleton Boulevard to the east and Bowles Avenue west of the downtown area. There are approximately 5,500 vehicles per day traveling on Main Street and Alamo Avenue and approximately 15,000 vehicles per day traveling on Littleton Boulevard. Prince Street is the highest traveled north/south roadway as it provides greater connections to the larger network and direct access to the RTD park-n-ride station and connects to Santa Fe Boulevard. Turning movement counts onto and from Curtice Street and Nevada Street are low, likely because these roadways do not provide as much connection to the network outside of the downtown core. Speed data was collected at five locations. In general, 85th percentile speeds were at or below the speed limit, with the exception of Prince Street between Alamo Avenue and Church Avenue which was operating at 30MPH and Littleton Boulevard between Court Place and Bemis Street which was operating at 34 MPH. On Littleton Boulevard, over 40% of vehicles are operating over 30 MPH.



TRAFFIC OPERATIONS ANALYSIS

The project team conducted traffic operations analysis in the study area using Synchro 11 software and signal plans provided by the City of Littleton. Synchro 11 uses the Highway Capacity Manual, 6th Edition (HCM) methodology to assess the performance of signalized intersections. The following table outlines the data that was used to code the traffic model.

Figure 8: Existing Conditions Synchro Assumptions

Data Category	Data Sources
Analysis Year	Year 2023
Time Periods	Weekday AM peak hour Weekday PM peak hour Weekend mid-day peak hour
Turning Movement Counts	Collected the week of August 21st
Signal Timing	Signal timing plans provided by City of Littleton
Roadway Speeds	85th percentile speeds

Queues

The Highway Capacity Manual defines a Queue as: "A line of vehicles, bicycles, or persons waiting to be served by the system in which the flow rate from the front of the queue determines the average speed within the queue." The modeled 95th percentile vehicle queue length is used to estimate the extent of queued vehicles for an approach.

Level of Service

To measure and describe the operational status of the local roadway network and corresponding intersections, transportation engineers and planners commonly use a grading system called level of service (LOS) put forth by the Transportation Research Board's HCM 2010. LOS characterizes the operational conditions of an intersection's traffic flow; ranging from LOS A (indicating free flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed the design capacity, resulting in long queues and delays). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. Traffic conditions with LOS E or F are generally considered unacceptable and represent significant travel delay, increased accident potential, and inefficient motor vehicle operation. The LOS is determined differently depending on the type of control at the intersection.

At signalized intersections, the operation analysis uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the intersection's volume-to-capacity (v/c) ratio. For signalized intersections, the HCM defines the intersection LOS as the average delay per vehicle for the overall intersection, which includes all approaches.

At unsignalized intersections, the operation analysis uses various intersection characteristics (such as traffic volumes, lane geometry, and stop-controlled approaches) to estimate the intersection's volume-to-capacity (v/c) ratio. For unsignalized intersections the HCM defines the intersection LOS as either the average delay per vehicle for the worst approach or the whole intersection for side-street stop and all-way stop intersections, respectively.

The following tables display the thresholds for delay for signalized and unsignalized intersections.

Figure 9: Intersection Level of Service

Level of Service	Signalized Intersection - Average Control Delay (Seconds)	Unsignalized Intersection - Average Control Delay (Seconds)
A	< 10	< 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Synchro Limitations

The Synchro software and HCM methodology assumes traffic behaves uniformly and does not account for the individual differences and interactions of drivers, vehicles, and road conditions such as driver behavior and lane changing. Additionally, delay and queuing results are calculated for individual intersections and do not account for delay or queuing from adjacent intersections. For example, delay at Santa Fe Drive & Bowles Avenue may impact adjacent signals, but reported delay from the HCM methodology does not account for this when reporting delay and queuing.

Existing Conditions Operations

The study area contains seven intersections, five of which are signalized and two of which are stop-controlled. To better understand traffic operations along the corridor, the project team conducted a traffic analysis using existing volume data and lane configurations. The analysis focused on the morning and evening peak hours on a weekday and the mid-day peak hour on a Saturday. Summaries of the analysis for each intersection are on the following pages. With the exception of the Sante Fe and Bowles intersection, all other intersections currently operate in overall stable conditions, despite some turning movements creating delays.

Main Street and Prince Street

The intersection of Main Street and Prince Street is signalized intersection with one-way traffic on Main Street in the westbound direction and bi-directional traffic on Prince Street. The intersection operates at LOS A during the AM and Saturday peak periods and operates at LOS C in the PM peak period.

Movement Abbreviations

EB = eastbound
WB = westbound
NB = northbound
SB = southbound
L = left turn lane
T = through turn lane
R = right turn lane

Figure 10: Traffic Operations at Main Street and Prince Street

	AM Peak (7:30 a.m. - 8:30 a.m.)				PM Peak (4:30 p.m. - 5:30 p.m.)				Sat. Peak (11:45 a.m. - 12:45 p.m.)			
Movement	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**
WBL	103	0	A	-	78	38.3	D	-	82	0	A	-
WBT	397	0	A	290	633	0	A	284	586	0	A	429
WBR	37	0	A	-	65	34.9	C	-	71	0	A	-
NBL	67	0.4	A	82	115	9.4	A	109	107	0.5	A	82
NBT	202	5	A	193	232	19.2	B	192	161	4	A	114
SBT	196	1.2	A	155	264	13.3	B	192	176	1.3	A	135
SBR	25	1	A	0	45	11.3	B	11	61	1.2	A	20
Overall		2.7	A			26.6	C			2	A	

Main Street and Nevada Street

Main Street and Nevada Street is a signalized intersection with one-way traffic on Main Street in the westbound direction and bi-directional traffic on Nevada Street. The intersection has low turning volumes and operates with minimal delay and queuing during all peak hours.

Figure 11: Traffic Operations at Main Street and Nevada Street

	AM Peak (7:30 a.m. - 8:30 a.m.)				PM Peak (4:30 p.m. - 5:30 p.m.)				Sat. Peak (11:45 a.m. - 12:45 p.m.)			
Movement	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**
WBL	13	0	A	-	25	0	A	-	25	0	A	-
WBT	465	0	A	62	740	0	A	126	696	0	A	38
WBR	9	0	A	-	29	0	A	-	23	0	A	-
NBL	12	0.1	A	-	32	0.2	A	-	35	0.2	A	-
NBT	6	0	A	26	25	0	A	66	37	0	A	79
SBT	6	0	A	19	16	0	A	37	12	0	A	34
SBR	10	0.1	A	-	26	0.2	A	-	30	0.2	A	-
Overall		0.1	A			0.2	A			0.2	A	

Main Street and Curtice Street

Main Street and Curtice Street is a signalized intersection with one-way traffic on Main Street in the westbound direction and bi-directional traffic on Curtice Street. The intersection has low turning volumes and operates with minimal delay and queuing during all peak hours.

Figure 12: Traffic Operations at Main Street and Curtice Street

	AM Peak (7:30 a.m. - 8:30 a.m.)				PM Peak (4:30 p.m. - 5:30 p.m.)				Sat. Peak (11:45 a.m. - 12:45 p.m.)			
Movement	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**
WBL	7	0	A	-	22	0	A	-	30	0	A	-
WBT	453	0	A	14	736	0	A	85	695	0	A	232
WBR	16	0	A	-	41	0	A	-	42	0	A	-
NBL	38	0.2	A	-	52	0.2	A	-	48	0.2	A	-
NBT	22	0	A	60	35	0	A	89	41	0	A	83
SBT	4	0	A	19	14	0	A	-	15	0	A	34
SBR	17	0.1	A	-	25	0.2	A	34	32	0.2	A	-
Overall		0.2	A			0.1	A			0.2	A	

Alamo Avenue and Prince Street

The intersection of Alamo Avenue & Prince Street is a signalized intersection with one-way traffic on Alamo Avenue in the eastbound direction and bi-directional traffic on Prince Street. The intersection operates at LOS B during all peak hours with the northbound movements operating at LOS C.

Figure 13: Traffic Operations at Alamo Avenue and Prince Street

	AM Peak (7:30 a.m. - 8:30 a.m.)				PM Peak (4:30 p.m. - 5:30 p.m.)				Sat. Peak (11:45 a.m. - 12:45 p.m.)			
Movement	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**
EBL	35	0	A	-	56	0	A	-	90	0	A	-
EBT	663	0	A	519	525	0	A	395	516	0	A	378
EBR	147	0	A	-	115	0	A	-	106	0	A	-
NBR	234	31.4	C	208	282	26.2	C	213	174	24.3	C	136
NBT	117	28.2	C	38	167	24.3	C	43	124	23.8	C	39
SBL	98	7.3	A	76	115	6.5	A	100	122	3.4	A	79
SBT	198	4.9	A	140	235	5	A	185	147	1.6	A	93
Total		19.1	B			16.7	B			13.8	B	

Alamo Avenue and Nevada Street

The intersection of Alamo Avenue and Nevada Street is an unsignalized intersection with stop control on Nevada Street. There is one-way traffic on Alamo Avenue in the eastbound direction and bi-directional traffic on Nevada Street. The intersection operates at LOS B during all peak hours with some individual movements operating at LOS C.

Figure 14: Traffic Operations at Alamo Avenue and Nevada Street

	AM Peak (7:30 a.m. - 8:30 a.m.)				PM Peak (4:30 p.m. - 5:30 p.m.)				Sat. Peak (11:45 a.m. - 12:45 p.m.)			
Movement	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**
EBL	23	-	-	-	48	-	-	-	62	-	-	-
EBT	825	-	-	-	647	-	-	-	667	-	-	-
EBR	7	-	-	-	2	-	-	-	3	-	-	-
NBT	0	-	-	-	4	12.6	B	3	3	13	B	3
NBR	4	11.6	B	0	7	-	-	-	5	-	-	-
SBL	13	-	-	-	41	-	-	-	40	-	-	-
SBT	4	15.1	C	5	3	13.3	B	8	1	13.9	B	8
SBR	0	-	-	-	0	-	-	-	0	-	-	-

Alamo Avenue and Curtice Street

The intersection of Alamo Avenue & Curtice Street is an unsignalized intersection with stop control on Curtice Street. There is one-way traffic on Alamo Avenue in the eastbound direction and bi-directional traffic on Curtice Street. The intersection operates at acceptable levels with AM and PM peak hours experiencing LOS C and the Saturday peak experiencing LOS B.

Figure 15: Traffic Operations at Alamo Avenue and Curtice Street

	AM Peak (7:30 a.m. - 8:30 a.m.)				PM Peak (4:30 p.m. - 5:30 p.m.)				Sat. Peak (11:45 a.m. - 12:45 p.m.)			
Movement	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**
EBL	50	-	-	-	65	-	-	-	73	-	-	-
EBT	823	-	-	-	636	-	-	-	673	-	-	-
EBR	11	-	-	-	19	-	-	-	22	-	-	-
NBT	19	17	C	13	22	14.6	B	10	21	14.6	B	10
NBR	28	-	-	-	30	-	-	-	27	-	-	-
SBL	6	-	-	-	27	-	-	-	40	-	-	-
SBT	6	18.2	C	3	11	16.1	C	-	8	-	-	-
SBR	0	-	-	-	0	-	-	-	1	-	-	-

Bowles Avenue and Santa Fe Drive

The intersection of Bowles Avenue & Santa Fe Drive is a four-way signalized intersection. The intersection operates poorly during all peak hours at LOS F. Multiple movements experience high delay and have significantly high queues greater than 1,000 feet.

Movement Abbreviations

EB = eastbound
WB = westbound
NB = northbound
SB = southbound
L = left turn lane
T = through turn lane
R = right turn lane

Figure 16: Traffic Operations at Bowles Avenue and Santa Fe Drive

	AM Peak (7:30 a.m. - 8:30 a.m.)				PM Peak (4:30 p.m. - 5:30 p.m.)				Sat. Peak (11:45 a.m. - 12:45 p.m.)			
Movement	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**	**Volume**	**Delay (s)**	**LOS**	**95% Queue (ft)**
EBL	751	97.3	F	559	617	94.7	F	454	498	60.2	E	269
EBT	726	108	F	615	506	67.9	E	335	498	54	D	247
EBR	445	50.9	D	309	338	51.1	D	167	366	44.2	D	194
WBL	87	58.1	E	71	122	56	E	94	152	43.6	D	93
WBT	303	61.1	E	207	546	75.3	E	381	406	47.2	D	212
WBR	48	52.6	D	0	94	51.4	D	28	106	39.4	D	18
NBL	328	91.5	F	271	368	82.6	F	278	266	59.5	E	165
NBT	1471	138.9	F	1107	1312	59.3	E	832	1180	68.6	E	665
NBR	52	29	C	0	54	26.6	C	0	123	26.7	C	30
SBL	108	754.7	F	318	124	824.5	F	348	156	810.7	F	357
SBT	1723	95.5	F	826	1690	57.3	E	687	1280	38.3	D	400
SBR	448	43.4	D	294	838	76.6	E	808	463	30.3	C	77
Total		108.1	F			81.1	F			71.7	F	

NEEDS ASSESSMENT

Intersection Improvements and Traffic Calming

Future configuration of the roadway will need to maintain two travel lanes on Main Street and Alamo Avenue to accommodate 20 feet of clearance for emergency response.

Coordinate with the Santa Fe Planning and Environmental Linkages (PEL) team to coordinate improvements and vehicular impacts at the Santa Fe & Bowles Avenue intersection.

Design and install improvements, for example, curb extensions, raised intersections, or pedestrian refuge medians, at intersections to slow vehicles and improve pedestrian/bicycle crossings.

Design and install traffic calming measures to reduce vehicle operating speeds. Currently, vehicles are operating above the speed limit on Prince Street and Littleton Boulevard.

Evaluate removal of turn lanes throughout the core area to provide more pedestrian space.

Wayfinding

Install wayfinding signage to more effectively direct drivers to key destinations.

PARKING

Currently, there are many opportunities to park in Littleton's downtown core. Business patrons, employees, and visitors can park on-street for free in many areas. The majority of these on-street spaces are limited to 2 hours. Off-street parking opportunities also exist throughout the study area. Four of these lots are paid-only, but many of the other lots are reserved for the patrons of nearby businesses. Occupancy data was collected for all locations shown on the **Parking Restrictions** map. This analysis can be found in the Parking Occupancy section.

Note: The map only shows areas for which parking data was collected and is not representative of all parking within the study area. Private lots with under 20 parking spaces were not included in data collection as they are not likely opportunities for public parking.

ON-STREET PARKING

On-street parking restrictions in the downtown core are primarily 2-hour parking (9AM-6PM), which is geared towards business patrons. On the west end of Main Street, there are two valet spots, which are for Viewhouse patrons, and three spots for 30-minute parking. There are 10 spots for 15-minute parking (8AM-5PM) at the corner of Prince Street and Alamo Avenue, likely for quick post office trips. Court Place, next to the Buck Community Center and courthouse, has 3-hour parking restrictions (8AM-5PM).

Unrestricted on-street parking can be found to the north of the downtown core in the residential area. Notably, there are three streets that have some permit-only restrictions and exceptions. On Curtice Street, anyone can park for two hours, but permit holders are excepted from these time restrictions. The northeast side of Sycamore Street and east side of Bemis Street are reserved for permit holders only (Monday - Friday 8AM – 4PM). These restrictions were put into place when the RTD Park-and-Ride lot was in high demand, causing riders to park on adjacent residential streets.

OFF-STREET PARKING

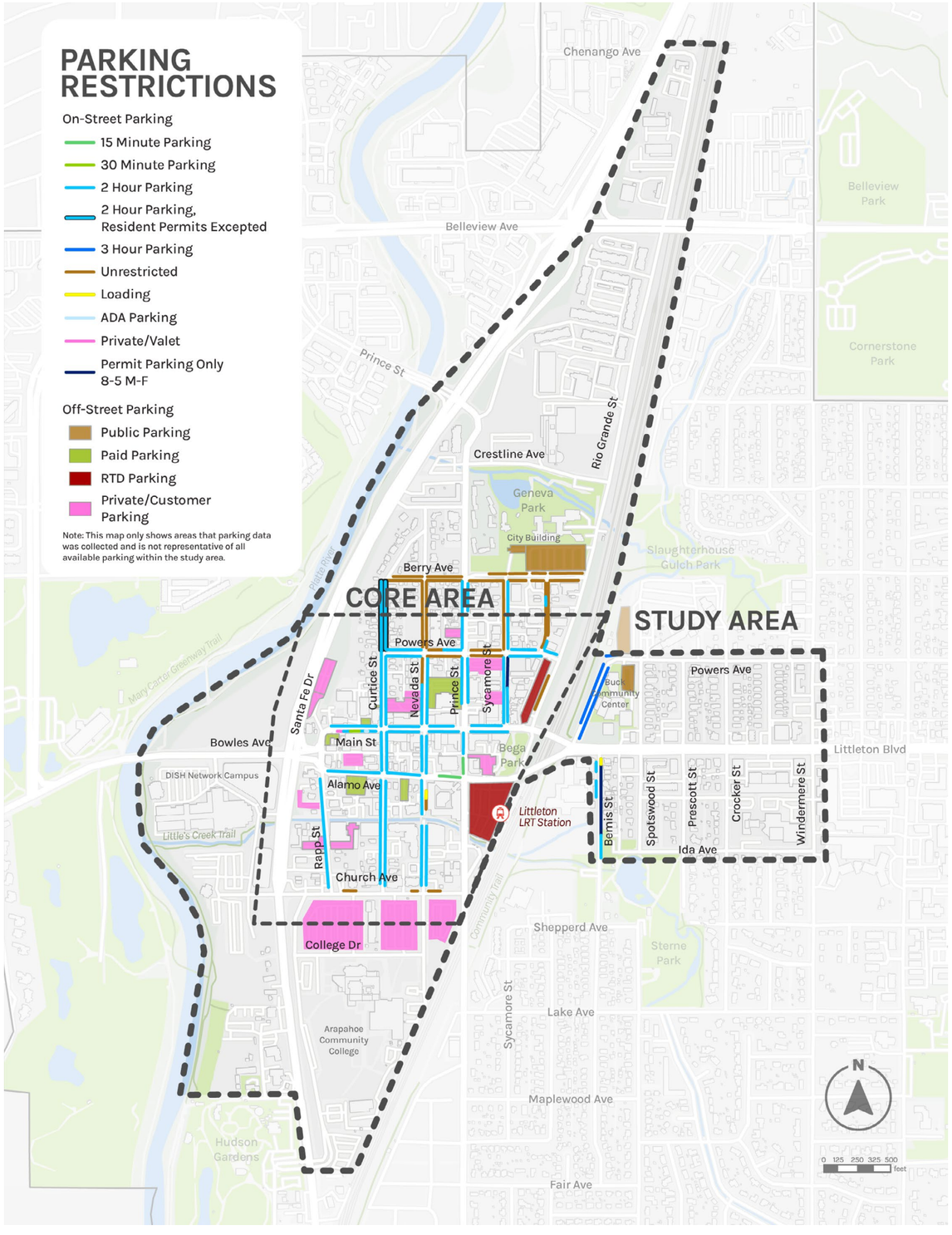
Privately-owned off-street parking is available for a majority of the businesses in the downtown core. There are five paid off-street lots that are open to the public which charge between $4.35 per day and $2.95 for two hours. RTD has two Park-and-Ride lots, which have a total capacity of 356. Vehicles registered within RTD boundaries park for free in this lot for up to 24 hours. The City also owns a few public lots in front of the City building and at the Buck Community Center, where people can park for free. Arapahoe Community College has three large lots that are underutilized in the summer months. These lots have been used to supplement parking for events downtown in the past, and present an opportunity for a shared parking agreement.

OCCUPANCY DATA

Downtown Littleton contains multiple commercial buildings, townhomes, single-family homes, and an RTD light-rail station. These varying sources of activity in the study area must balance out in regard to parking demand. To make data-driven parking management recommendations, occupancy data was collected on a weekday (July 13, 2023) and a weekend (July 8, 2023) at 5AM to record overnight residential parking demand, 12PM to record commercial parking demand, and 6PM to record mixed demand.

KEY TAKEAWAYS

1. 5AM: Residential Demand
   - Off-street parking demand is low or zero in most of the off-street lots.
   - There is some on-street parking demand (1-50% occupancy) in the residential areas north of Main Street and low on-street parking demand (0-25% occupancy) south of Main Street.
2. 12PM: Commercial Demand
   - Parking demand in the downtown core is very high (51-100%, with approximately half of locations 85% or more occupied) for both on- and off-street parking.
   - On-street parking is more than 85% utilized at noon on the majority of Main Street and Alamo Avenue on both Thursday and Saturday.
   - Spare capacity exists in off-street lots near high demand on-street parking areas. Notably, on-street parking in the area is free, whereas some of the off-street is paid.
   - Thursday at noon had the highest parking demand among the times data was collected.
3. 6PM: Mixed Residential and Commercial Demand
   - Parking demand in the downtown core is very high (51-100%, with about a third of locations 85% or more occupied) for both on- and off-street parking.
   - On-street parking is more than 85% utilized at 6PM on the majority of Main Street and Alamo Avenue.
   - Parking demand appears to be greater on weekdays, especially near restaurants and commercial areas.
   - Spare capacity exists in off-street lots, especially on weekends, including near the on-street parking areas that are more than 85% utilized.



NEEDS ASSESSMENT

There is not a need to build more parking downtown, as there is parking available within a block of any point in the study area under normal circumstances.

Shared Parking Agreements

The City should employ parking management strategies such as shared parking agreements with some of the nearby private lots, which would open public parking locations in underutilized areas. The Arapahoe Community College campus has three lots that are very underutilized in the summer and currently support parking needs for many downtown events.

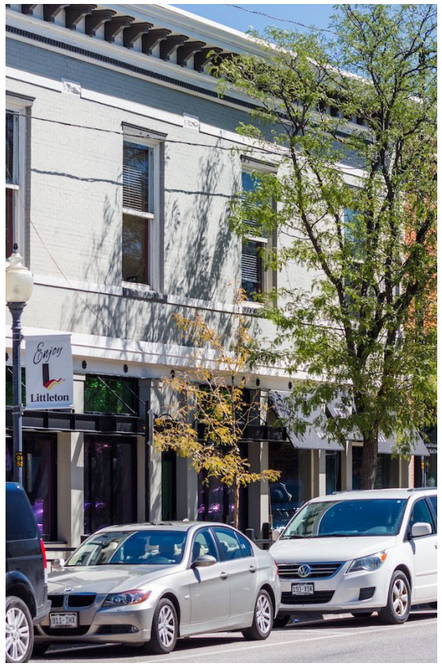
Paid Parking

Existing on-street parking could be converted to 2 or 3 hour paid parking to encourage turnover by users.

Parking Wayfinding

Parking wayfinding could be employed to direct users to lots with available parking.

Vehicles parked along Alamo Avenue



Vehicles parked along Main Street

Figure 17: Average Parking Occupancy

Type of Parking and Location	# of Spots	Average 5AM Occupancy	Average 12PM Occupancy	Average 6PM Occupancy	% of on-street total	% of off-street total	% of grand total
On-street: Main and Alamo	101	2%	96%	97%	10%	-	3%
On-street: Prince	76	5%	40%	47%	8%	-	2%
On-street: Elsewhere	812	12%	45%	41%	82%	-	26%
Off-street: Public	210	15%	44%	26%	-	10%	7%
Off-street: Paid	207	6%	35%	27%	-	9%	7%
Off-street: RTD	356	3%	34%	27%	-	16%	11%
Off-street: ACC main lots	889	0%	12%	5%	-	41%	28%
Off-street: Private	533	8%	38%	41%	-	24%	17%
TOTAL ON STREET PARKING	989						31%
TOTAL OFF STREET*	2195						69%
GRAND TOTAL	3184						100%

** Does not include approximately 85 parking spaces that are in private off-street lots with under 20 spaces, as these were not counted as part of this parking assessment.*

Note: Occupancy data was collected in July 2023. Weekday and weekend counts were averaged for this table.

Parking Occupancy Legend

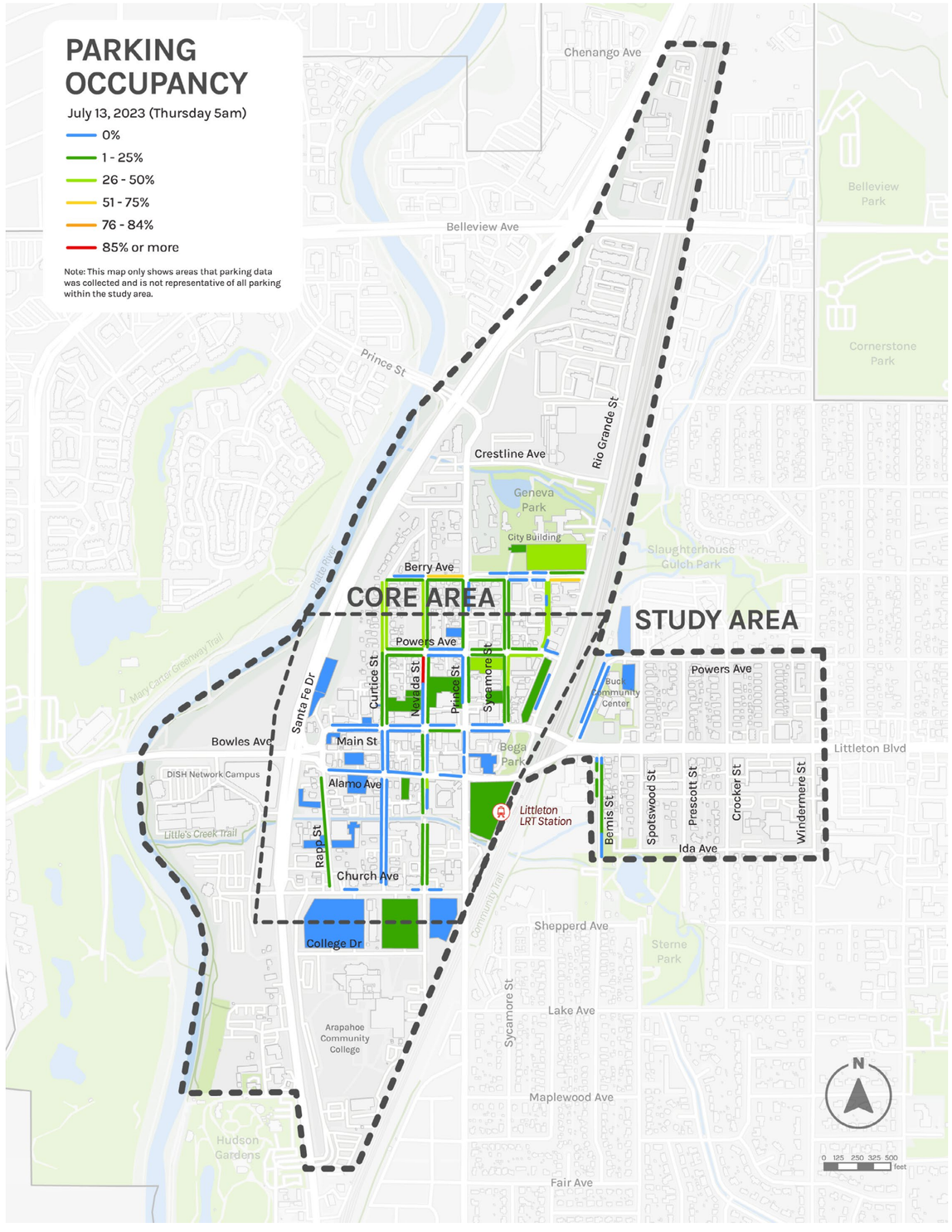
- 0%
- 1- 24%
- 25 - 49%
- 50 - 74%
- 75 - 84%
- 85% or more

PARKING OCCUPANCY

July 13, 2023 (Thursday 5am)

- 0%
- 1 - 25%
- 26 - 50%
- 51 - 75%
- 76 - 84%
- 85% or more

Note: This map only shows areas that parking data was collected and is not representative of all parking within the study area.

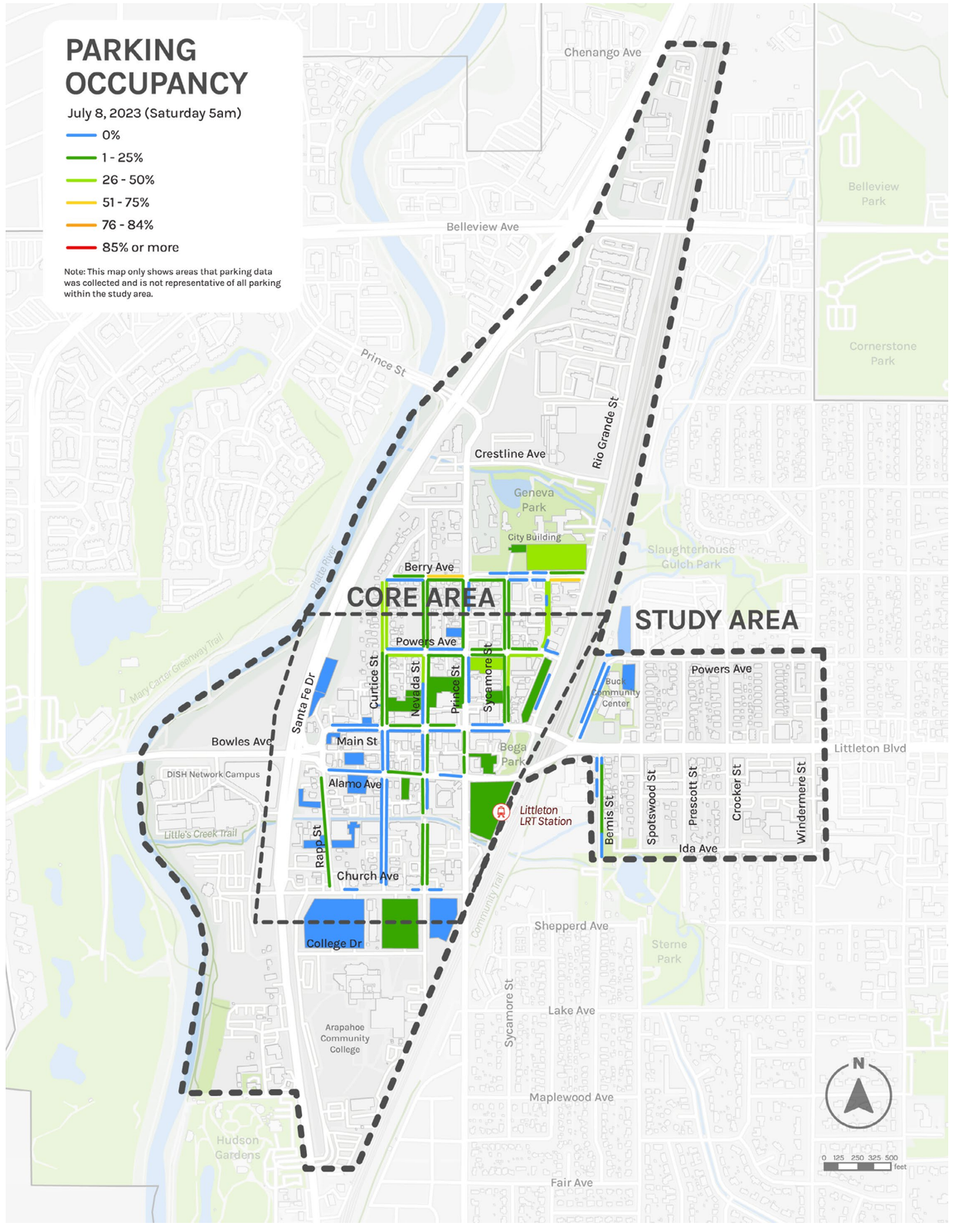


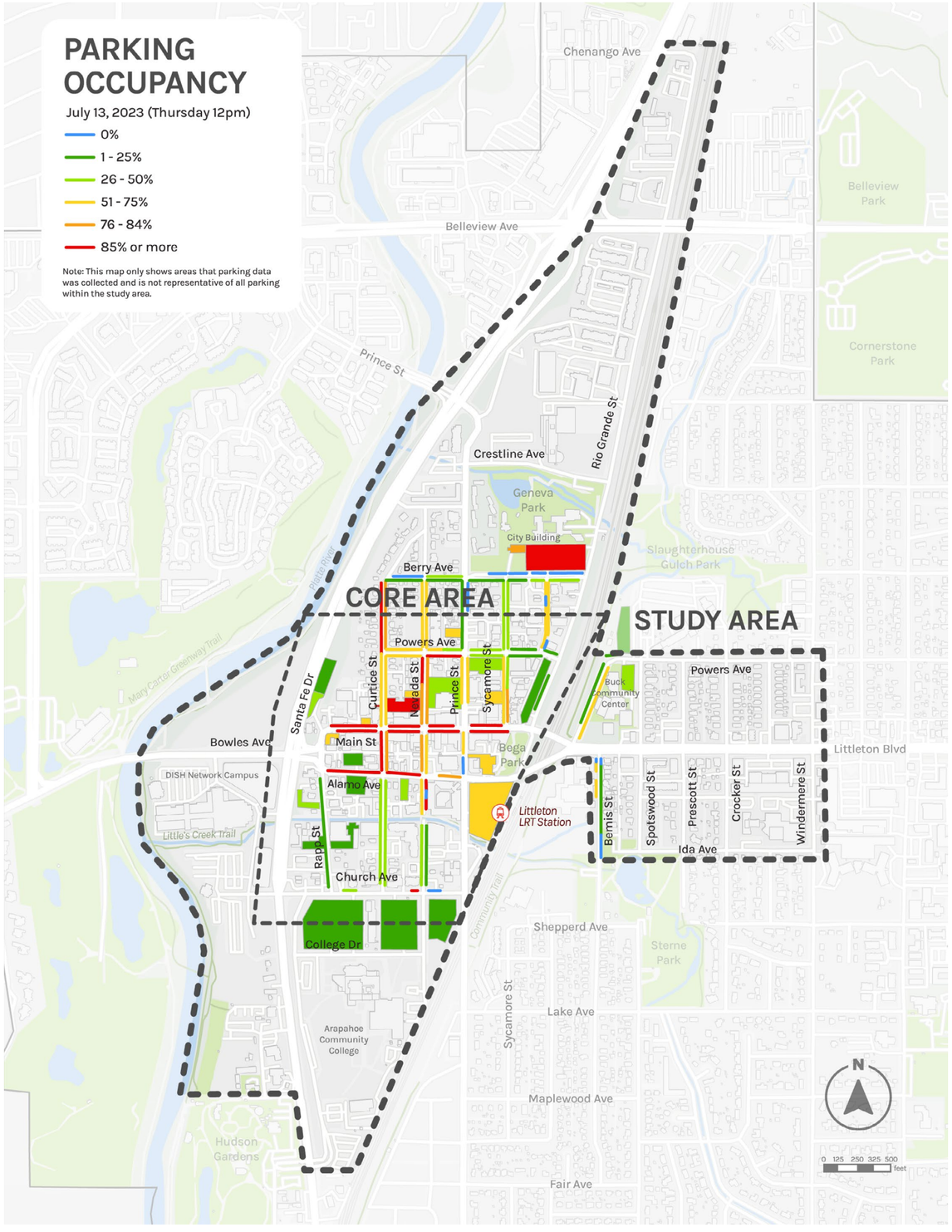
PARKING OCCUPANCY

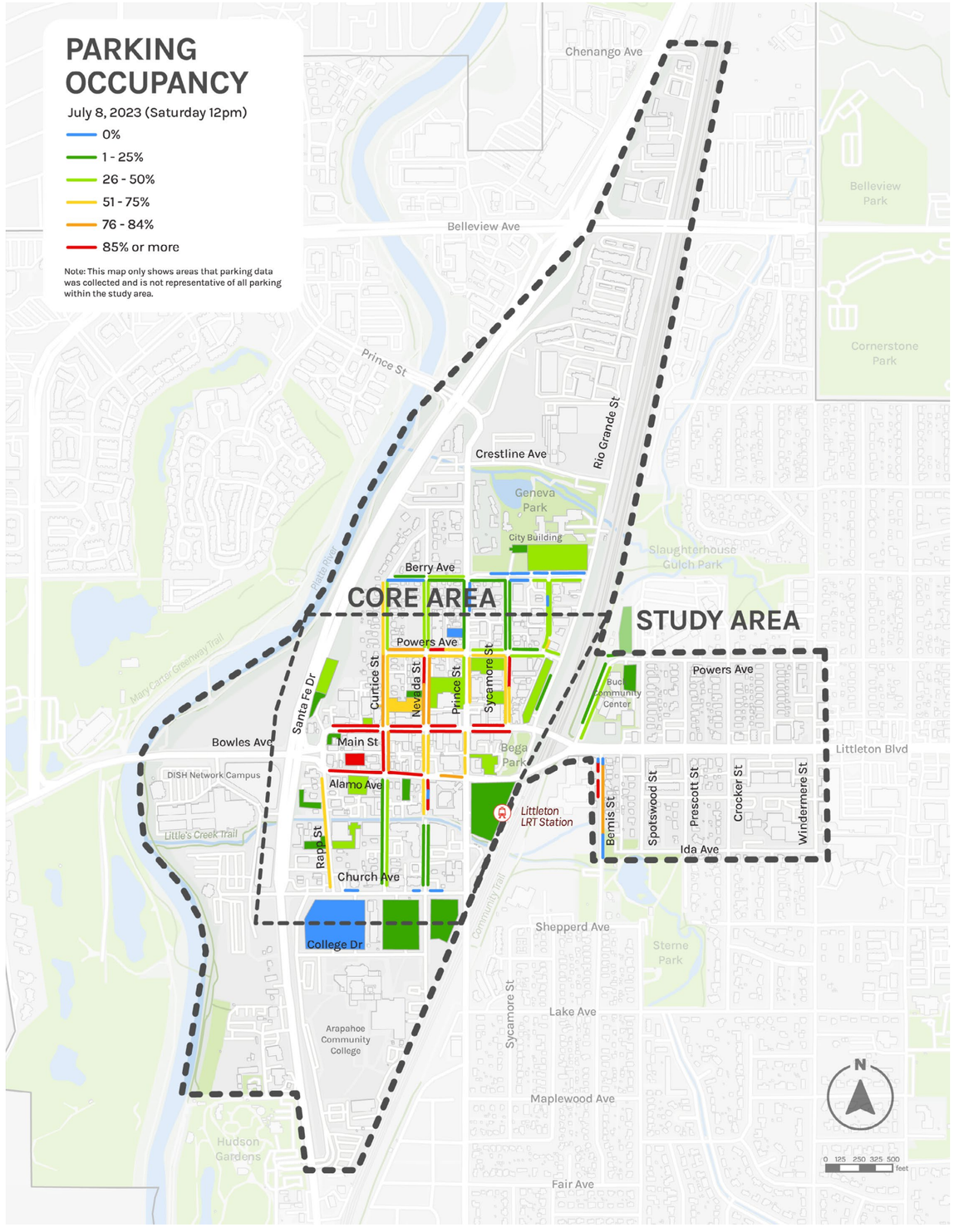
July 8, 2023 (Saturday 5am)

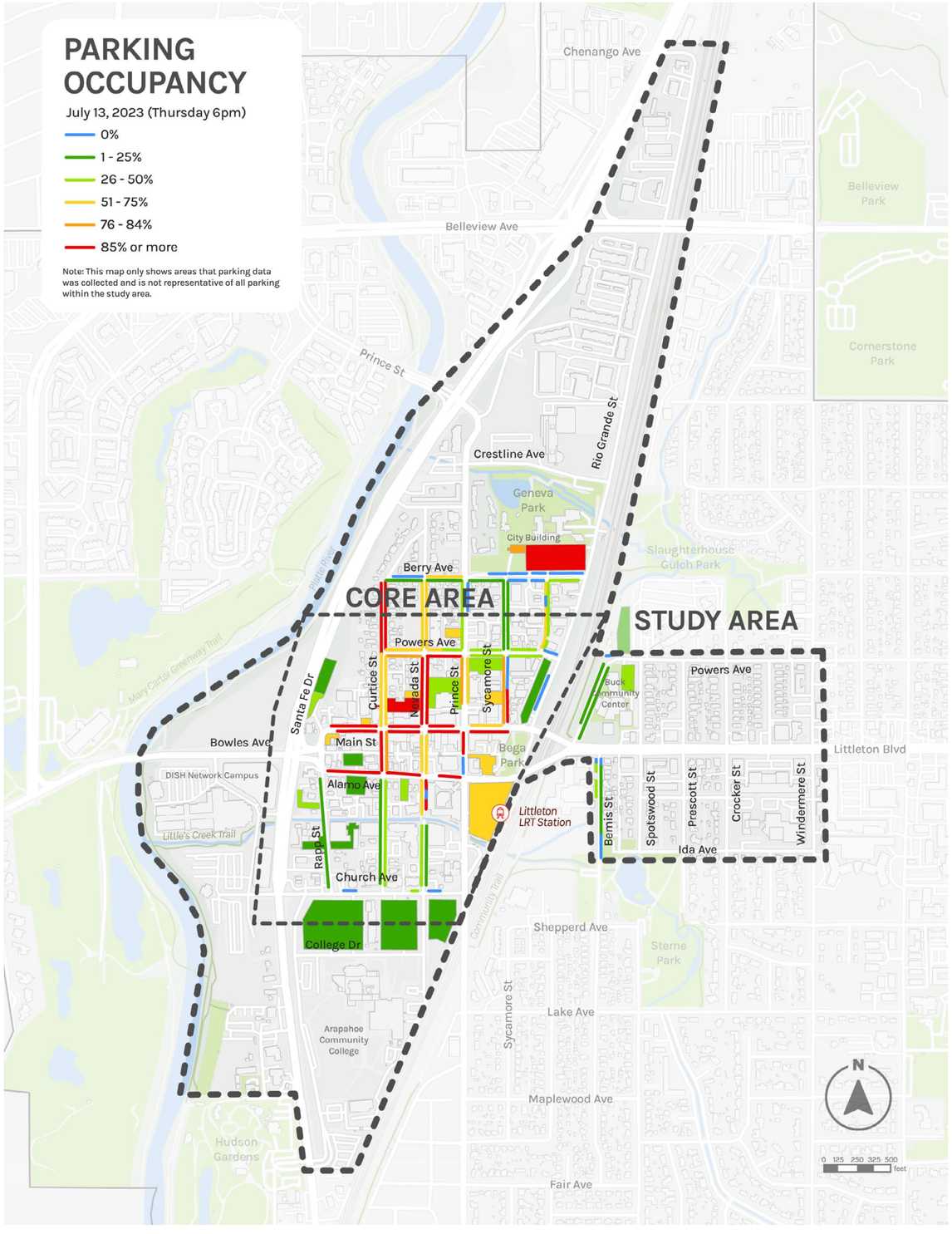
- 0%
- 1 - 25%
- 26 - 50%
- 51 - 75%
- 76 - 84%
- 85% or more

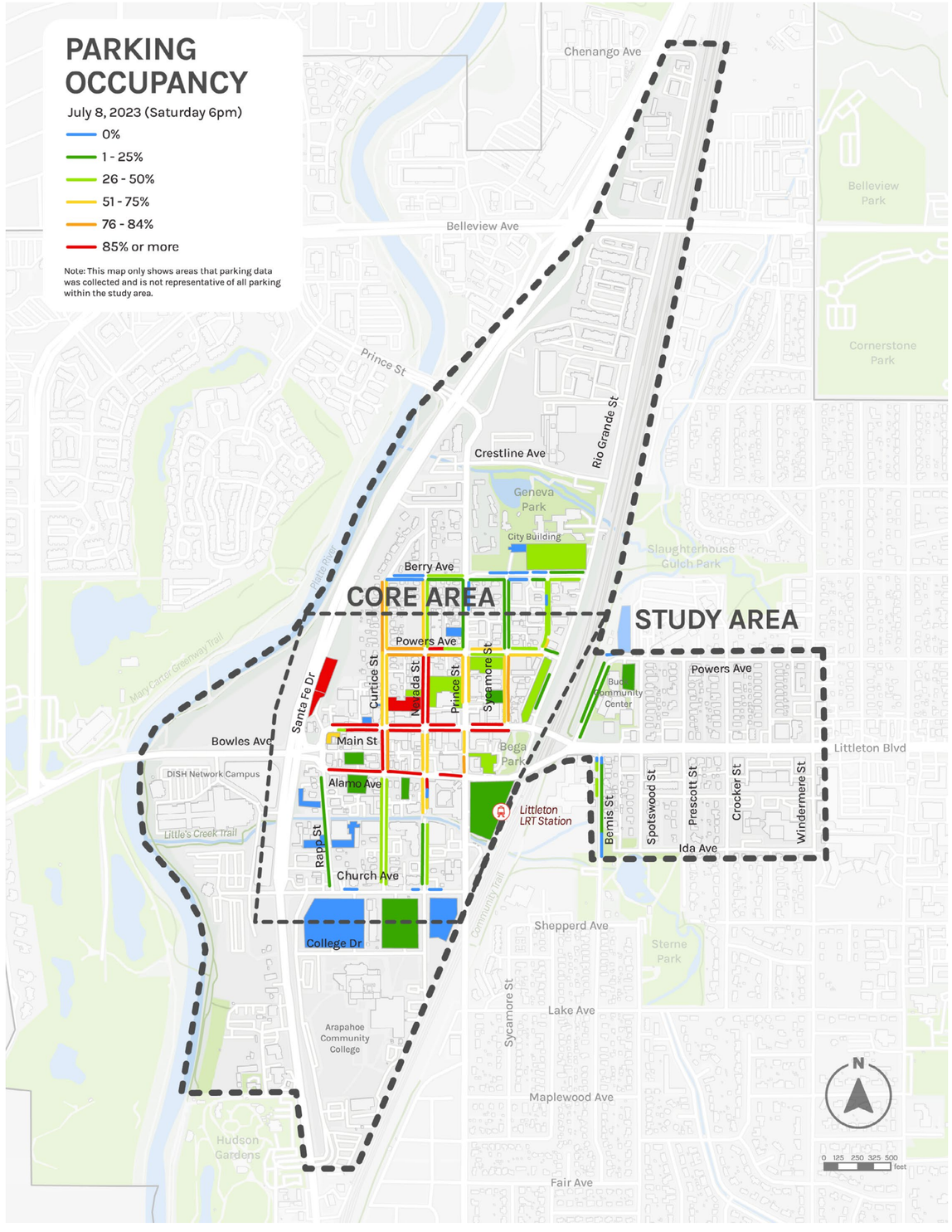
Note: This map only shows areas that parking data was collected and is not representative of all parking within the study area.




PARKING OCCUPANCY
July 13, 2023 (Thursday 12pm)
0%
1 - 25%
26 - 50%
51 - 75%
76 - 84%
85% or more
Note: This map only shows areas that parking data was collected and is not representative of all parking within the study area.
CORE AREA
STUDY AREA
Chenango Ave
Belleview Ave
Belleview Park
Cornerstone Park
Prince St
Rio Grande St
Crestline Ave
Geneva Park
City Building
Berry Ave
Slaughterhouse Gulch Park
Platte River
Powers Ave
Curtice St
Nevada St
Prince St
Sycamore St
Buck Community Center
Littleton Blvd
Bowles Ave
Santa Fe Dr
Main St
Bega Park
DISH Network Campus
Alamo Ave
Littleton LRT Station
Little's Creek Trail
Bemis St
Spotswood St
Prescott St
Crocker St
Windermere St
Ida Ave
Repp St
Church Ave
College Dr
Community Trail
Shepperd Ave
Sterne Park
Lake Ave
Arapahoe Community College
Maplewood Ave
Hudson Gardens
Fair Ave
Mary Carter Greenway Trail
N
0 125 250 325 500
feet


PARKING OCCUPANCY
July 8, 2023 (Saturday 12pm)
0%
1 - 25%
26 - 50%
51 - 75%
76 - 84%
85% or more
Note: This map only shows areas that parking data was collected and is not representative of all parking within the study area.
CORE AREA
STUDY AREA
Chenango Ave
Belleview Ave
Belleview Park
Cornerstone Park
Prince St
Rio Grande St
Crestline Ave
Geneva Park
City Building
Berry Ave
Slaughterhouse Gulch Park
Platte River
Powers Ave
Curtice St
Nevada St
Prince St
Sycamore St
Buck Community Center
Littleton Blvd
Bowles Ave
Santa Fe Dr
Main St
Bega Park
DISH Network Campus
Alamo Ave
Littleton LRT Station
Little's Creek Trail
Bemis St
Spotswood St
Prescott St
Crocker St
Windermere St
Ida Ave
Repp St
Church Ave
College Dr
Community Trail
Shepperd Ave
Sterne Park
Lake Ave
Arapahoe Community College
Maplewood Ave
Hudson Gardens
Fair Ave
Mary Carter Greenway Trail
N
0 125 250 325 500
feet


PARKING OCCUPANCY
July 13, 2023 (Thursday 6pm)
0%
1 - 25%
26 - 50%
51 - 75%
76 - 84%
85% or more
Note: This map only shows areas that parking data was collected and is not representative of all parking within the study area.
CORE AREA
STUDY AREA
Chenango Ave
Belleview Ave
Belleview Park
Cornerstone Park
Prince St
Rio Grande St
Crestline Ave
Geneva Park
City Building
Berry Ave
Slaughterhouse Gulch Park
South Platte River
Powers Ave
Curtice St
Nevada St
Prince St
Sycamore St
Buck Community Center
Littleton Blvd
Santa Fe Dr
Bowles Ave
Main St
Bega Park
DISH Network Campus
Alamo Ave
Littleton LRT Station
Little's Creek Trail
Repp St
Bemis St
Spotswood St
Prascott St
Crocker St
Windermere St
Ida Ave
Church Ave
College Dr
Mary Carter Greenway Trail
Community Trail
Shepperd Ave
Sterne Park
Lake Ave
Arapahoe Community College
Maplewood Ave
Hudson Gardens
Fair Ave
N
0 125 250 325 500
feet


PARKING OCCUPANCY
July 8, 2023 (Saturday 6pm)
0%
1 - 25%
26 - 50%
51 - 75%
76 - 84%
85% or more
Note: This map only shows areas that parking data was collected and is not representative of all parking within the study area.
CORE AREA
STUDY AREA
Chenango Ave
Belleview Ave
Belleview Park
Cornerstone Park
Prince St
Rio Grande St
Crestline Ave
Geneva Park
City Building
Berry Ave
Slaughterhouse Gulch Park
South Platte River
Powers Ave
Curtice St
Nevada St
Prince St
Sycamore St
Buck Community Center
Littleton Blvd
Santa Fe Dr
Bowles Ave
Main St
Bega Park
DISH Network Campus
Alamo Ave
Littleton LRT Station
Little's Creek Trail
Repp St
Bemis St
Spotswood St
Prascott St
Crocker St
Windermere St
Ida Ave
Church Ave
College Dr
Mary Carter Greenway Trail
Community Trail
Shepperd Ave
Sterne Park
Lake Ave
Arapahoe Community College
Maplewood Ave
Hudson Gardens
Fair Ave
N
0 125 250 325 500
feet

SAFETY

CRASHES

The study area includes two segments of DRCOG's High Injury Network – Santa Fe Drive and Bowles Avenue through Main Street to Littleton Boulevard. The High Injury Network (HIN) is comprised of corridors in the region with the highest density of killed and serious injury crashes.

CRASH ANALYSIS METHODOLOGY

Three years of crash data from City of Littleton (January 1, 2020, to December 31, 2022) within the study area was analyzed. Locations of crashes were provided in a geocoded KMZ format. Supplemental data documenting crash details (crash type, contributing factors, etc.) was provided in Microsoft Excel format. Several factors such as crash type, number of injuries, driver actions, and time of day were summarized for the entire study area. A heat map was created to understand "hot spot" locations for crashes. Five intersections were identified as hot spots and analyzed in more detail. The goals of the crash analysis were:

- To understand where crashes are occurring and identify "hot spots." A detailed analysis at five hotpot locations was completed.
- To understand where the injury and fatal crashes are occurring.
- To understand where pedestrian-involved and bicycle-involved crashes are occurring.
- To understand the most common type of crashes, especially injury and fatal crashes.
- To understand contributing factors prior to the crash.

STUDY AREA SNAPSHOT

- 419 crashes were reported within the study area from 2020-2022.
- 54 crashes resulted in injury or fatality. Crash data provided by City of Littleton did not break down injuries by severity level.
- The majority of crashes resulting in injury were rear-end and broadside crashes.
- There was one (1) fatal head-on crash that occurred at Bowles Avenue between South Federal Boulevard and Santa Fe Drive when two eastbound drivers were involved in a sideswipe (same direction) crash and one vehicle pushed the other over the centerline, which resulted in a head-on crash.
- There were five (5) pedestrian-involved crashes, three (3) resulting in injury.
- There were three (3) bicycle-involved crashes, one (1) resulting in injury.
- Crashes are concentrated around intersections. Hot spot locations include:
  - Alamo Avenue & Prince Street
  - Santa Fe Drive & Bowles Avenue
  - Prince Street & Santa Fe Drive
  - Santa Fe Drive & Church Avenue

CRASH TYPES

There are several crash types that are occurring within the study area. The most common crash types are described below, in no particular order:

- **Pedestrian:** A crash type involving a motor vehicle and any person who is not an occupant of a vehicle.
- **Bicycle:** A crash type involving a motor vehicle and a person riding a bicycle or other vehicle propelled by human power applied to pedals.
- **Rear end:** A crash type that involves two vehicles where a vehicle crashes into the vehicle in front of it.
- **Broadside:** A crash type that involves two vehicles when the front end of one vehicle strikes the side of another vehicle at a right angle. These are often caused by left-turning vehicles failing to yield right of way or red light running. These types of crashes are also called angle or T-bone crashes.
- **Head-on:** A crash type that involves two vehicles when the front end of one vehicle strikes the front of another vehicle.
- **Sideswipe (same direction):** A crash type that involves two vehicles moving alongside each other and collide, with at least one of the vehicles being struck on the side.
- **Sideswipe (opposite direction):** A crash type that involves two vehicles approaching opposite directions and intending to continue in opposite directions collide in a sideswiping manner as a result of one or both vehicles crossing the painted or unpainted centerline or divided median of the roadway.
- **Parked Motor Vehicle:** A crash type in which a vehicle in motion collides with a parked motor vehicle whether occupied or not.
- **Fixed Object:** A single vehicle crash where a driver collides with a fixed roadway feature such as a curb or median or runs off the road and hits a roadside feature such as a tree or utility pole.

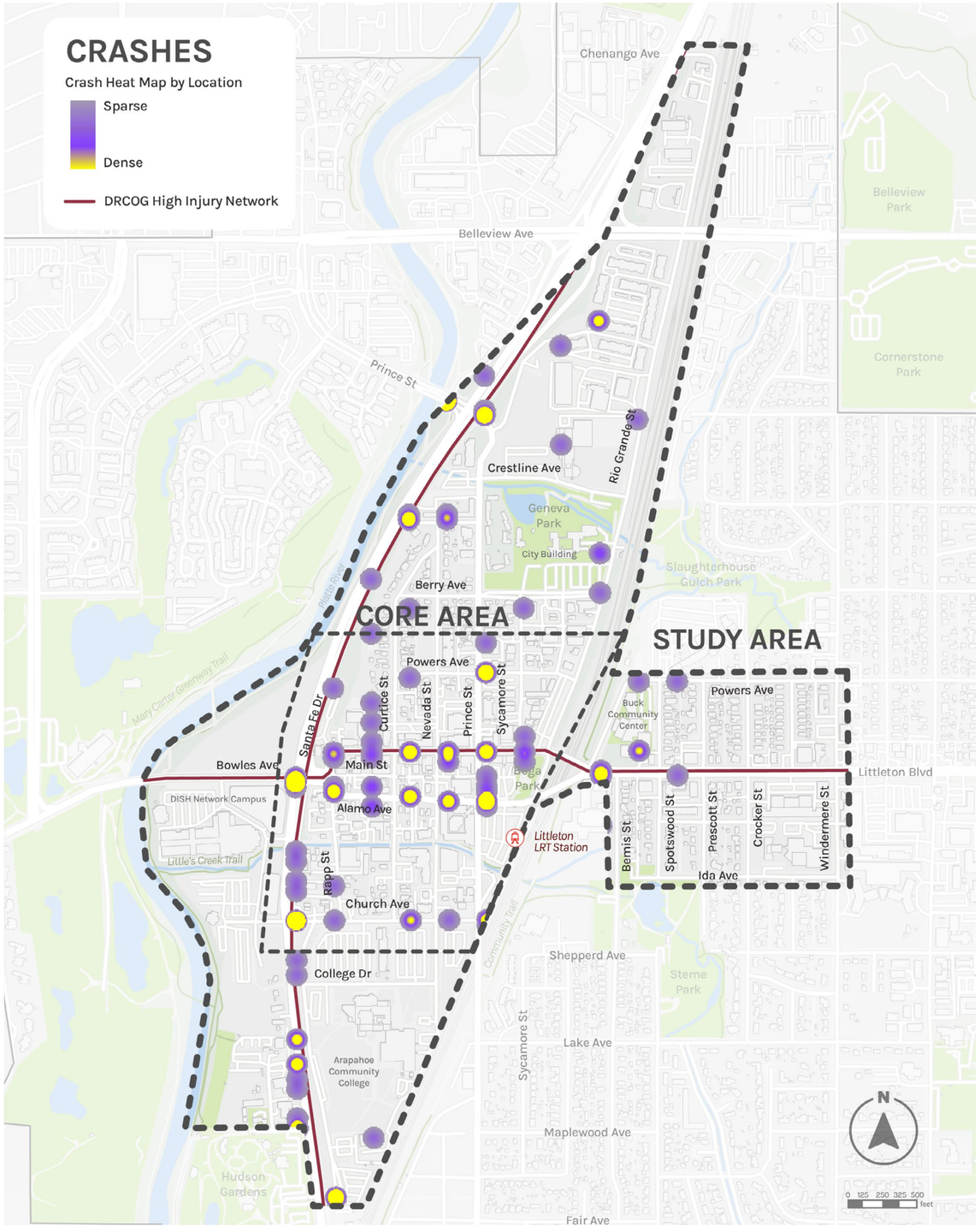


Figure 18 displays the breakdown of crashes by roadway location. Approximately 60% of crashes in the study area occur at intersections or are intersection related with many of the hot spot locations occurring along Santa Fe Drive and in hte core study area. Figure 19 displays the number of all reported crashes in the study area separated by crash type and their respective injury classifications. Note that PDO is an abbreviation for “property damage only.” Figure 20 displays the crash type by the percentage of all crashes and percentage of injury and fatal crashes. Rear end crashes are the predominant type of crash for all crashes and crashes that result in injury. Head-on, pedestrian, fixed object, and bicycle crashes result in a higher percentage of injury crashes.

Figure 18: Summary Area Crashes by Roadway Location

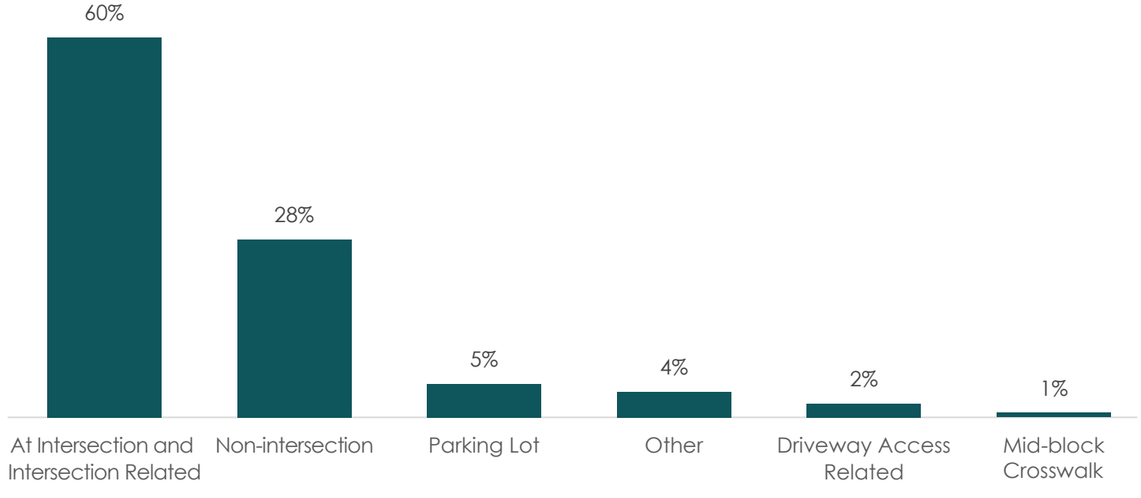


Figure 19: Summary of Study Area Crashes by Severity

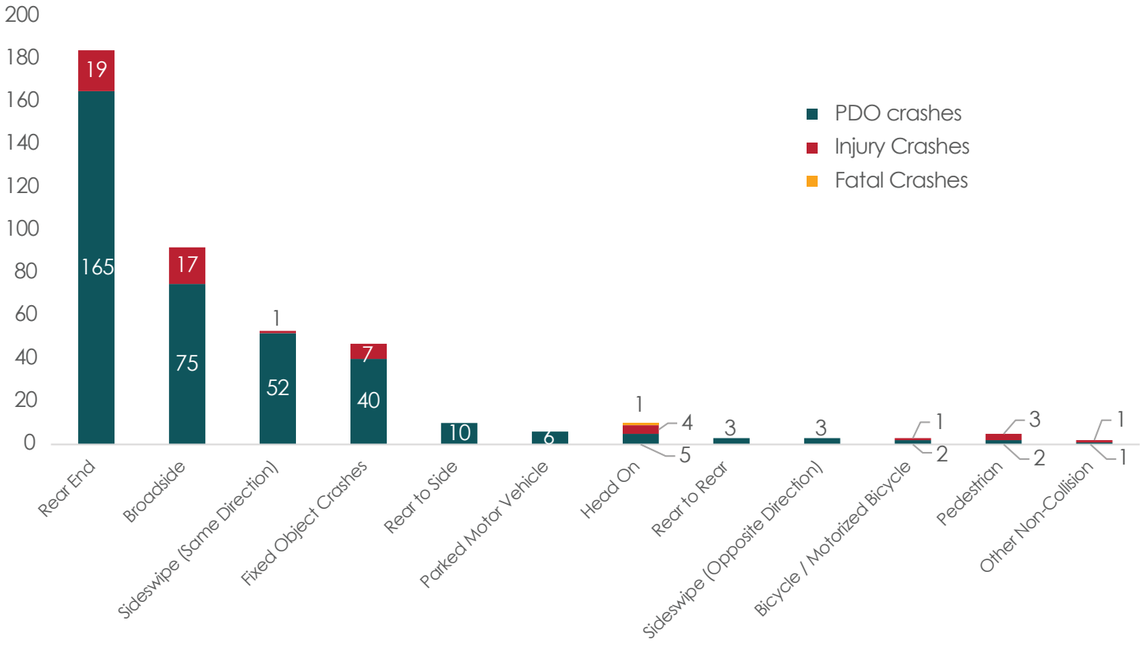


Figure 20: Type of Crashes per Total Crashes in Summary Area

Type of Crash	% of Total Crashes	% of Injury and Fatal Crashes
Rear End	44%	35%
Broadside	22%	9%
Sideswipe (Same Direction)	13%	2%
Fixed Object Crashes	11%	13%
Head On	2%	9%
Bicycle / Motorized Bicycle	1%	2%
Pedestrian	1%	6%

Figure 21 displays the crashes by time of day. The majority of the crashes occur during daytime hours (6AM-9PM) with about a quarter occurring during the weekday peak hour (3PM-6PM). Only about 11% of crashes occur overnight (9PM to 6AM). Figure 22 shows the summary of the vehicle at fault driver action. About half of the crashes in the study period were cited due to careless driving. Figure 23 displays the movement of the vehicle at fault before the crash. About half of the crashes in the study area were caused by vehicles traveling straight, which is in line with the rear end crashes observed in the study area. Making a left turn, changing lanes, and making a right turn were also common movements by at-fault vehicles prior to the crash. These movements typically result in crashes when there are inadequate left-turn phasing at signalized intersections, abrupt stops or lane change movements during high traffic time periods, misjudged gaps in traffic to make a turning movement at an unsignalized location, or a channelized right turn island. The intersection analysis section reviews several intersections with high crash numbers to understand where these trends are occurring.

Figure 21: Study Area Crashes by Time of Day

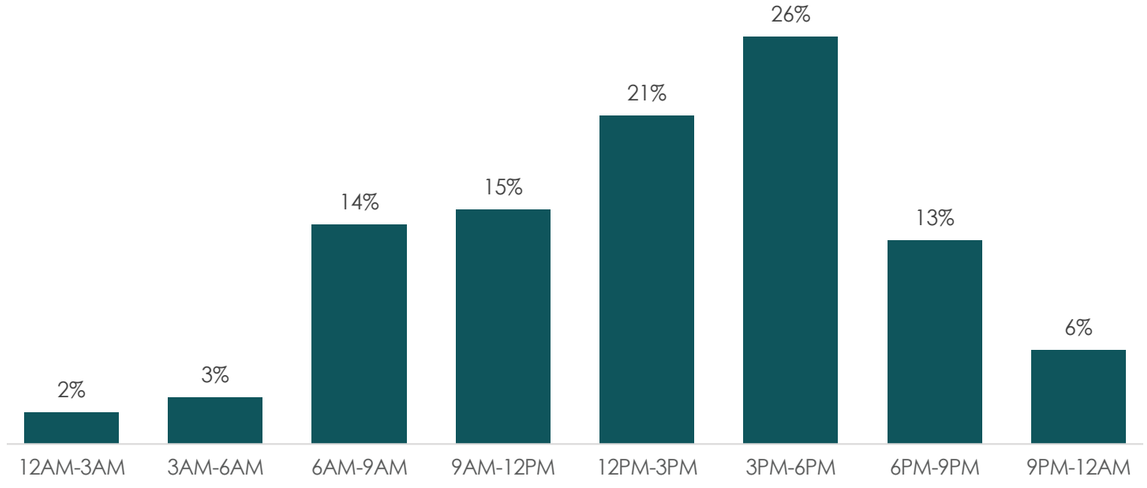


Figure 22: Vehicle at Fault Driver Action

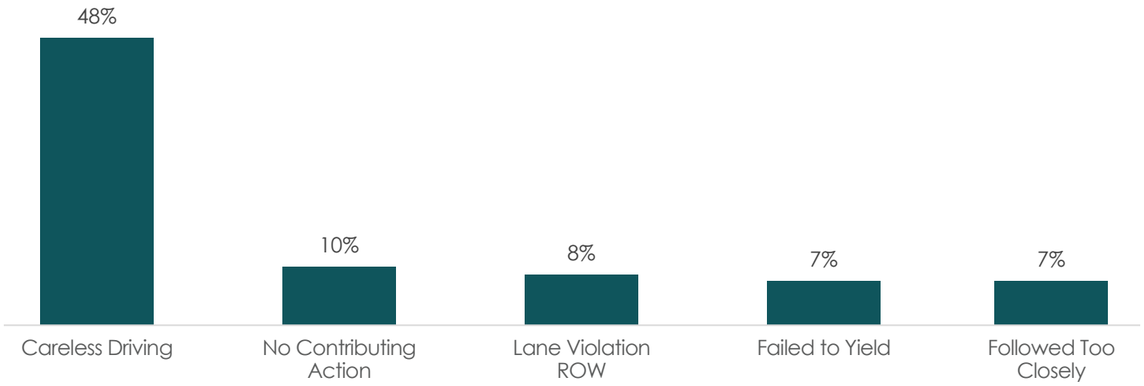
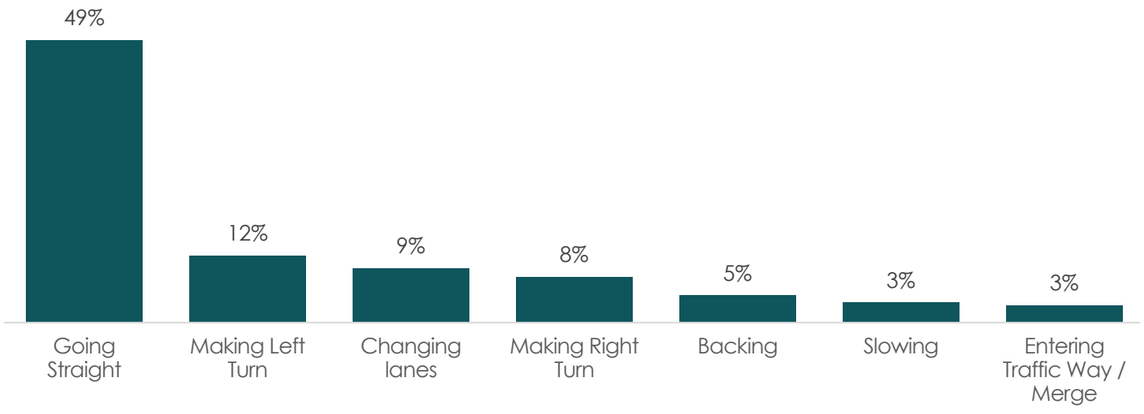


Figure 23: Vehicle at Fault Movement before Crash



HIGH CRASH LOCATIONS

The five intersections with the largest number of crashes in the study area are analyzed in more detail in this section. The detailed intersection summaries only display crashes that were coded as “at intersection” or “intersection related.” Three years of crash data from City of Littleton (January 1, 2020, to December 31, 2022) within the study area was analyzed.

Prince Street & Santa Fe Drive

There were 45 total crashes and 8 injury crashes at Prince Street & Santa Fe Drive. The majority of the crashes were rear end crashes that were split between the northbound and southbound directions. Most of the injury crashes were broadside crashes and occurred because drivers failed to stop at the signal or resulted from drivers making a left turn predominantly in the northbound and southbound directions. There are proposed roadway improvements on Prince Street from Santa Fe Drive to Crestline Avenue that will reconfigure the northbound approach to reduce the two existing left turn lanes down to one left turn lane.

Figure 24: Crash Summary - Prince Street & Santa Fe Drive

		Summary				Direction of At-Fault Vehicle			
		All	Injury	Fatal		NB	SB	EB	WB
	Total Crashes	**45**	**8**	**0**		**25**	**15**	**2**	**1**
Most Harmful Event	Broadside	13	5	0		8	4	1	1
	Rear End	24	1	0		12	9	0	0
	Head on	2	1	0		0	1	0	1
	Sideswipe	3	0	0		2	0	1	0
	Pedestrian	1	1	0		1	0	0	0
	Fixed Object	2	0	0		2	0	0	0
Driver Action	Failed to Stop at Signal	4	1	0		2	2	0	0
	Lane Violation	2	1	0		2	0	0	0
	Disregard Device/Sign/ Markings	2	0	0		2	0	0	0
	Careless Driving	22	4	0		14	6	1	0
	Impeded Traffic	1	0	0		1	0	0	0
	Improper Passing on Left	1	0	0		1	0	0	0
	Improper Turn	1	0	0		0	1	0	0
	No Contributing Action	4	0	0		1	3	0	0
	Other Contributing Action	2	0	0		1	1	0	0
	Too Fast for Conditions	1	0	0		1	0	0	0
Movement	Making Left Turn	5	3	0		1	3	1	0
	Changing Lanes	3	1	0		3	0	0	0
	Going Straight	25	3	0		14	7	2	1
	Slowing	5	1	0		2	2	0	1
	Enter Traffic Way/Merge	2	0	0		1	1	0	0
	Making Right Turn	1	0	0		0	1	0	0
	Stopped in Traffic	4	0	0		3	0	0	0

Note:
-Five crashes do not have driver action data.
-Two crashes do not have travel direction data.

Santa Fe Drive & Bowles Avenue

There were 38 total crashes and 5 injury crashes at Santa Fe Drive & Bowles Avenue. The majority of the total and injury crashes were rear end crashes, with 65% occurring in the southbound direction.

Figure 25: Crash Summary - Santa Fe Drive & Bowles Avenue

		Summary			Direction of At-Fault Vehicle			
		All	Injury	Fatal	NB	SB	EB	WB
	Total Crashes	**38**	**5**	**0**	**9**	**18**	**4**	**3**
Most Harmful Event	Broadside	6	1	0	9	3	0	1
	Rear End	20	4	0	2	11	1	1
	Sideswipe	7	0	0	4	4	2	0
	Pedestrian	1	0	0	1	0	0	0
	Fixed Object	4	0	0	1	1	1	1
Driver Action	Careless Driving	16	2	0	1	8	2	3
	Followed Too Closely	5	0	0	2	5	0	0
	Lane Violation	5	0	0	0	2	1	0
	Failed to Yield ROW	2	0	0	2	1	0	0
	Reckless Driving	1	1	0	1	0	0	0
	Failed to Stop at Signal	1	1	0	1	0	0	0
	Improper Turn	2	0	0	1	0	1	0
	No Contributing Action	3	1	0	1	2	0	0
Movement	Making Left Turn	3	0	0	1	0	1	1
	Making Right Turn	7	0	0	2	4	1	0
	Changing Lanes	6	0	0	3	1	1	1
	Going Straight	15	5	0	3	9	1	1
	Entering Traffic Way/ Merge	2	0	0	0	2	0	0
	Slowing	2	0	0	0	2	0	0

Note:
-Three crashes do not have driver action data.
-Three crashes do not have travel direction data.

Santa Fe Drive & Church Avenue

There were 29 total crashes and 3 injury crashes at Santa Fe Drive & Church Avenue. The majority were rear end crashes with most occurring in the northbound direction. Two of the injury crashes were caused by rear end crashes and one of the injury crashes was caused by a head on crash.

Figure 26: Crash Summary - Santa Fe Drive & Church Avenue

		Summary			Direction of At-Fault Vehicle			
		All	Injury	Fatal	NB	SB	EB	WB
	Total Crashes	**29**	**3**	**0**	**18**	**7**	**0**	**4**
Most Harmful Event	Broadside	4	0	0	1	2	0	1
	Rear End	20	2	0	14	4	0	2
	Head on	2	1	0	1	0	0	1
	Sideswipe	3	0	0	2	1	0	0
Driver Action	Followed Too Closely	3	0	0	2	1	0	0
	Careless Driving	19	2	0	12	3	0	4
	Failed to Stop at Signal	1	1	0	1	0	0	0
	Lane Violation	1	0	0	1	0	0	0
	No Contributing Factor	3	0	0	2	1	0	0
	Other Contributing Factor	1	0	0	0	1	0	0
Movement	Making Left Turn	4	0	0	0	2	0	2
	Entering Traffic Way/ Merge	1	0	0	0	0	0	1
	Going Straight	21	3	0	14	4	1	2
	Making Right Turn	1	0	0	1	0	0	0
	Slowing	1	0	0	1	0	0	0
	Stopped in Traffic	1	0	0	1	0	0	0

Note:
-One crash does not have driver action data.

Alamo Avenue & Prince Street

There were 12 total crashes and 3 injury crashes at Alamo Avenue & Prince Street. The majority of the crashes at the intersection were broadside, with the majority in the southbound and eastbound directions.

Figure 27: Crash Summary - Alamo Avenue & Prince Street

		Summary				4Direction of At-Fault Vehicle		
		All	Injury	Fatal		NB	SB	EB
	Total Crashes	**12**	**3**	**0**		**1**	**4**	**6**
Most Harmful Event	Broadside	7	3	0		1	3	3
	Rear End	2	0	0		0	0	2
	Head on	1	0	0		0	1	0
	Sideswipe	2	0	0		1	0	1
Driver Action	Failed to Stop at Signal	3	1	0		1	1	1
	Careless Driving	2	1	0		0	0	2
	Disregarded Other Device / Sign / Markings	2	0	0		0	1	1
	Failed to Yield ROW	1	0	0		0	1	0
	Followed Too Closely	1	0	0		0	0	1
	No Contributing Action	1	1	0		0	1	0
Movement	Making Left Turn	4	2	0		0	2	2
	Going Straight	7	1	0		1	2	4

Note:
-Two crashes do not have driver action data.
-One crash does not have travel direction data.
-One crash does not have a movement.

NEEDS ASSESSMENT

Safety improvements will be included as part of this project. The following describes a “toolbox” of safety recommendations that may be included as location-specific recommendations to improve safety within the study area.

Traffic Signal or Operational Improvements

- Upgrade left-turn operations.
- Update clearance intervals (yellow change interval + red clearance interval).
- Red light cameras.
- Rebuild existing traffic signal.
- All-way stop signs.
- Install roundabout.

Signage Improvements

- Advance warning signage.
- Install object markers.
- Improved lane configuration signage.
- Reflective signal head backplates.

Turning Movement Improvements

- Restrict right-turn-on-red.
- Restricting left-turns at signalized intersections.
- Improve geometry at channelized right-turn islands.

Education and Enforcement

- Red light cameras.
- Speed enforcement cameras.
- Increased traffic enforcement (speed, distracted driving, etc.).
- Safety campaigns to educate the public.

Access Management

- 3/4 movement.
- Right-in/right-out.

Speed Management

- Install traffic calming devices such as pinch points, chicanes, or traffic circle.
- Speed feedback signs.

Pedestrian and Bicycle Improvements

- High visibility crosswalks.
- Improve/install bicycle lane crossing.
- Install bulb outs (curb extensions).
- Raised pedestrian crossings.
- Protected left turns when push button is pressed.
- Leading pedestrian interval.
- Medians and pedestrian crossing islands.
- Rectangular Rapid Flashing Beacon (RRFB).
- Pedestrian Hybrid Beacon (PHB).

VISIBILITY

Pedestrian lighting is most consistently found within the downtown core and is densely clustered along Main Street and Alamo Avenue. Main Street and Alamo Avenue have relatively uniform spacing and alignment along both sides of the street from Santa Fe Drive to Rio Grande Street. The lighting on Main Street features fixture designs that provide a low quality of light coverage. East of Rio Grande Street, pedestrian lighting continues along Littleton Boulevard east and stops at Windermere Street. Before Main Street's trees were removed, holiday lights were hung along those trees every winter. Main Street and Alamo Avenue have the most consistent urban form, and there is an opportunity to explore special lighting to enhance the pedestrian experience.

Rapp Street, Curtice Street, Nevada Street, Prince Street, and Sycamore Street have fairly consistent pedestrian lighting from Alamo Avenue to Church Avenue. North of Main Street pedestrian lighting is less consistent with more frequent spacing along Curtice Street and Nevada Street while Prince Street and Sycamore Street offer fewer pedestrian lights. Pedestrian lights line Rio Grande Street and offer good visibility and connection to the RTD Light Rail Station. Pedestrian lighting can be found within the Little's Creek corridor and along the trail. Little's Creek trail is sunken from surrounding grade and supplemental lighting could be considered for safety as well as placemaking. Geneva Park and Bega Park have pedestrian lighting within, however vegetation often obstructs sight lines and limits effectiveness of the lighting.

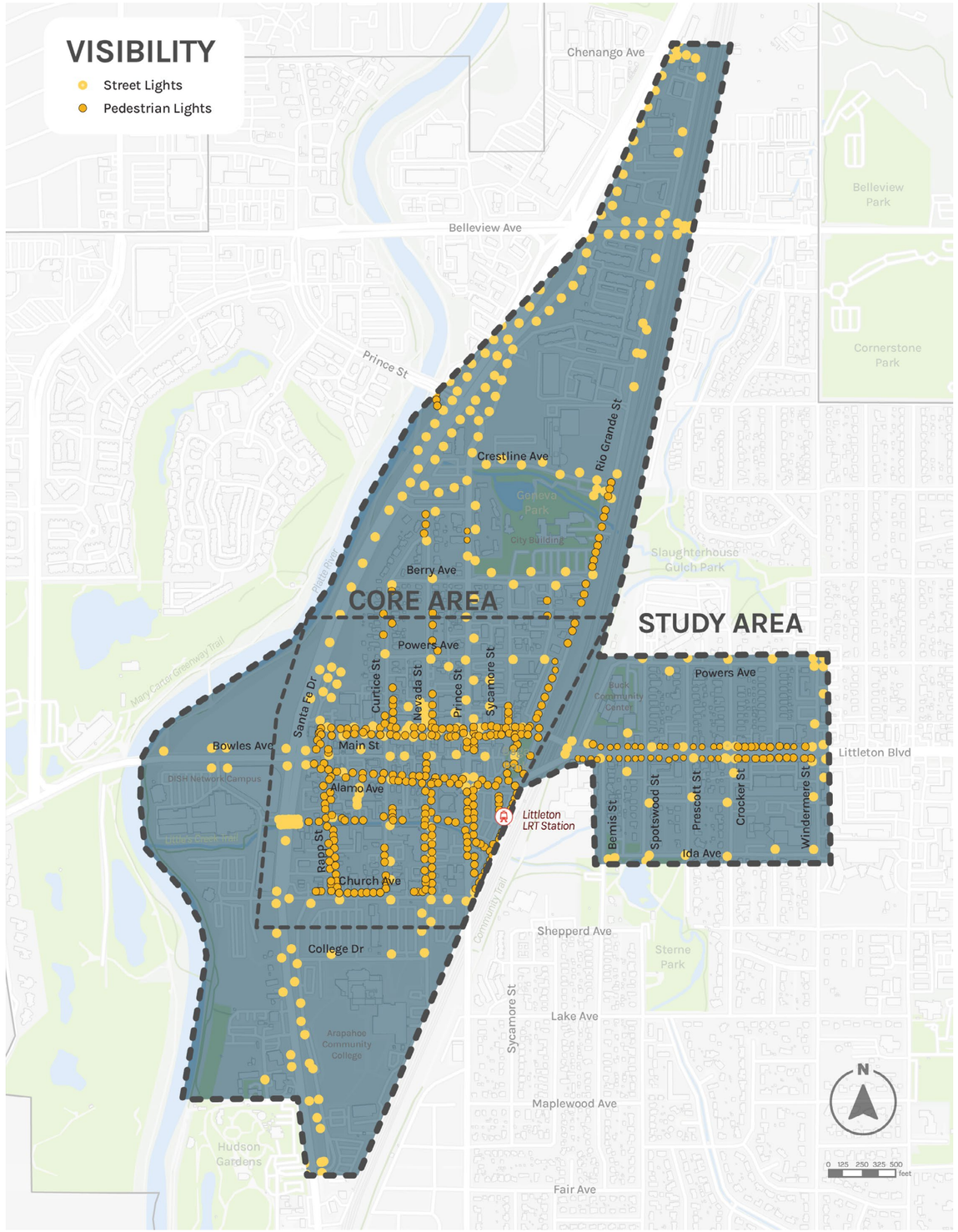
Architectural lighting can be found along Main Street and Alamo Street illuminating signage and in some cases building details. As is the case with the Town Hall Arts Center. Gateway moments at Santa Fe Drive and Main Street, Littleton Boulevard and Rio Grande Street lack significant or special lighting that would reinforce a threshold and transition when entering downtown. Street lights are found throughout the study area and at a higher frequency on Santa Fe Drive and Littleton Boulevard.

NEEDS ASSESSMENT

- Consider replacing existing lights on Main Street with better coverage at ground level.
- Extend pedestrian lighting north and south from Main Street and Alamo Street to Church Avenue and Berry Avenue.
- Explore additional creative lighting opportunities along Main Street.
- Mark gateways into downtown on all sides with enhanced and special lighting to mark arrival.
- Support architectural lighting strategies that enhance pedestrian experience along Main Street and Alamo Street.
- Enhance lighting in Bega Park and Geneva Park.
- Consider creative supplemental lighting within Little's Creek corridor and along trail for both safety and placemaking.
- Consider making all of the pedestrian lights consistent style and explore implementing LED bulbs.

Pedestrian lights along Main Street

Main Street with holiday lights on trees before the removals



ENVIRONMENT

The majority of tree canopy within the study area is densely clustered within parks. Main Street once had a robust canopy, but many of the trees were recently identified as having Thryonectria Canker and were ultimately removed. Sixty four Honey Locust trees were removed and while a few Pear and Oak trees remain, this removal has created a lack of shade and an uncomfortable pedestrian condition. The remaining trees along Main Street are planted in small tree grates with many located in the middle of the sidewalk presenting challenges for accessibility. Similar to Main Street, Alamo Avenue lacks consistency in canopy within the downtown core. Prince Street and other north/south streets offer portions of block faces with mature street trees, however their location is often less then desirable due to a constrained section from property line to curb.

Within the downtown core there are several planter pots that are hand-watered with seasonal annual plantings. There is a lack of green infrastructure facilities along the street with stormwater being diverted into below curb storm drain structures. In terms of additional natural systems, Little's Creek flows from the South Platte River to Sterne Park and is below the grade of the adjacent parcels. Vegetation within the open channel is limited to grass and a few sparse trees and shrubs. The channel is relatively exposed depending on time of day. A multi use trail runs alongside the creek within the channel offering a unique experience, different from that found at street level.

Outside of the downtown core, Santa Fe Drive and Rio Grande Street have a dense tree canopy. Outside of the medians, these trees lack consistency in spacing and placement and are substantially setback from the street. Tree canopy becomes more consistent as one moves away from the downtown core toward north and south ends of the study area.

NEEDS ASSESSMENT

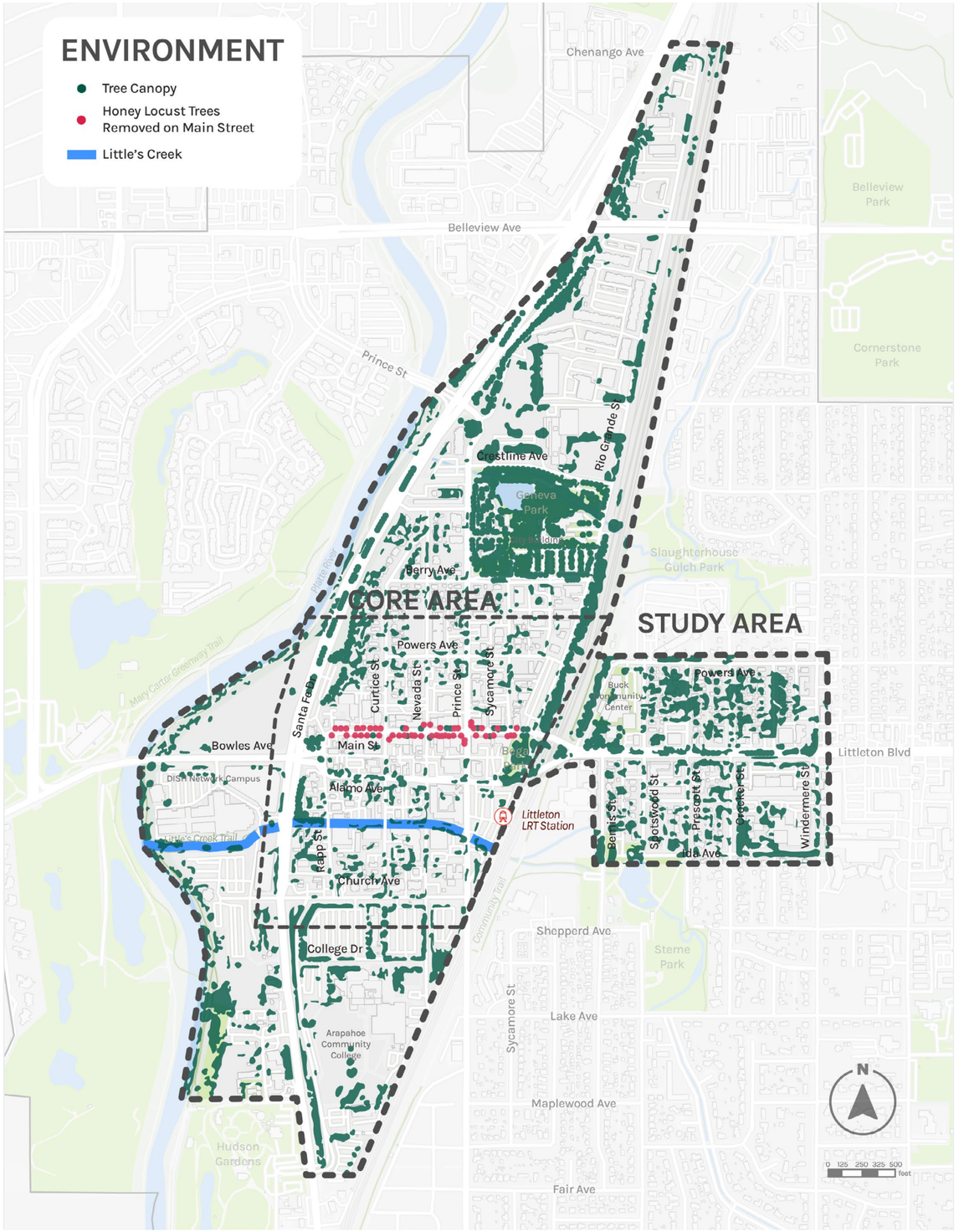
- Increase the amount of street trees and shade along Main Street and Alamo Avenue to combat heat island effect.
- Add diversity of tree species to ward off disease and pests as well as improved infrastructure to support health and vitality of urban canopy.
- Create a clear amenity zone away from the curb for new street trees and plantings, at a minimum of 8' wide.
- Consider bump outs and pinch points along Main Street, Alamo Avenue, and elsewhere to incorporate plantings where the street width is constrained.
- Implement green infrastructure to address stormwater concerns.
- Enhance Little's Creek channel with understory and trees and explore opportunity to utilize the channel for stormwater management.

One of the remaining trees to be sculpted on Main Street

Little's Creek Channel and Trail

Bega Park

Planter Pots on Main Street



VIBRANT DESTINATIONS

Downtown Littleton is home to many merchants, restaurants, and businesses, as the downtown core is primarily comprised of commercial land uses. These destinations are complemented by larger civic and institutional elements such as churches, Arapahoe Community College, and the Town Hall Arts Center. There is a lack of green space, with Geneva Park in the northern portion of the study area and Bega Park within the downtown core.

Main Street, Prince Street, and Alamo Avenue are downtown's primary retail and commercial streets and see the most significant visitation by pedestrians, bicyclists, and vehicles. Along Main Street, the density of structures and predictable urban form along these blocks creates a "town center" feel. The pedestrian experience is enhanced through the consistent pedestrian lighting, awnings, restaurant patios and businesses. With the loss of trees along Main Street, there is an opportunity to implement vertical spanning elements, like shade sails or festival lighting, over the street to frame the activity on the street below. Alamo Avenue presents many of the same conditions, yet lacks the continuity in form and the ground level activation that animates and energizes Main Street. Both streets have narrow sidewalk and amenity zone widths which pose accessibility challenges while trying to accommodate for thoroughfare travel and activation, such as patios for restaurants. Across Rio Grande Street on Littleton Boulevard, retail and commercial activity has grown in recent years. Improving the link between historic downtown and this blossoming commercial area is critical.

The concentration of businesses dissipates when moving away from the downtown core. The transition to residential often feels pleasant, however there is a lack of threshold experiences, moments when you can clearly mark an entrance into a different experience, and gateways as visitors enter the downtown core on all sides.

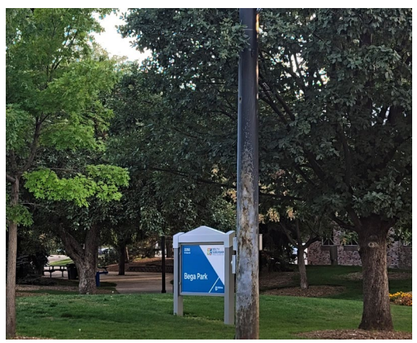
Street furnishings, such as benches, recycling and waste receptacles, and bike parking, are missing throughout the downtown core and broader reach of the study area. In many cases, while space is limited, it appeared that businesses had placed loose furnishings that were not anchored or set within a patio to address the lack of street furniture. Street furniture and amenities are critical to creating vibrant public places that people want to visit, linger, and enjoy.

While there are wayfinding elements within the downtown core to guide visitors, these signs have a variety of different characters and some negatively impact sight triangles for both pedestrians and vehicles. The existing signage does not create a celebratory sense of arrival when visitors reach downtown. Existing wayfinding signage is custom and updates are expensive and require extended time for fabrication.

NEEDS ASSESSMENT

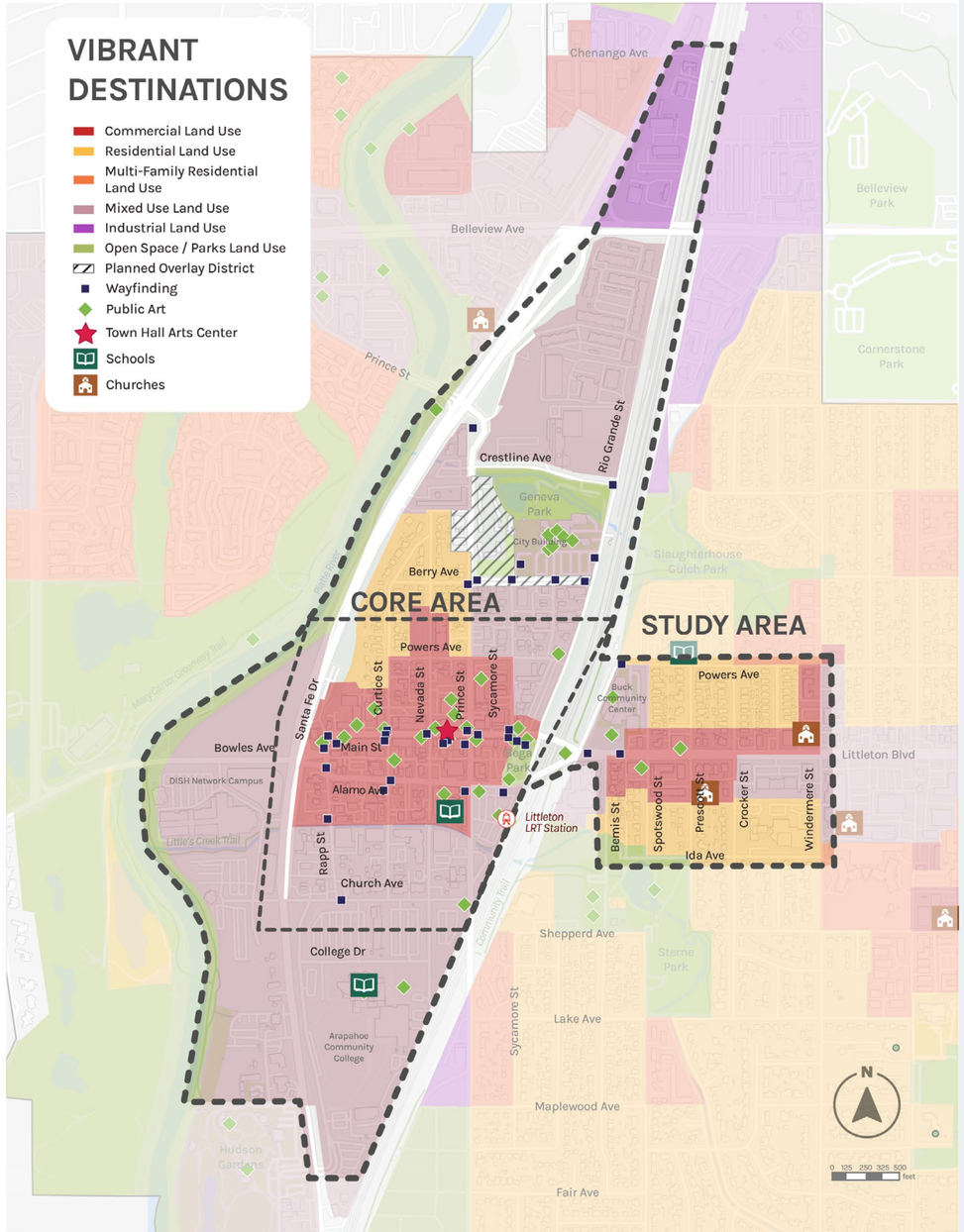
- Improve approach for outdoor patios on street that provide comfortable experience for pedestrians and patrons.
- Provide a cohesive palette of traditional and non-traditional street furnishings to activate the street.
- Create a more consistent wayfinding design language to guide visitors to major downtown destinations.
- Implement wayfinding signage that utilizes new technology that allows for rapid updates.
- Enhance vehicular- and pedestrian-scale gateway elements along edges of downtown to create sense of arrival.
- Bolster Main Street and Alamo Avenue with parklets and buffered patio spaces to support local businesses.
- Consider enhancing Main Street with more public art elements, overhead canopy, and lighting elements that span the width of the road.
- Explore utilizing alleyways for additional public space and public art opportunities.
- Create more comfortable gathering spaces that are family friendly.
- Explore consistent approach and guidelines for outdoor patios located below curb.

Businesses on Main Street



Bega Park

Wayfinding on Main Street



HISTORIC CHARACTER

The City of Littleton traces its roots back to the Pike's Peak Gold Rush, which brought a deluge of gold-seekers, merchants, and farmers to the greater Denver area. The city was founded by Richard Sullivan Little and Littleton was officially incorporated in 1890.

Today, many relics of Littleton's early days remain. There are four national historic landmarks and seventeen local landmarks within the study area. Many of these are clustered within the downtown core including the Denver & Rio Grande Railroad Depot and the Columbine Mill. Additionally, there is both a national historic landmark district and a local historic landmark district located within the downtown core.

Structures throughout the study area represent some of the critical periods in Littleton's history through architecture. Later 19th and early 20th century brick storefronts along main offer glimpse into Littleton's past as a rail town. The Italian revivalist Littleton Town Hall Arts center speaks to Littleton's growing appeal and attraction as a destination in the 1920's while mid-century modern structures that line Littleton Boulevard sprinkle into the historic downtown and blend well with some of the earlier turn-of-the century structures.

Embracing Littleton's rich heritage and character is critical to invoke a sense of place for the community and visitors to the town alike. Equally important will be supporting creative and new uses of structures that inject new life into downtown today and tomorrow while building on the rich framework of the past.

NEEDS ASSESSMENT

- Celebrate and connect to historic places and landmarks with enhanced interpretive signage.
- Enhance wayfinding addressing historic architecture and elements in the downtown core.
- Consider opportunities to use public art to celebrate and build on historic character.
- Engage with local business to ease the path towards adaptive reuse of structures in future development.
- Take cues from Littleton's architectural history and heritage within public spaces and the streetscape.
- Incorporate brick, stone, and other natural materials utilized in Littleton's historic architecture in public spaces and streetscape.

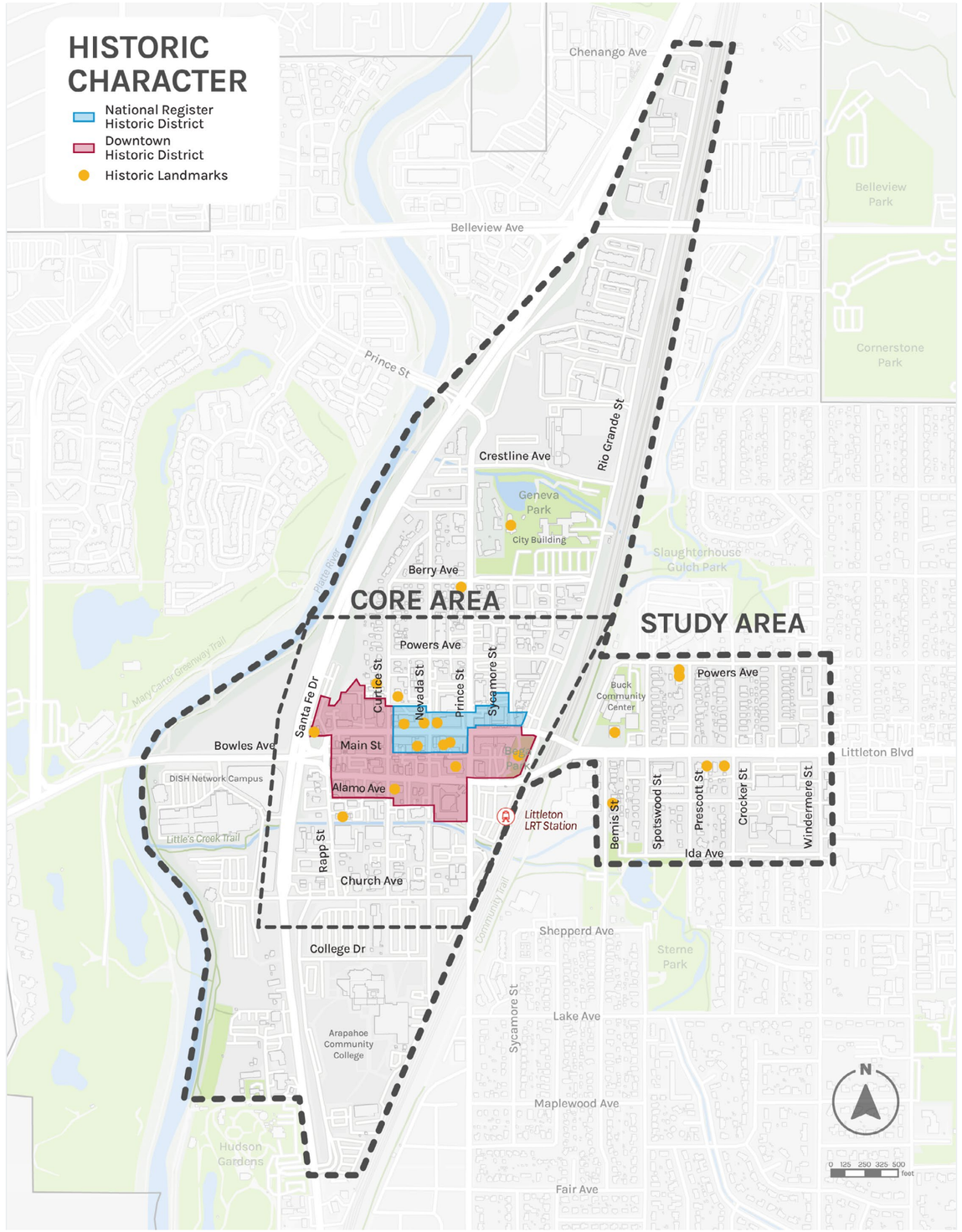
Historic district designation

Historic Places Plaque

Downtown Littleton in 1890

Main Street in the early 1900s

Littleton Town Hall Arts Center Today



UTILITY ASSESSMENT

The following summary of existing utility conditions is intended to be a high-level overview of the major utility facilities within the study area and some potential issues to consider during both the conceptual and detailed design phases of each project. The information contained in this section has been prepared through a desktop review of the information obtained through various sources, including utility maps, from City of Littleton GIS data, and mapping and utility owner data provided by Colorado 811. This study focuses primarily on major facilities that are likely to present major cost or schedule risks to a project if impacted by proposed work. Additional utility investigation is recommended as part of both the procurement process and design phases, including utility locates, test holes, and structure measure-downs once more detailed concepts are established.

DRY UTILITIES

CenturyLink (Lumen)

Lumen's major facilities in the downtown area consist of multiple 12-way duct systems on the south side of Alamo Avenue beginning at the eastern limits of the project area transitioning down to a 6 & 4-way duct system crossing Santa Fe Drive. Each of these major systems feeds various smaller copper and fiber optic facilities both overhead and underground throughout the project area.

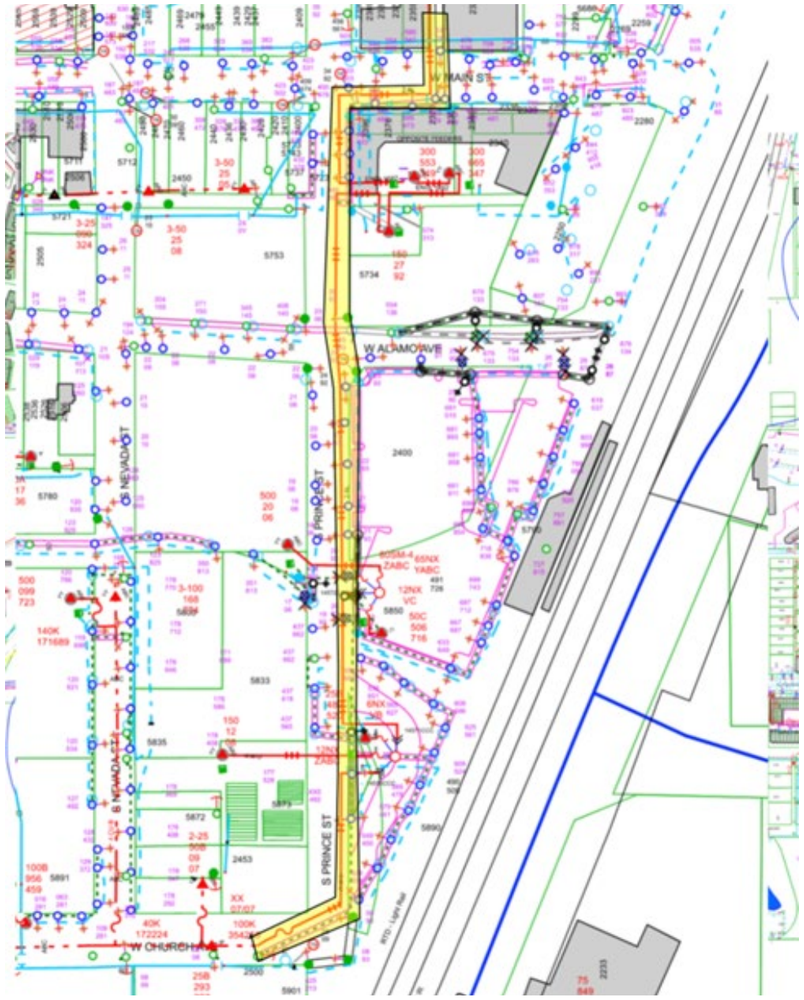
XCEL Energy (Electric)

The majority of Xcel's electric facilities are located overhead in the alley, however there is a buried 3-phase 1/0 Aluminum electric line in Prince Street as well as localized sections of buried electric on Main Street, Curtice Street, and Powers Avenue.

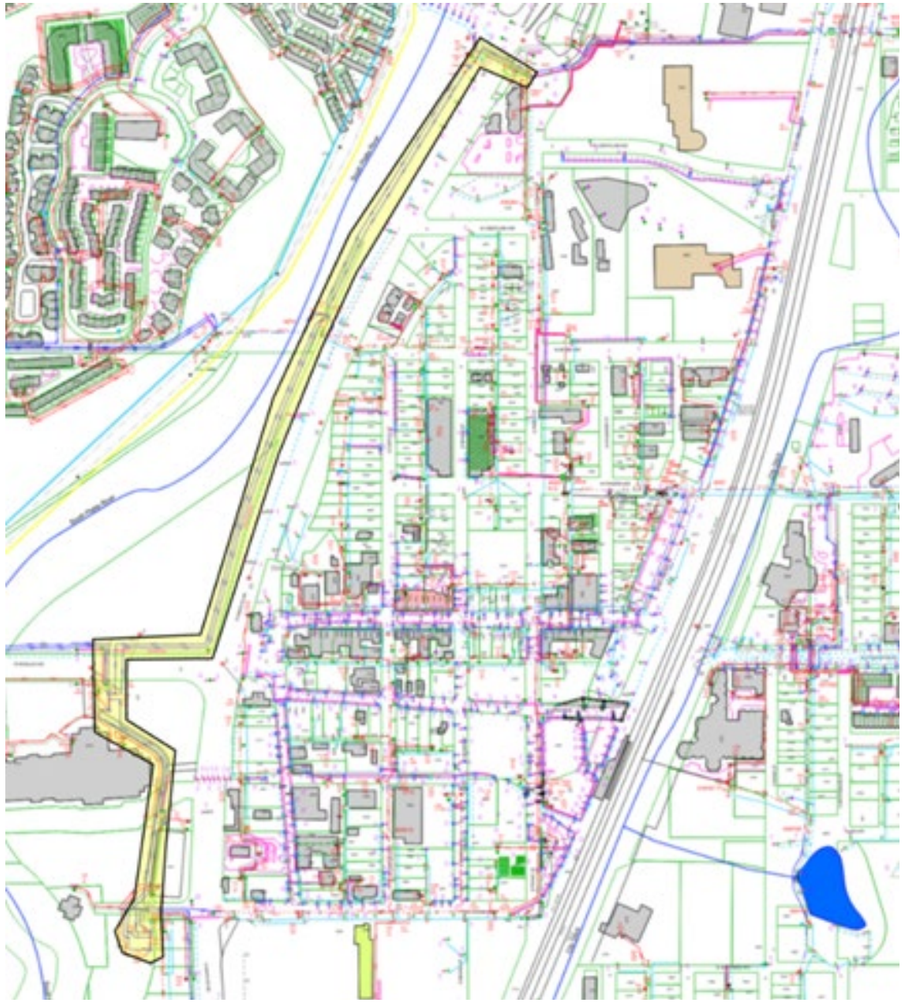
Mainline Primary power also runs along Santa Fe Drive on the west edge of the project limits.

The majority of the remaining power feeding the area is overhead, found primarily in alleys. Underground streetlight feeds are also present in the sidewalk on most streets.

XCEL ELECTRIC MAP DETAILING MAINLINE PRIMARY POWER LINE



XCEL ELECTRIC MAP DETAILING MAINLINE PRIMARY POWER LINE

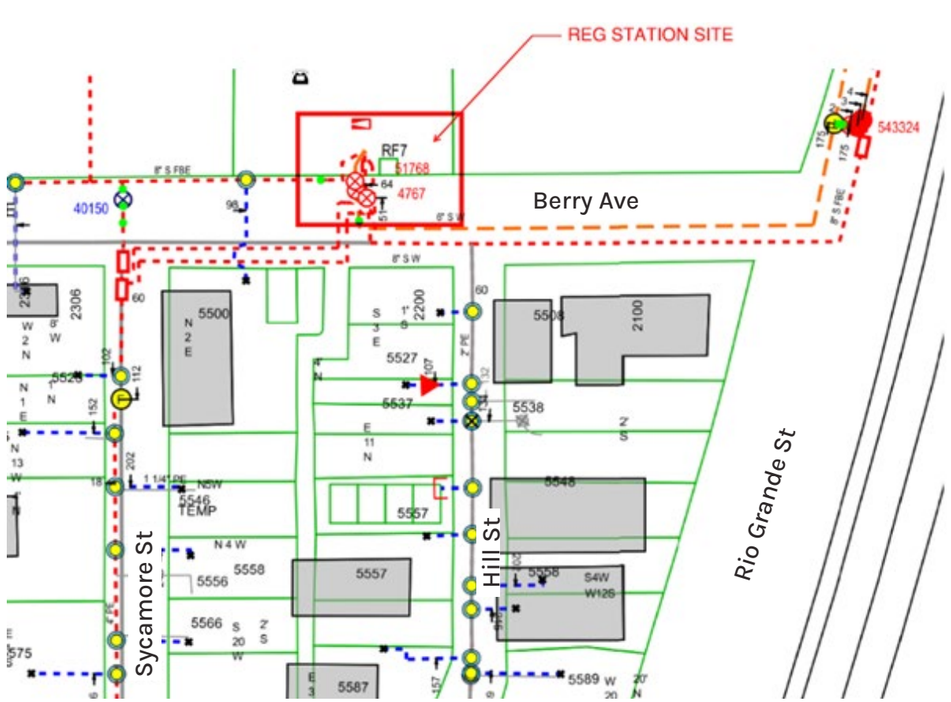


<u>XCEL Energy (Gas)</u>

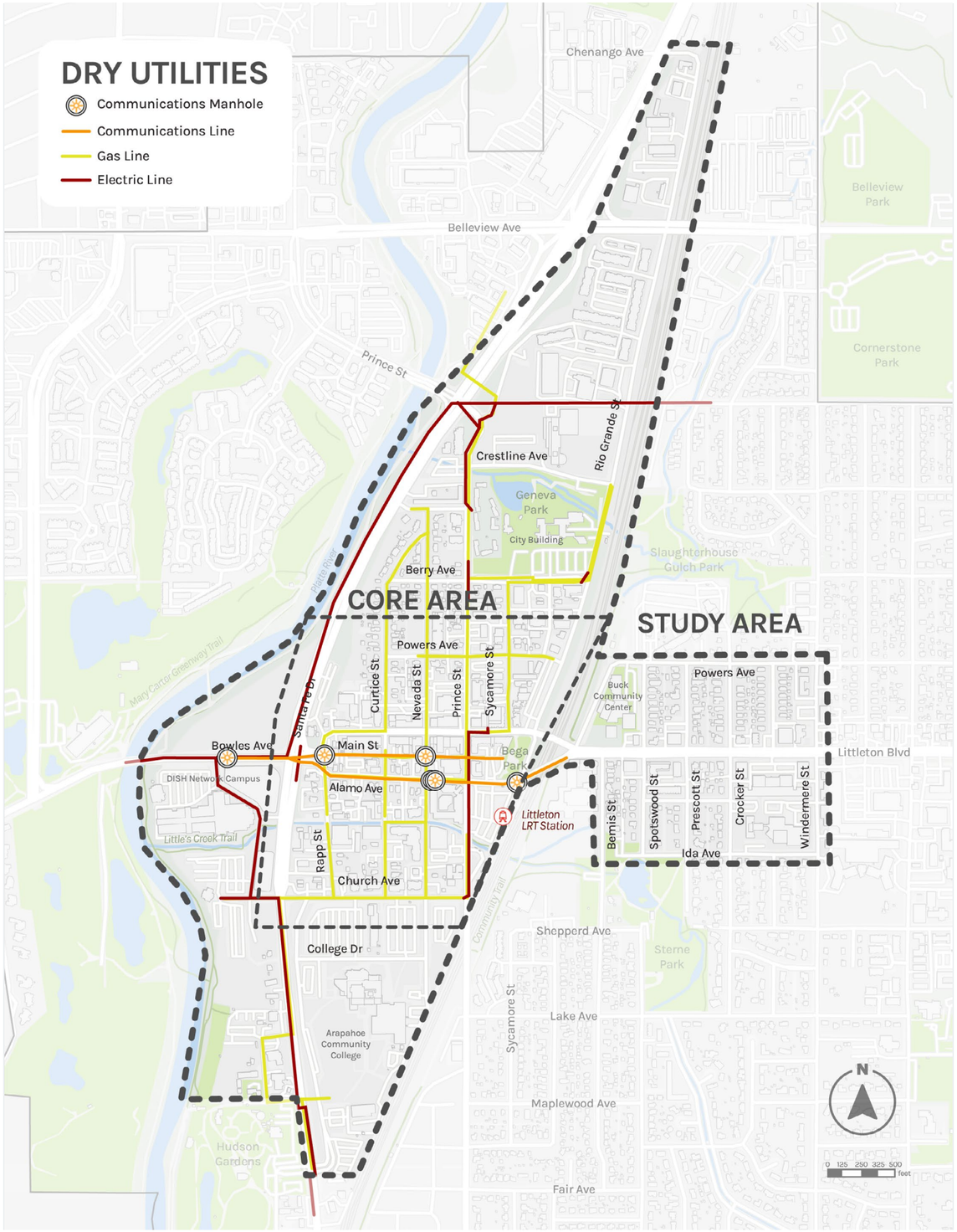
There are low pressure gas lines running in the roadway along many of the streets within the project study area. A significant number of these gas lines are wrapped steel mains, which generally require more effort to relocate than High Density Polyethylene (HDPE) mains.

In addition to the low-pressure lines, the entire downtown area is fed from a 6” intermediate pressure steel gas main on the north side of Rio Grande Street and Berry Avenue and running through a regulator station east of the intersection of Berry Avenue and Sycamore Street. An 8” steel gas main also exists along Berry Avenue between Rio Grande Street and Prince Street.

Same XCEL Gas Reg Station viewed from Google Street view



Xcel Gas map showing Reg Station Site Location



Comcast Fiber

Comcast provided maps showing a large fiber optic conduit or duct bank running along the RTD ROW on the East limits of the project site.

Other Facilities

A wide range of other communications facilities are known to exist within the project area and are identified below. Mapping has not been made available for these facilities and it is recommended that additional investigations be completed prior to finalizing any design to mitigate potential utility impacts where possible.

- CDOT Fiber
- City of Littleton Fiber
- MCI
- ZAYO

WET UTILITIES

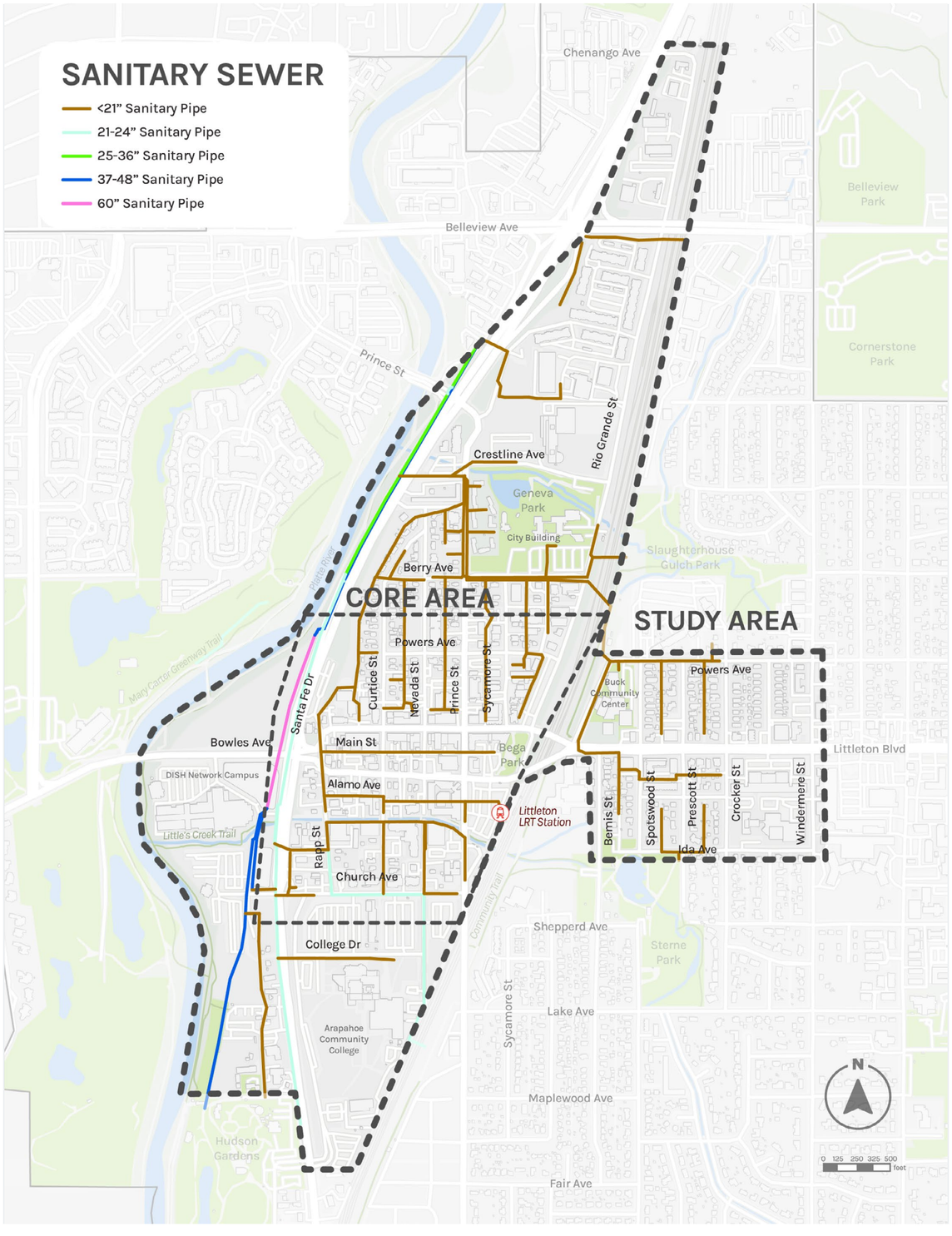
City of Littleton – Sanitary Sewer

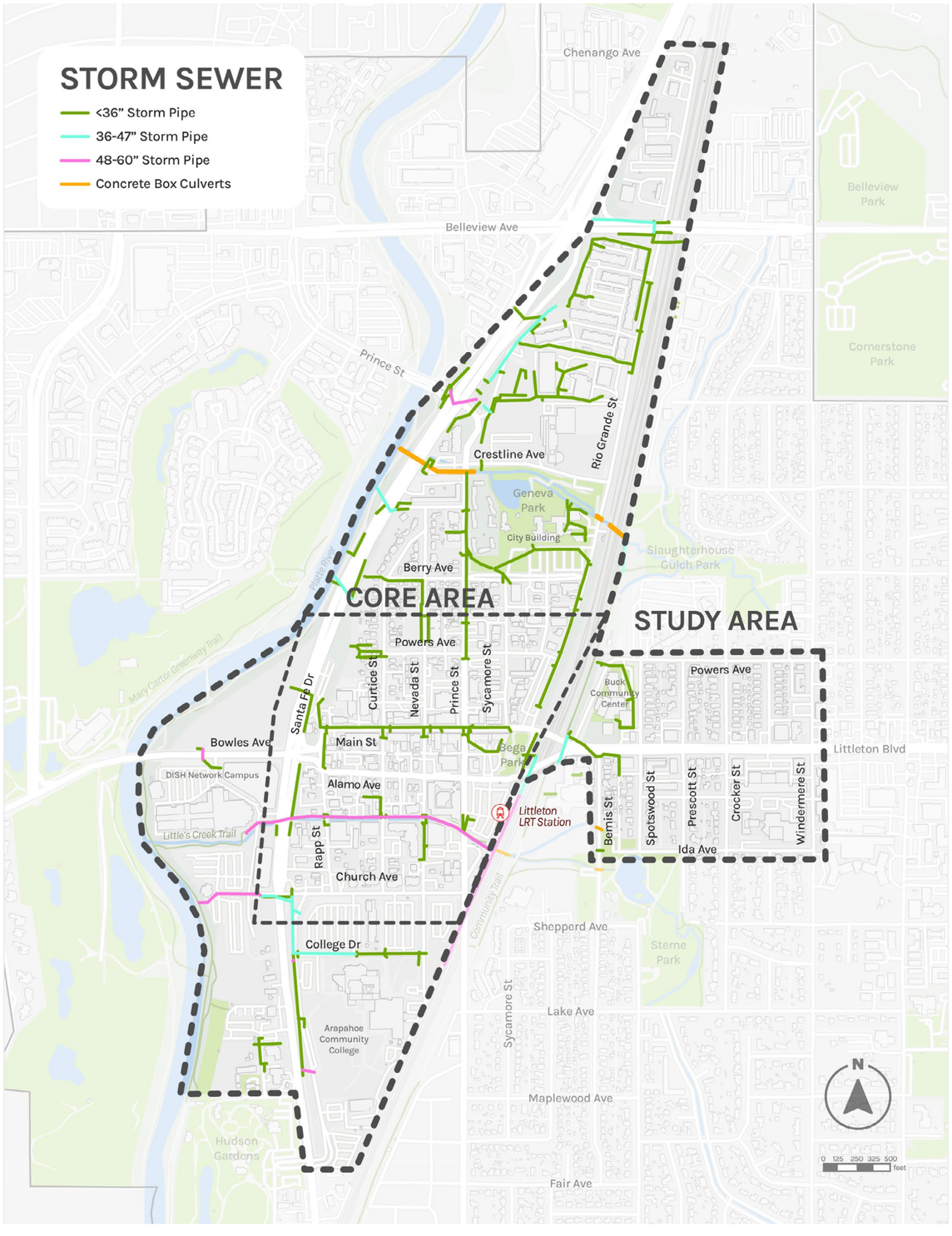
The majority of the sanitary sewer mains in the project areas fall within alleyways and consist primarily of clay or PVC pipe ranging from 8” to 24” in diameter. Several larger Sewer mains exist in the study area, primarily along the west side of Santa Fe Drive. These mains vary in size from 24” to 60” in diameter and are shown in the **City of Littleton – Sanitary Sewer Map** on the next page. It is anticipated that minor manhole adjustments will be necessary, however, improvements proposed around these facilities should carefully consider any potential impacts and look for design solutions to avoid major relocations.

City of Littleton – Storm Sewer

The majority of the Storm Sewer in the project area consists of CMP, HDPE, PVC, or RCP pipe ranging from 8” to 48” in diameter. Additionally, there are 240 Storm Inlets in the project area that will need to be evaluated on a location-by-location basis for capacity and/or modification where roadway or sidewalk improvements are proposed. In addition to the base network of drainage facilities in the downtown area, several major drainageways in the project area have the potential to limit options for proposed improvements due to the size and cost associated with modifications to these facilities. Some notable facilities include a 5’x10’ Concrete Box Culvert (CBC) crossing Santa Fe Drive and Prince Street as well as a 10’x12’ CBC crossing the railroad to the east that convey flows from Slaughterhouse Gulch through across the north end of downtown. In addition, there is a 10’x10’ box culvert crossing Santa Fe Drive through the Prince Street intersection. These facilities are shown in the **City of Littleton – Storm Sewer Map** on the next page.

Comcast map showing existing fiber optic conduit


SANITARY SEWER
<21” Sanitary Pipe
21-24” Sanitary Pipe
25-36” Sanitary Pipe
37-48” Sanitary Pipe
60” Sanitary Pipe
CORE AREA
STUDY AREA
Chenango Ave
Belleview Ave
Belleview Park
Cornerstone Park
Prince St
Rio Grande St
Crestline Ave
Geneva Park
City Building
Berry Ave
Slaughterhouse Gulch Park
Powers Ave
Curtice St
Nevada St
Prince St
Sycamore St
Buck Community Center
Littleton Blvd
Bowles Ave
Santa Fe Dr
Main St
Bega Park
DISH Network Campus
Alamo Ave
Littleton LRT Station
Little's Creek Trail
Bemis St
Spotswood St
Prescott St
Crocker St
Windermere St
Ida Ave
Rapp St
Church Ave
College Dr
Shepperd Ave
Sterne Park
Lake Ave
Arapahoe Community College
Maplewood Ave
Hudson Gardens
Fair Ave
Mary Carter Greenway Trail
Platte River
Community Trail
N
0 125 250 325 500
feet


STORM SEWER
<36” Storm Pipe
36-47” Storm Pipe
48-60” Storm Pipe
Concrete Box Culverts
CORE AREA
STUDY AREA
Chenango Ave
Belleview Ave
Belleview Park
Cornerstone Park
Prince St
Rio Grande St
Crestline Ave
Geneva Park
City Building
Berry Ave
Slaughterhouse Gulch Park
Powers Ave
Curtice St
Nevada St
Prince St
Sycamore St
Buck Community Center
Littleton Blvd
Bowles Ave
Santa Fe Dr
Main St
Bega Park
DISH Network Campus
Alamo Ave
Littleton LRT Station
Little's Creek Trail
Bemis St
Spotswood St
Prescott St
Crocker St
Windermere St
Ida Ave
Rapp St
Church Ave
College Dr
Shepperd Ave
Sterne Park
Lake Ave
Arapahoe Community College
Maplewood Ave
Hudson Gardens
Fair Ave
Mary Carter Greenway Trail
Platte River
Community Trail
N
0 125 250 325 500
feet

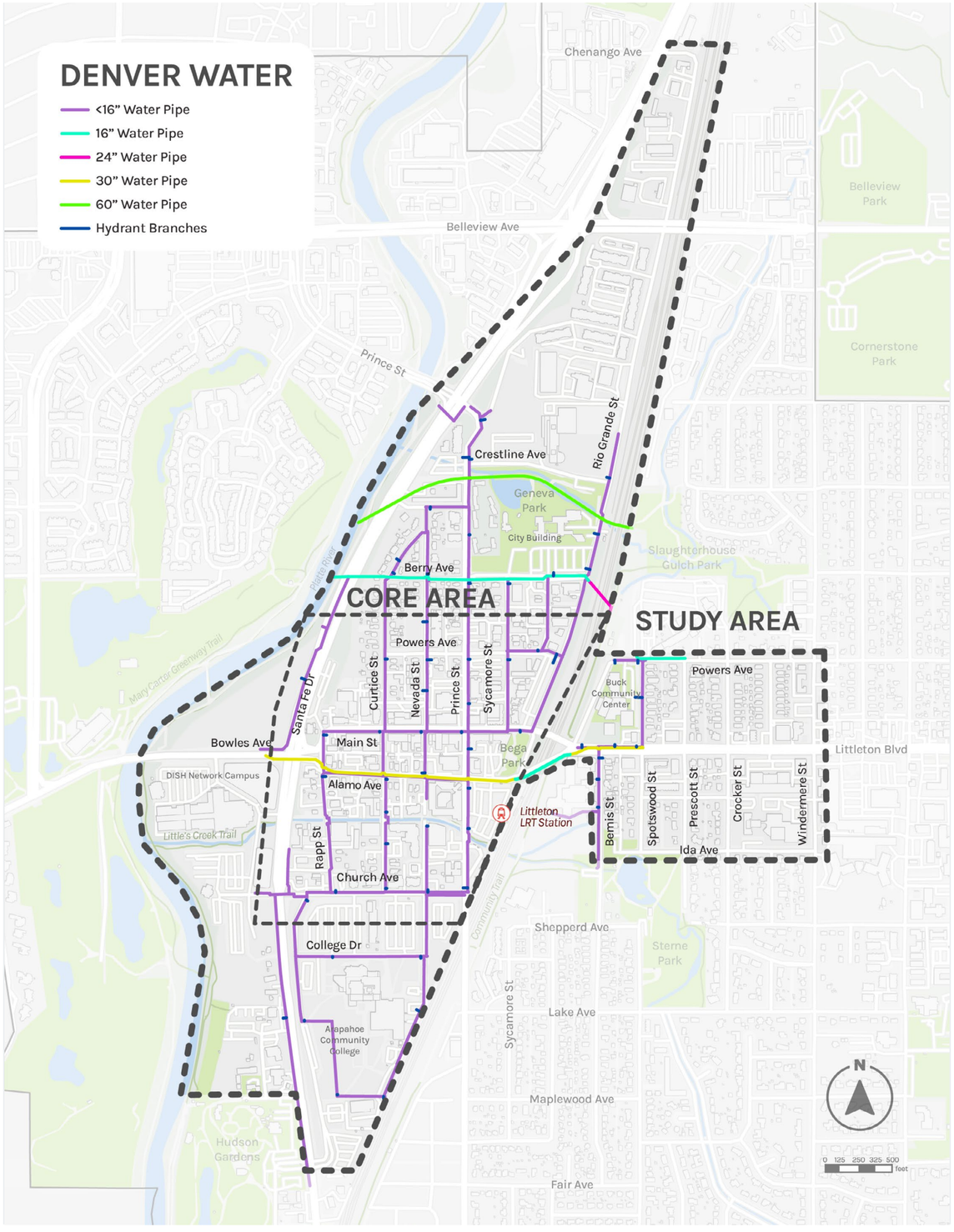
Denver Water

The majority of the distribution waterlines located in the study area consist of ductile iron, cast iron, or PVC pipes ranging from 6-12” in diameter. The distribution network also includes approximately 200 valves, 60 hydrants, and 350+ water services. In addition to the distribution water mains across the study area, there are three major transmission mains in the downtown area. Along the north side of the downtown, a 60” RCCP (Reinforced Concrete Cylinder Pipe) conduit, installed in 1930, runs through Geneva Park with additional crossings at Rio Grande Street, Prince Street, and Santa Fe Drive. A 30” diameter RCCP conduit installed in 1948 runs in Alamo Avenue and parts of Littleton Boulevard across the extent of the study area. The 30” conduit reduces to a 16” steel main where Alamo Avenue crosses the RTD and UPRR tracks on the east side of downtown. Lastly, a 16” water main made up of a combination of PVC and DI pipe runs along the south side of Berry Avenue.

It is recommended that any improvements proposed as a result of the study avoid impacting these large diameter conduits and transmission water mains due to the significant cost and schedule impacts associated with any relocation of these facilities.

The **Denver Water Map** provides a high-level overview of the general locations of the water mains in the study limits.

The final design of any improvements will need to take into account the Denver Water main line replacement project and the age, size, and material of existing water mains and services. It is likely that hydrant relocations will be required with any surface improvements and water main lowerings and/or relocations would need to be incorporated into any locations requiring new, modified, or upsized drainage and water quality facilities.



NEEDS ASSESSMENT SUMMARY

Plan Section	Need/Key Opportunity
People Walking	<u>Complete the Sidewalk Network</u> Fill gaps in sidewalk network at the following locations: • Santa Fe Drive (west side only) from Church Avenue past the southern edge of the study area. • Berry Avenue from Curtice Street to Prince Street. • Crestline Avenue from Santa Fe Drive to Prince Street. • Segments of Prescott Street and Lilley Avenue south of Littleton Boulevard. Widen sidewalks that are currently less than 4 feet in width to meet minimum ADA standards. These locations can be seen in the **Sidewalks Widths** map.
	<u>Upgrade Curb Ramps</u> Reconstruct non-compliant curb ramps to meet ADA standards. This includes approximately half of the locations in the study area, which can be seen on the **Walking** map.
	<u>Install Crosswalks</u> Develop and adopt an Uncontrolled Pedestrian Crossing Guidelines to inform when the City should mark crosswalks and implement other pedestrian related traffic control devices. If the City develops crossing guidelines, it should be coordinated with the Trail, School, and Park Crossing Guidance and Recommendations the City is currently developing. Based on land use and pedestrian trip generators, mark all crossings in the core area.
People Biking	<u>Upgrade Existing Bike Infrastructure</u> Replace the shared lane markings on Prince Street with protected bike lanes to make this a much safer connection in the bike network.
	<u>Connect the Bike Network</u> • Install protected bike lanes on Church Avenue from Santa Fe Drive to Prince Street. • Install protected bike lanes on Main Street from Prince Street to Court Place. • Install protected bike lanes on Alamo Avenue from Prince Street to Court Place. • Improve bike crossings at Prince Street & Alamo Avenue. • Improve bike crossings at Prince Street & Main Street. Main Street and Alamo Avenue currently do not have any bike infrastructure. The Littleton TMP proposes protected bike lanes east of Prince Street. However, this recommendation is missing a connection for bicyclists to businesses downtown. Consider protected bike lanes on Main Street and Alamo Avenue to Bowles Avenue.
	<u>Install Bike Amenities</u> • Install functional bike racks and repair stations on Main Street and Alamo Avenue. • Install secure bike parking at the light rail station.

Plan Section	Need/Key Opportunity
People Walking & People Biking	<u>Build Grade-Separated Crossings</u> • An underpass from Slaughterhouse Gulch Park to Geneva Park to connect the multi-use trail on each side of the train tracks. • A pedestrian bridge over the train tracks at Powers Avenue to close the gap between neighborhoods east of the train tracks to the downtown core. • Grade separated crossing to connect Little's Creek Trail across the railroad and to Littleton Community Trail. • Other high visibility and/or raised crosswalks and bike crossings where appropriate.
	<u>Signal Improvements</u> • Protected left turns when push button is pressed. • Leading pedestrian interval. • Rectangular Rapid Flashing Beacon (RRFB). • Pedestrian Hybrid Beacon (PHB).
	<u>Crossing Improvements</u> • Medians and pedestrian crossing islands. • Install bulb outs (curb extensions).
People Taking Transit	<u>Improve Bus Connectivity</u> • The bus routes in the study area only run once an hour at peak times, making bus travel a difficult option for those traveling to and from the downtown area. Coordinate with RTD in an effort to increase the frequency, especially for the 66, which sees the highest ridership on average. • All routes only run through the southern part of the study area, which leaves the northern residential area far from any bus stop. Change one of the bus routes to come from Belleview Avenue down Prince Street to provide transit connection for the neighborhood north of the core area. • The bus stops in the area are extremely close together. A bus stopping too frequently can increase dwell times significantly to a point that transit is not a viable travel option. Conduct an analysis to identify bus stops that should be consolidated.
	<u>Enhance Bus Stop Amenities</u> • Bus stop/mobility hub improvements like amenities and wayfinding at stop #11935, which services Arapahoe Community College. • Install a bench and shelter at stop #24430, which currently has no amenities and is across from the light rail station.
People Driving	<u>Intersection Improvements</u> Design and install improvements, for example, curb extensions, at intersections to slow vehicles and improve pedestrian/bicycle crossings.
	<u>Traffic Calming</u> Design and install traffic calming measures to reduce vehicle operating speeds. Currently, vehicles are operating above the speed limit.
	<u>Wayfinding</u> Install wayfinding signage to more effectively direct drivers to key destinations.

Plan Section	Need/Key Opportunity
People Parking	<u>Shared Parking Agreements</u> The City should employ parking management strategies such as shared parking agreements with some of the nearby private lots, which would open public parking locations in underutilized areas. The Arapahoe Community College campus has three lots that are very underutilized in the summer and currently support parking needs for many downtown events.
	<u>Paid Parking</u> Existing on-street parking could be converted to 2 or 3 hour paid parking to encourage turnover by users.
	<u>Parking Wayfinding</u> Parking wayfinding could be employed to direct users to lots with available parking.
Safety	<u>Traffic Signal or Operational Improvements</u> • Upgrade left-turn operations. • Update clearance intervals (yellow change interval + red clearance interval). • Red light cameras. • Rebuild existing traffic signal. • All-way stop signs. • Install a roundabout.
	<u>Signage Improvements</u> • Advance warning signage. • Install object markers. • Improved lane configuration signage. • Reflective signal head backplates.
	<u>Turning Movement Improvements</u> • Restrict right-turn-on-red. • Restricting left-turns at signalized intersections. • Improve geometry at channelized right-turn islands.
	<u>Access Management</u> • 3/4 movement. • Right-in/right-out.
	<u>Speed Management</u> • Install traffic calming devices such as speed humps, pinch points, chicanes, or traffic circle. • Speed feedback signs.
	<u>Improve Visibility</u> • Consider replacing existing lights on Main Street with better coverage at ground level. • Extend pedestrian lighting north and south from Main Street and Alamo Street to Church Avenue and Berry Avenue. • Explore additional creative lighting opportunities along Main Street. • Mark gateways into downtown on all sides with enhanced and special lighting to mark arrival. • Support architectural lighting strategies that enhance pedestrian experience along Main Street and Alamo Street. • Enhance lighting in Bega Park and Geneva Park. • Consider creative supplemental lighting within Little's Creek corridor and along trail for both safety and placemaking. • Consider making all of the pedestrian lights consistent style and explore implementing LED bulbs.

Plan Section	Need/Key Opportunity
Environment	Increase the amount of street trees and shade along Main Street and Alamo Avenue to combat heat island effect.
	Add diversity of tree species to ward off disease and pests as well as improved infrastructure to support health and vitality of urban canopy.
	Create a clear amenity zone away from the curb for new street trees and plantings, at a minimum of 8' wide.
	Consider bump outs and pinch points along Main Street, Alamo Avenue, and elsewhere to incorporate plantings where the street width is constrained.
	Implement green infrastructure to address stormwater concerns.
	Enhance Little's Creek channel with understory and trees and explore opportunity to utilize the channel for stormwater management.
Vibrant Destinations	Improve approach for outdoor patios on street that provide comfortable experience for pedestrians and patrons.
	Provide a cohesive palette of traditional and non-traditional street furnishings to activate the street.
	Create a more consistent wayfinding design language to guide visitors to major downtown destinations.
	Implement wayfinding signage that utilizes new technology that allows for rapid updates.
	Enhance vehicular- and pedestrian-scale gateway elements along edges of downtown to create sense of arrival.
	Bolster Main Street and Alamo Avenue with parklets and buffered patio spaces to support local businesses.
	Consider enhancing Main Street with more public art elements, overhead canopy, and lighting elements that span the width of the road.
	Explore utilizing alleyways for additional public space and public art opportunities.
	Create more comfortable gathering spaces that are family friendly.
	Explore consistent approach and guidelines for outdoor patios located below curb.
Historic Character	Celebrate and connect to historic places and landmarks with enhanced interpretive signage.
	Enhance wayfinding addressing historic architecture and elements in the downtown core.
	Consider opportunities to use public art to celebrate and build on historic character.
	Engage with local business to ease the path towards adaptive reuse of structures in future development.
	Take cues from Littleton's architectural history and heritage within public spaces and the streetscape.
	Incorporate brick, stone, and other natural materials utilized in Littleton's historic architecture in public spaces and streetscape.

DOWNTOWN CORE ASSESSMENT

The consultant team evaluated the public realm using the Twelve Quality Criteria method. This is a tool developed by Gehl Architects, a global design consulting firm based in Copenhagen, Denmark, for researching how public spaces are experienced by their users. More specifically, the tool was developed to offer a consistent approach to qualitative assessment of the various aspects of a public space that make it feel protected, comfortable, and enjoyable for people spending time there.

The thinking behind these three categories is as follows:

1. Without basic **protection** from cars, noise, rain, and wind, people will generally avoid spending time in a space.
2. Without elements that make walking, using a wheelchair, standing, sitting, seeing, and conversing **comfortable**, a place won't invite people to stay.
3. Great public spaces tend to offer positive aesthetic and sensory **experiences**, take advantage of local climate, and provide human-scale elements so visitors don't feel lost in their surroundings.

There are twelve elements within the three categories. The project identified a score between one (least successful) and three (most successful) for each of the elements at fifteen identified locations in the core study area. The overall score identified for each location will reveal the opportunities and constraints for each area and guide future recommendations.

PROTECTION	**PROTECTION AGAINST TRAFFIC CRASHES** • Protection for pedestrians • Eliminating fear of traffic	**PROTECTION AGAINST HARM BY OTHERS** • Lively public realm • Eyes on the street • Overlapping day and night functions • Good lighting	**PROTECTION AGAINST UNPLEASANT SENSORY EXPERIENCES** • Wind / Dust • Rain / Snow • Cold / Heat • Pollution • Noise
COMFORT	**OPTIONS FOR MOBILITY** • Accessibility for everyone • Lack of obstacles • Room for walking	**OPTIONS TO STAND AND LINGER** • Lively public realm • Eyes on the street • Overlapping day and night functions • Good lighting	**OPPORTUNITIES TO SIT** • Good public seating options,; benches, seating walls etc. • Intentional, designated areas for seating
	OPPORTUNITIES TO SEE • Unhindered views • Interesting views • Lighting	**OPPORTUNITIES FOR TALKING AND LISTENING** • Low noise levels • Street furniture that promotes social engagement	**OPTIONS FOR PLAY, EXERCISE & ACTIVITIES** • Opportunities to be active throughout the day and seasonally • Areas for street entertainment
EXPERIENCE	**SCALE** • Buildings and spaces designed to a comfortable human scale • Activated edges	**OPPORTUNITIES TO ENJOY THE POSITIVE ASPECTS OF CLIMATE** • Sun / Shade • Heat / Coolness	**POSITIVE SENSORY EXPERIENCE** • Appealing and thoughtful design • Good materiality • Trees and vegetation areas • Well maintained areas

**NOTE: Gehl Twelve Quality Criteria Graphic adapted from graphic published in "New City Life" The Danish Architectural Press, 2006.*

CORE STUDY AREA

	(Each criteria scored out of 3)	Observation Locations															Overall Category Score (out of 45)
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
PROTECTION	Protection Against Traffic Crashes	1	1	3	2	2	3	1	3	3	2	2	2	2	1	2	30
	Protection Against Harm by Others	2	2	3	2	3	2	2	2	3	1	2	1	1	1	1	28
	Protection Against Unpleasant Sensory Experiences	1	2	2	2	3	2	1	2	2	2	2	1	1	1	2	26
COMFORT	Options for Mobility	1	1	2	1	2	1	2	1	3	1	1	1	2	1	1	21
	Options to Stand and Linger	1	1	3	1	2	1	1	3	2	2	2	1	1	1	2	24
	Opportunities to Sit	1	1	2	1	1	1	1	3	1	1	1	1	1	1	1	18
	Opportunities to See	2	2	2	1	3	1	2	1	3	2	1	1	1	1	1	24
	Opportunities for Talking and Listening	1	2	2	1	1	1	1	2	2	1	1	1	1	1	1	19
	Options for Play, Exercise, and Activities	1	1	1	1	1	1	1	1	2	1	1	1	2	2	1	18
EXPERIENCE	Scale	1	2	2	2	3	1	2	1	2	1	2	1	1	1	1	23
	Opportunities to Enjoy the Positive Aspects of Climate	1	2	2	2	1	1	1	2	2	2	2	1	1	1	2	23
	Positive Sensory Experience	1	2	2	2	2	2	1	2	2	1	1	1	1	1	1	22
	OVERALL LOCATION SCORE (out of 36)	**14**	**19**	**26**	**18**	**24**	**17**	**17**	**24**	**27**	**17**	**18**	**13**	**15**	**13**	**16**	

** NOTE: Overall location score indicates how enjoyable each location is (higher score means more enjoyable).*
Overall category score indicates how well Downtown Littleton is doing within each category (higher score means doing well, for example - the Protection Against Traffic Crashs score is 30/45, meaning downtown is designed in a way that it is good at protecting against these types of crashes.

CORE STUDY AREA OBSERVATIONS

Overall, the downtown core scored highest in the protection category, with protection against traffic accidents as the highest rated element, and lowest in the comfort category, with opportunities to sit and options for play, exercise, and activities as the lowest elements.

The following represents observations and key opportunities for improvement at each individual location.

OVERALL DOWNTOWN CORE KEY TAKEAWAYS:

- Lack of shade and protection from the elements such as sun, rain and wind.
- Fast vehicular speeds observed along Main Street and Alamo Avenue.
- Accessibility concerns throughout the downtown core (trees and streetscape elements directly in the path of travel).
- Limited and substandard street crossings.
- Lack of facility and parking infrastructure to support bicyclists and micromobility users.
- Virtually no street furnishings present in all locations observed. Non-anchored private street furnishings had been provided outside many shopfronts.
- Style of wayfinding elements vary widely (with three main typologies).
- Lack of cohesion with streetscape palette. Limited palette found throughout and no significant differentiation of materials found along Main Street or Alamo Avenue.
- Lack of active opportunities to gather, linger and or play throughout the downtown core.

OBSERVATION LOCATION 1

OVERALL SCORE: 14 / 36

This location is the primary vehicular entry point into downtown from the west. The intersection is very loud, with limited protection from the elements while pedestrians wait to cross the road.

OPPORTUNITIES:

- Create vehicular scale gateway to announce arrival to downtown core, building off of mountain views and historic character.
- Bolster median islands with vegetation, shade, and/or lighting elements to provide refuge for pedestrians.
- Address noise pollution through added vegetation.
- Consider supplemental pedestrian protection at refuges and or in approach of crossings.

Intersection of Santa Fe Drive and Alamo Avenue looking north.

OBSERVATION LOCATION 2

OVERALL SCORE: 19 / 36

This location, along the western side of Main Street, features planter pots, wayfinding signage, and one of Main Street's remaining trees. While this location features streetscape elements, there is a lack of places to comfortably gather or sit.

OPPORTUNITIES:

- Consider adding a safe pedestrian crossing roughly in this location.
- Enhance this area with shade and seating opportunities.
- Consider enhanced paving and streetscape finishes using brick, stone metal and other materials present in on historic structures.
- Add planter pots on ground and elevated if possible to enhance experience.
- Potential for overhead spanning element(s) to enhance pedestrian experience; lighting, festive banners, shade sails and/or art.
- Consider enhancing space for gathering, outdoor dining, and events.

On Main Street between Rapp Street and Curtice Street looking east.

OBSERVATION LOCATION 3

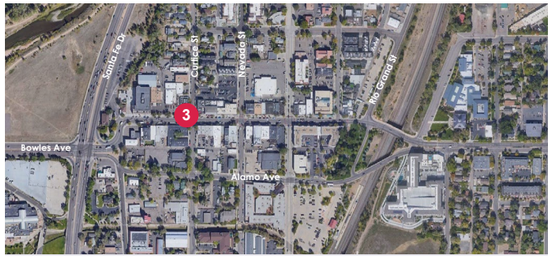
OVERALL SCORE: 26 / 36

This location is similar to the Observation Location 2, but provides a more comfortable sense of scale through the presence of pedestrian streetlights and a more consistent building form. There is better protection against traffic accidents due to the bump out at the intersection.

OPPORTUNITIES:

- Enhanced and added mid-block bump outs with plantings or public art.
- Plant trees in consistent pattern to provide shade and combat urban heat island effect.
- Consider enhanced paving and streetscape finishes using brick, stone metal and other materials present in on historic structures.
- Add planter pots on ground and elevated if possible to enhance experience.
- Potential for overhead spanning element(s) to enhance pedestrian experience; lighting, festive banners, shade sails and/or art.
- Consider enhancing space for gathering, outdoor dining, and events.

Intersection of Main Street and Curtice Street looking east.



OBSERVATION LOCATION 4

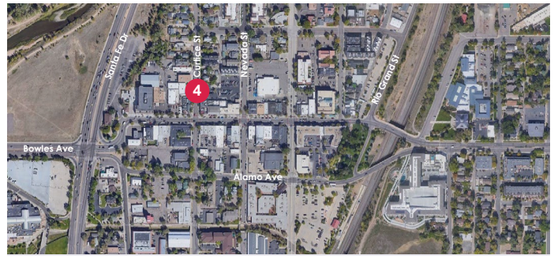
OVERALL SCORE: 18 / 36

This location along Curtice Street is lacking in the comfort category, with nothing encouraging visitors to linger or gather.

OPPORTUNITIES:

- Introduce street furnishings that activate the space and provide opportunity to stand, sit, and linger for pedestrians traversing or shopping along this street.
- Add planter pots on ground and elevated if possible to enhance experience.
- Consider enhancing space for gathering, outdoor dining, and events.

On Curtice Street north of Main Street looking north.



OBSERVATION LOCATION 5

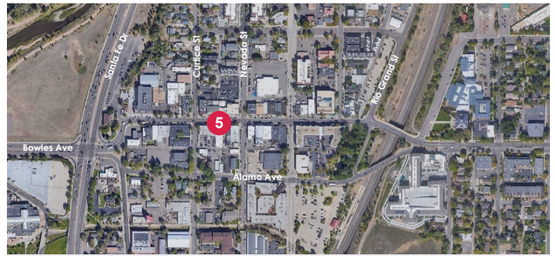
OVERALL SCORE: 24 / 36

This is a mid-block location along Main Street and it feels that cars rush past at high speeds. This area lacks shade and seating elements but the character and building form along this block is quaint, consistent, and historic. There is also a clear view down Main Street towards the mountains.

OPPORTUNITIES:

- Explore mid-block bulbouts with vegetation and street trees incorporated to slow traffic, create shade, and beautify this block.
- Consider a mid-block crossing.
- Add planter pots on ground and elevated if possible to enhance experience.
- Potential for overhead spanning element(s) to enhance pedestrian experience; lighting, festive banners, shade sails and/or art.
- Introduce street furnishings that activate the space and provide opportunity to stand, sit, and linger for pedestrians traversing or shopping along this street.
- Consider enhancing space for gathering, outdoor dining, and events.
- Plant trees in consistent pattern to provide shade and combat urban heat island effect.

On Main Street between Curtice Street and Nevada Street looking east.



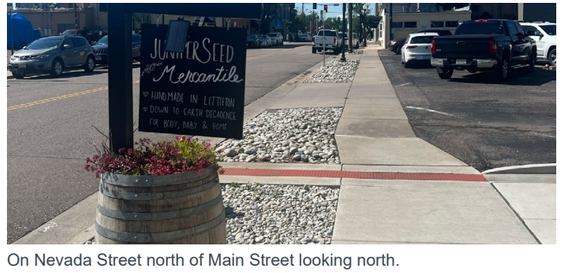
OBSERVATION LOCATION 6

OVERALL SCORE: 17 / 17

This location along Nevada Street includes some local businesses mixed with surface parking lots. While there are detached sidewalks, the amenity zone is currently rock mulch. There is lack of street trees, shade, and seating opportunities.

OPPORTUNITIES:

- Implement street trees and plantings in the amenity zone.
- Introduce street furnishings that activate the space and provide opportunity to stand, sit, and linger for pedestrians traversing or shopping along this street.
- Add planter pots on ground and elevated if possible to enhance experience.



On Nevada Street north of Main Street looking north.

OBSERVATION LOCATION 7

OVERALL SCORE: 17 / 36

This is a busy location at the intersection of Prince Street and Main Street. The wayfinding signage at the corner negatively impacts pedestrian sight triangles. There is a lack of shade in this location.

OPPORTUNITIES:

- Move wayfinding signage so that it does not impact ability for pedestrians to safely cross the road.
- Plant trees in consistent pattern to provide shade and combat urban heat island effect.
- Add planter pots on ground and elevated if possible to enhance experience.
- Potential for overhead spanning element(s) to enhance pedestrian experience; lighting, festive banners, shade sails and/or art.
- Consider enhancing space for gathering, outdoor dining, and events.

Intersection of Main Street and Prince Street looking east.

OBSERVATION LOCATION 8

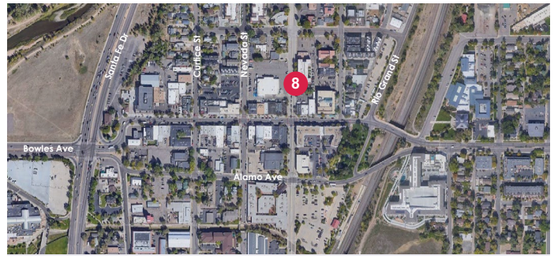
OVERALL SCORE: 24 / 36

This observation location is one of the few with benches and an opportunity to sit. With street trees along Prince Street, this location ranks fairly high.

OPPORTUNITIES:

- Create a more robust amenity zone with plantings to support street trees.
- Consider enhancing space for gathering, outdoor dining, and events.

On Prince Street north of Main Street looking south.



OBSERVATION LOCATION 9

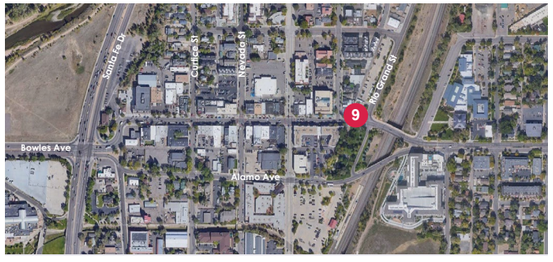
OVERALL SCORE: 27 / 36

This observation location is along Main Street and directly adjacent to Bega Park, which provides places to gather and sit. The sidewalk between the park and Main street includes wayfinding signage, street trees, pedestrian scale lighting, and planters. This was the highest scored location.

OPPORTUNITIES:

- Create opportunities for play in Bega Park.
- Potential for overhead spanning element(s) to enhance pedestrian experience; lighting, festive banners, shade sails and/or art.
- Add planter pots on ground and elevated if possible to enhance experience.
- Consider enhancing space for gathering, outdoor dining, and events.

On Main Street north of Bega Park looking west.



OBSERVATION LOCATION 10

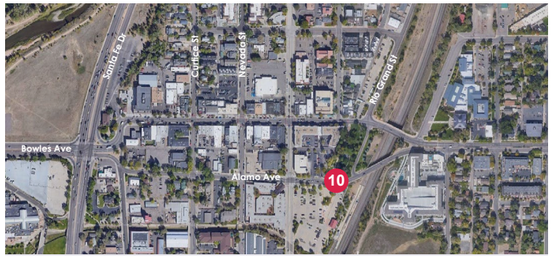
OVERALL SCORE: 17 / 36

This observation location is along Alamo Avenue and directly adjacent to Bega Park. While there are mature trees and green space within the park, there is a lack of wayfinding and connection to the RTD stop.

OPPORTUNITIES:

- Enhance connection between Bega Park and RTD stop.
- Capitalize on mountain views looking west down Alamo Avenue.
- Consider enhancing space for gathering, outdoor dining, and events.

On Alamo Avenue south of Bega Park looking west.



OBSERVATION LOCATION 11

OVERALL SCORE: 18 / 36

This intersection at the corner of Curtice Street and Alamo Avenue features fast moving vehicles. The wayfinding signage in this location also blocks the pedestrian sight triangle.

OPPORTUNITIES:

- Enhance wayfinding and connection to Little's Creek Trail.
- Move wayfinding signage so that it does not impact visibility/safety for pedestrians to safely cross the road.
- Consider enhanced paving and streetscape finishes using brick, stone metal and other materials present in on historic structures.

Intersection of Alamo Avenue and Curtice Street looking east.

OBSERVATION LOCATION 12

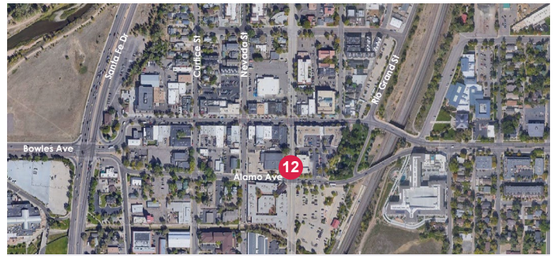
OVERALL SCORE: 13 / 36

This intersection, at Alamo Avenue and Prince Street, feels geared towards vehicles. There is a lack of shade and activation.

OPPORTUNITIES:

- Engage and activate the Arapahoe Community College frontage.
- Plant trees in consistent pattern to provide shade and combat urban heat island effect.

Intersection of Prince Street and Alamo Avenue looking north.



OBSERVATION LOCATION 13

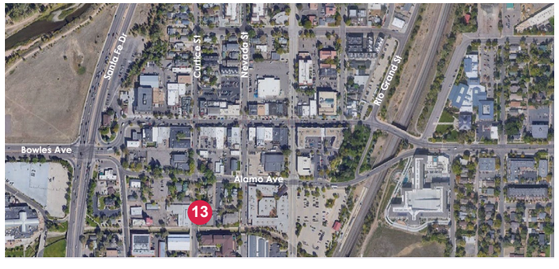
OVERALL SCORE: 15 / 36

This location is at the intersection of Curtice Street and Little's Creek Trail. There is a lack of shade and no activation. The character of the buildings in this area are disparate.

OPPORTUNITIES:

- Plant trees in consistent pattern to provide shade and combat urban heat island effect.
- Create a stronger connection to Little's Creek Trail.

Curtice Street north of Little's Creek looking north.



OBSERVATION LOCATION 14

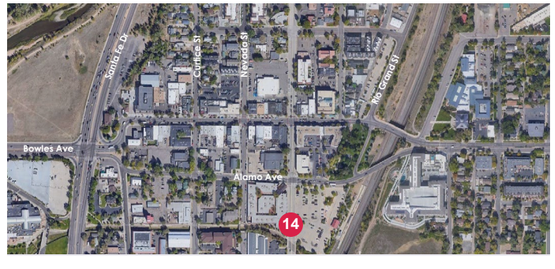
OVERALL SCORE: 13 / 36

This location is at the intersection of Prince Street and Little's Creek Trail. The entry to the trail is unmarked and narrow. There are limited street trees and a lack of places to sit at this location.

OPPORTUNITIES:

- Plant trees in consistent pattern to provide shade and combat urban heat island effect.
- Celebrate connection to Little's Creek Trail.

Prince Street looking north towards Little's Creek Trail connection.



OBSERVATION LOCATION 15

OVERALL SCORE: 16 / 36

This location is north of the downtown core along Powers Avenue. The land use character feels more residential but this location is directly adjacent to a surface parking lot. There are an abundance of street trees but a lack of places to sit.

OPPORTUNITIES:

- Implement amenity zone with plantings.

Powers Avenue between Prince Street and Sycamore Street looking east.