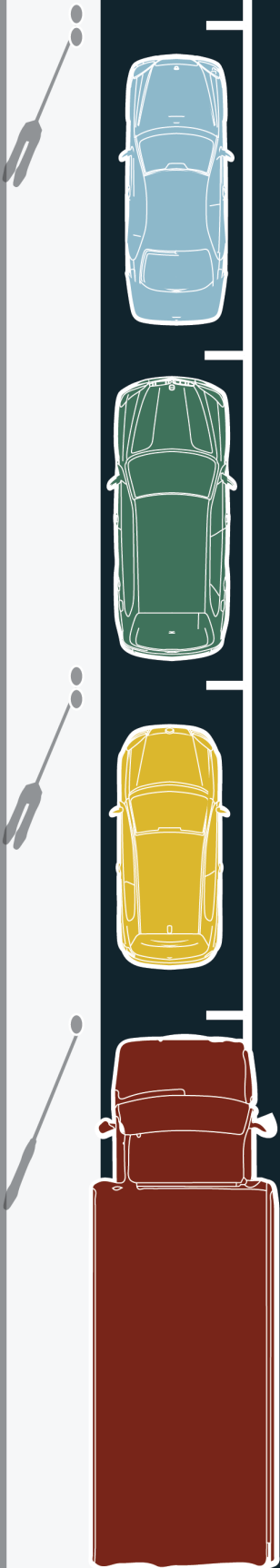


BOULDER CURBSIDE IMPLEMENTATION GUIDEBOOK

**PREPARED FOR:
THE CITY OF BOULDER
MAY 31, 2023**



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INTRODUCTION

The City of Boulder Curbside Management Guidebook reevaluates how Boulder designates and manages its curbside space. The project provides a general framework for managing the curbside citywide and specifically examines curbside space in the city's three General Improvement Districts that currently see a high demand for the curbside and manage access: Downtown, University Hill, and Boulder Junction.

The future vision for the curbside is to balance established and emerging uses of curbside space in ways that meet community needs and further the community's vision for livable, connected public spaces and the safe and efficient movement of people and goods.

This project applies an existing conditions memo (**Appendix A**), community outreach summary (**Appendix B**), peer review (**Appendix C**), national best practices (**Appendix C**), and pilot projects (**Appendix I**) to identify: new and updated policies for regulating the curbside, goals for the breakdown of curbside designation types, guidance on how alleys can accommodate demand for curbside uses, and catalysts for making changes to the curb.

What is Curbside Management?

Curbside management involves the planning, measuring, managing, allocating, and enforcement of the uses and users of the curb by a government agency.

The curbside is, in physical terms, the side of a road or sidewalk that is nearest to the curb. This space serves multiple users, uses, and functions. The curbside is where a person may board a bus, hail a ride, lock a bicycle, end an e-scooter ride, pick up a delivery package, and/or park a car, among a variety of other activities.

Unlike a travel lane, which only serves the function of vehicular movement, the curbside is an inherently dynamic

space, and needs to serve a multitude of users and uses safely and efficiently. Within the curbside zone, curb space is the physical curb and how it is marked and signed to denote curbside functions for users (NCHRP, 2022).

The curb has traditionally been dedicated to on-street parking, but changes in how people and goods move – and the COVID-19 pandemic – have brought to light new, creative ways of using curbside space. From “parklets” to outdoor dining to TNC pick-up/drop-off, curbside spaces provide valuable opportunities to meet community needs.

Rethinking curbside space will help the city to adapt to these shifts in how people travel and how the marketplace delivers goods. Technology and information sharing are also allowing curbside space to evolve from being static to having more dynamic uses that change to accommodate real-time curbside needs based on the time of day or day of the week, as shown in the Existing Conditions Memo (**Appendix A**).

The curb has a large impact on placemaking—how the curb is used can influence the character of a street and surrounding land uses and how users interact with them. Therefore, decisions about the curb are informed by recent planning documents, such as the Boulder Valley Comprehensive Plan, Transportation Master Plan, Climate Action Plan, and Access Management and Parking Strategy (AMPS).

Strategic recommendations and decisions about management of the curb will contribute to improved outcomes to safety, sustainability, mode shift, economic vitality, and livability.

How to Use This Guidebook

The Curbside Implementation Guidebook focuses on the recommendations for future management of the curbside. Content regarding the planning process and details of implementation are located



Table 1: Guidebook versus Online Tool Comparison

	Contents	How and when to use
Guidebook	Background information Context Planning process Static decision-making material	Manual review of information which provides the context and defense of decision-making
Online Tool	Decision-making material in a dynamic and iterative format	Online interactive flowchart with conditional responses to streamline the application and documentation of decision-making processes

in the Appendices. The Guidebook itself focuses on the framework for making changes to the curb.

The Curbside Management Implementation Guidebook is accompanied by an online interactive tool located here: placeholder for tool link. **Table 1** contains a comparison of the content and use case for the Guidebook versus the online tool.

This tool is designed to help City of Boulder staff make decisions related to curbside management, in accompaniment with the Boulder Curbside Management Implementation Guidebook. When determining whether to make changes to the curb (either proactive or reactive), this internal tool provides a streamlined, data-driven, and transparent decision-making process and documentation.

CURB MANAGEMENT FRAMEWORK

The framework for managing the curbside is defined in this section, and consists of:

- Curbside menu
- Curbside typology
- Curbside hierarchy
- Typical blocks for each curbside type

Curbside Menu

The curbside menu contains all of the designations that the City of Boulder has on its curbside today and are proposed into the future, through this planning process. **Figure 1** shows the full menu of curbside uses that currently exist in Boulder (on the left) and the curb uses that this plan recommends the city implement in the future (on the right). **Figure 2** provides brief definitions of each curbside use for existing and proposed uses, respectively.

The cut sheets in **Appendix F** provide guidance for implementation for each curb use identified in the curb menu. Each cut sheet includes:

- A description of the curbside use
- Enforcement and pricing considerations
- Recommended time restrictions
- Planning-level cost estimate
- Design considerations



CURB USE MENU

EXISTING



Storage for micromobility devices designated with a painted box marked on the curb or a corral that extends into the street. This space can store personal or shared bicycles and scooters. The city has created on-street bike parking corrals but not similar spaces for other micromobility devices. Corrals could incorporate charging stations for e-bikes and e-scooters.



Designated areas for private vehicles, taxis, and Transportation Network Companies (TNCs), such as Uber and Lyft, to drop-off or pick-up passengers. These zones may have time restrictions.



Designated spaces along the curb for private shuttles such as hotel shuttles or pick-up/drop-off zones exclusively to facilitate valet parking.



Serve both commercial and private vehicles that are loading or unloading goods.



Landscaping or public art that is used to enhance the pedestrian experience, activate a space, or provide shade.



Includes curb extensions and pedestrian crossing treatments such as bollards that bring the curb into the travel lane to shorten crossing distances and improve sightlines.



Designated parking exclusively for electric vehicles that have chargers available and may be time restricted.



Designation of on-street parking for public use that may be time restricted and have associated fees. Parking may be priced based on performance-based pricing per the Municipal Code. This curb designation also includes permitted parking such as spaces associated with the Neighborhood Parking Permit program.



Parking spaces with sizing and clearances that are accessible and compliant with the Americans with Disabilities Act.

Figure 1: Curb Menu



Bus stops are a curb use for public transit (RTD or Via) that can either be designated as pull-out stops, in-travel lane stops, or floating bus stops.



Reallocation of curb space that serves private businesses as an extension of their dining area.



Designated spaces for government vehicles such as police, emergency response, park rangers, or other city officials. Photo Radar Enforcement Parking.

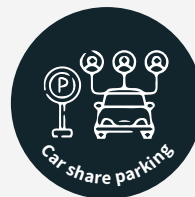
PROPOSED



Flex zones accommodate drivers who need curb access for a short period (<10 minutes) for curbside pick-up or to load or unload goods or passengers. The short time window is intended to promote high turnover and allow for these brief activities by passenger, TNC, or small commercial vehicles. This space is different than private vehicle parking, where the first 15-minutes is free.



Parklets expand the pedestrian realm beyond the sidewalk to activate additional public space. Many cities have used parklets to convert on-street parking to environments that include urban park features such as landscaping, benches, and public art. Unlike the existing parklets designated for private dining, these parklets are public spaces not associated with a business.



Car share providers may be permitted to store vehicles in dedicated on-street spaces that customers can locate through the provider's reservation system. On-street parking spaces are generally reserved for a specific provider. Boulder currently has designated car share parking, but they are exclusively in off-street parking locations.

Glossary of Curb Uses

Figure 2 describes the various curb uses that are currently present within the three General Improvement Districts and the curb uses that are proposed in the future, per this Guidebook.

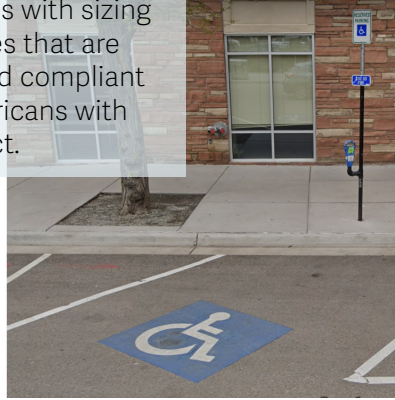
Along with these current uses of the curb, there are locations where parking is not allowed, per the Boulder Revised Code; these include in front of a fire hydrant, at the approach to a crosswalk or intersection, or locations where there is no overnight parking allowed due to maintenance or safety reasons.

Figure 2: Glossary of Current and Proposed Curb Uses in Boulder

EXISTING

ADA accessible parking

Parking spaces with sizing and clearances that are accessible and compliant with the Americans with Disabilities Act.



Bike & scooter parking

Storage for micromobility devices (only contracted permitted scooter and rental parking) designated by a painted box marked on the pavement or a corral in the parking area.

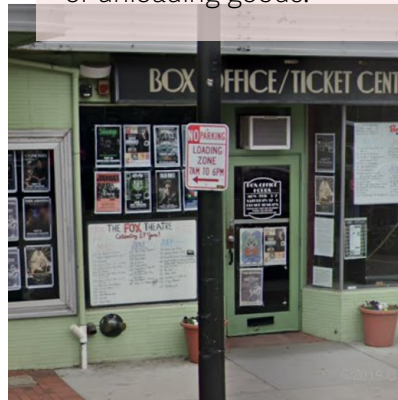


Bus

Space reserved for RTD transit passes at bus load

Goods loading zone

Serve both commercial and private vehicles that are loading or unloading goods.



Parklets for seating & outdoor dining

Reallocation of curb space that serves private businesses as an extension of their dining area. Some spaces are not associated with an adjacent business but offer general seating.



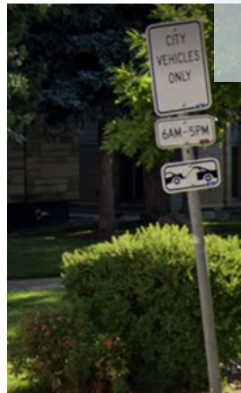
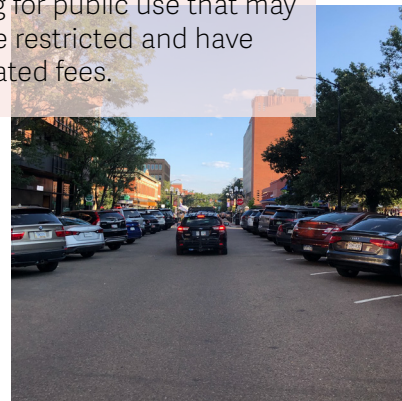
Private vehicle parking

Designation of on-street parking for public use that may be time restricted and have associated fees.



Private shuttle/valet

Dedicated spaces for private vehicles such as those associated with a hotel or event space.



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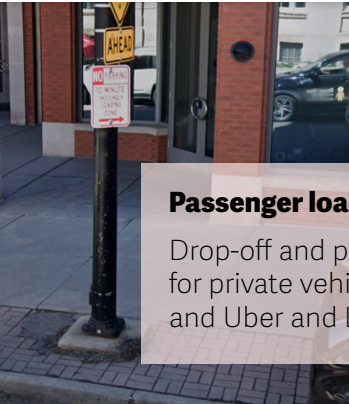


Electric vehicle parking

Parking reserved for electric vehicles with charging stations available.

Pedestrian crossing

Crosswalks with features like curb extensions to shorten crossing distances and improve sightlines or enhanced signage.



Passenger loading zone

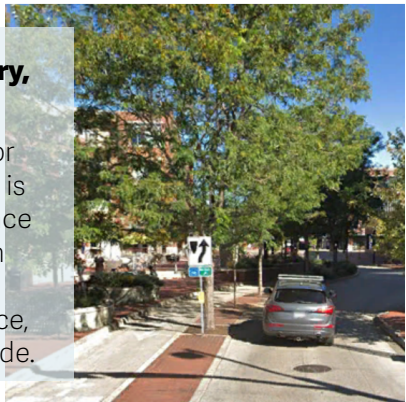
Drop-off and pick-up areas for private vehicles, taxis, and Uber and Lyft.

Reserved space
Dedicated spaces for specific uses such as city fleet vehicles.



Trees, greenery, and art

Landscaping or public art that is used to enhance the pedestrian experience, activate a space, or provide shade.



PROPOSED

Flexible Loading Zone

Accommodates drivers who need curb access for less than 15 minutes. These spaces allow goods delivery, passenger pick-up/drop-off, curbside pick-up, and use by Uber and Lyft.



Public seating parklet

Expand the pedestrian realm beyond the sidewalk to activate additional public space, as permitted by the City of Boulder. They may include urban park features such as landscaping, benches, and public art, and are not associated with a business.

Car share parking

On-street vehicle parking spaces designated for car sharing vehicles.



Curbside Typology

This plan establishes a curbside typology of streets citywide based on their street classification and adjacent land uses, as illustrated in **Figure 4**.

The curbside typology, as shown in **Figure 3** groups street blocks that are similar in how their curb functions. This typology is used to

identify the curb types that are more or less important in each of these curbside types, as described in the next section on Curb Hierarchy.

Ultimately, the mix of curbside types in an area will dictate the curb uses appropriate in the area, and the approximate distribution of these uses. The typology groups all streets

Figure 3: Curbside Typology by Land Use and Street Classification

		STREET CLASSIFICATION		
		PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR
LAND USE	COMMERCIAL	N/A or Manual	Commercial Center	Commercial Center
	HIGH DENSITY RESIDENTIAL	N/A or Manual	Commercial Center	Residential Corridor
	MEDIUM & MIXED DENSITY RESIDENTIAL	N/A or Manual	Residential Corridor	Neighborhood Avenue
	INDUSTRIAL	N/A or Manual	Industrial Corridor	Industrial Corridor
	LOW DENSITY RESIDENTIAL	N/A or Manual	Residential Corridor	Neighborhood Avenue
	OPEN SPACE & PARKS	N/A or Manual	Neighborhood Avenue	Neighborhood Avenue
	PUBLIC	N/A or Manual	N/A or Manual	N/A or Manual



RESIDENTIAL

ALLEY

Commercial Center

Activated Alley

Residential Corridor

Activated Alley

Neighborhood Avenue

Residential Alley

Industrial Corridor

Activated Alley

Neighborhood Avenue

Residential Alley

Neighborhood Avenue

N/A or Manual

N/A or Manual

N/A or Manual

DEFINITION OF TYPES

COMMERCIAL CENTER

The most diverse mix of curbside uses to accommodate high turnover, people biking and walking, and goods delivery required along a commercial corridor or high density residential area.

RESIDENTIAL CORRIDOR

A large portion of private vehicle parking with a mix of other uses at ends of blocks such as loading zones, bus stops, and electric vehicle charging stations.

INDUSTRIAL CORRIDOR

Industrial-specific curb uses that include high amounts of loading and larger commercial parking.

NEIGHBORHOOD AVENUE

Mostly private vehicle parking, with very few non-parking spaces, which include loading, trees, parklets, and car share.

ACTIVATED ALLEY

Alley with mostly loading and activation such as parklets, some parking, and multimodal circulation.

RESIDENTIAL ALLEY

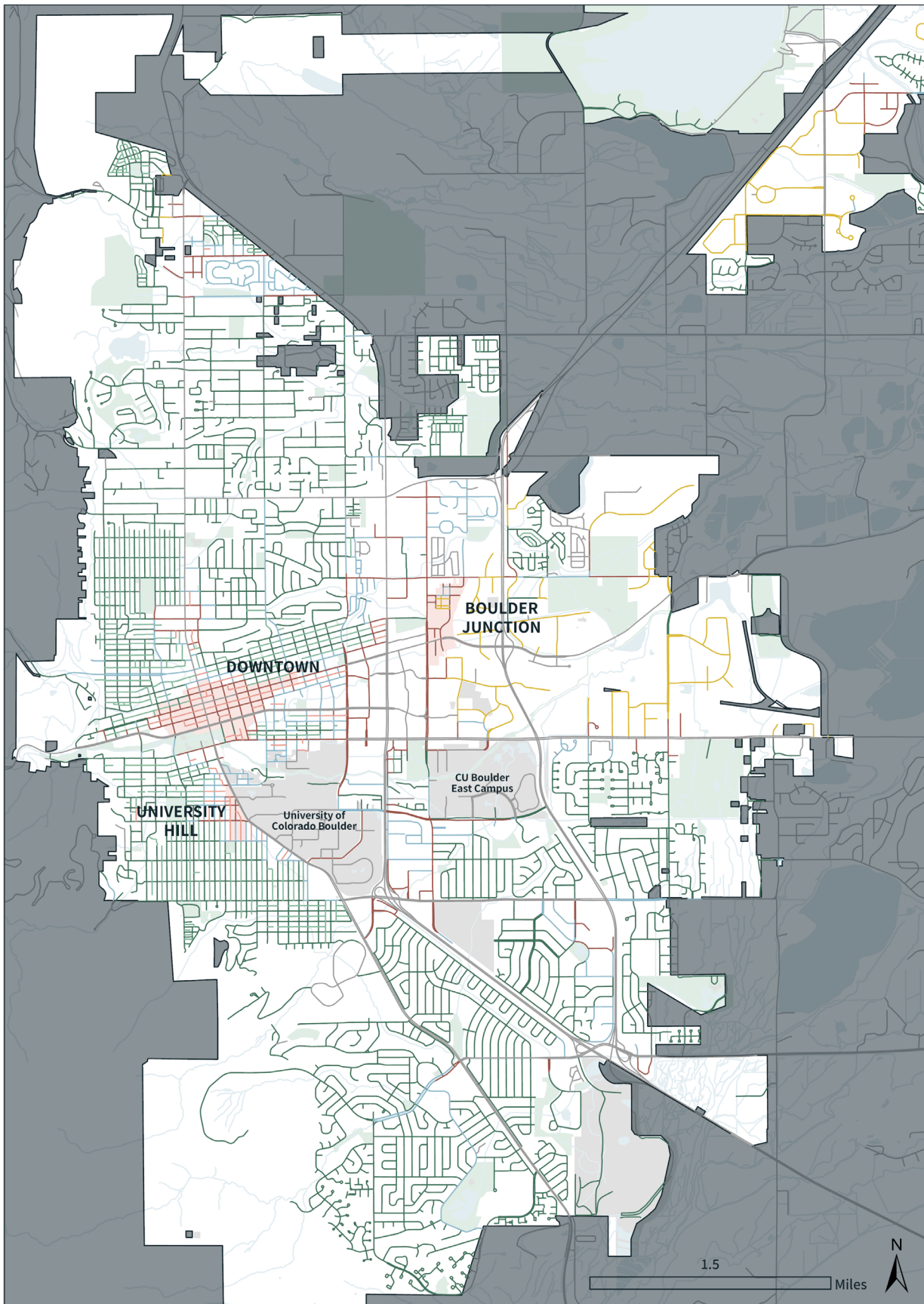
Alley with mostly parking or vehicular circulation.

N/A OR MANUAL

Principal arterials often do not allow curbside access. When they do have space for curbside access, these are unique cases that should be determined on a case-by-case basis. Public land uses are also coded this way since they vary so significantly (privately owned, CU campuses, cemeteries, NIST, airport, etc.) and cannot be coded according to a typology.



Figure 4: Curbside Typology



- | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Areas of Focus | Curbside Typology | Residential Corridor | Industrial Corridor |
| Parks | Neighborhood Avenue | Commercial Center | Not Applicable |
| City Limits | Residential Alley | Activated Alley | |



in the City of Boulder into one of four types—commercial centers, residential corridors, industrial corridors, and neighborhood avenues. All alleys are grouped into one of two types—activated alleys and residential alleys.

- **Commercial centers** feature the most diverse mix of curbside designations to accommodate high turnover, people walking and biking, and goods delivery required along a commercial corridor or high-density residential area.
- **Residential corridors** have a large portion of private vehicle parking with a mix of passenger and goods loading.
- **Industrial corridors** host industrial-specific curb uses, with high amounts of loading and larger commercial vehicle parking.
- **Neighborhood avenues** have lower densities than residential corridors and have mostly private vehicle parking, with very few loading zones.
- **Activated alleys** host mostly loading, some parking, and may include multimodal circulation or greening/activation in the future.
- **Residential alleys** are used mostly for parking or vehicular circulation.

Streets marked “**not applicable**” include private property such as University of Colorado property, National Institute of Standards and Technology (NIST), and the airport. That property owner will determine the designation of their curbsides. Principal arterials are also marked as “not applicable” since they generally do not allow curbside access and should be determined on a case-by-case basis.

Certain exceptions to this curbside typology and the strategy for curbside management outlined in this document exist, including Neighborhood Parking Permit (NPP) areas and neighborhood trailheads. The NPP program limits on-street parking to neighborhood residents with permits, with the Residential

Access Management Program (RAMP) assessing which neighborhoods qualify for the NPP program. These programs run concurrently to this curbside management effort and would supersede recommendations in this plan.

Additionally, many neighborhood avenues and residential corridors in Boulder feature trailheads, and therefore these streets will experience a different mix of resident users and visitors. City staff must use professional judgment to adjust the mix of curb uses on these streets, based on their unique circumstances. For example, the Chautauqua Access Management Plan (CAMP) specifically explored ways to manage existing demand for access to Chautauqua Park and minimize impacts on neighbors.

Curb Hierarchy

The curbside hierarchy shown in **Figure 5** shows the prioritized goals for curb space in each street type.

Each of the four goals – access for people, access for commerce, activation/placemaking, and vehicle storage – are supported by specific curb uses. For example, bus stops support access for people, goods loading zones support access for commerce, parklets support activation/placemaking, and private vehicle parking supports vehicle storage. The new curbside designation, Flexible Loading Zones, supports both access for people and access for commerce, since these zones can be used for passenger loading, curbside pickup, and more.

The highest priority in **commercial centers** and **residential corridors** is **access for people**, since these areas downtown and in GDs attract as many visitors as possible to support local businesses and facilitate multimodal transportation to a high density of key destinations. The ranking of priorities in commercial centers inside managed districts versus outside managed districts differs slightly, with activation/greening a larger focus

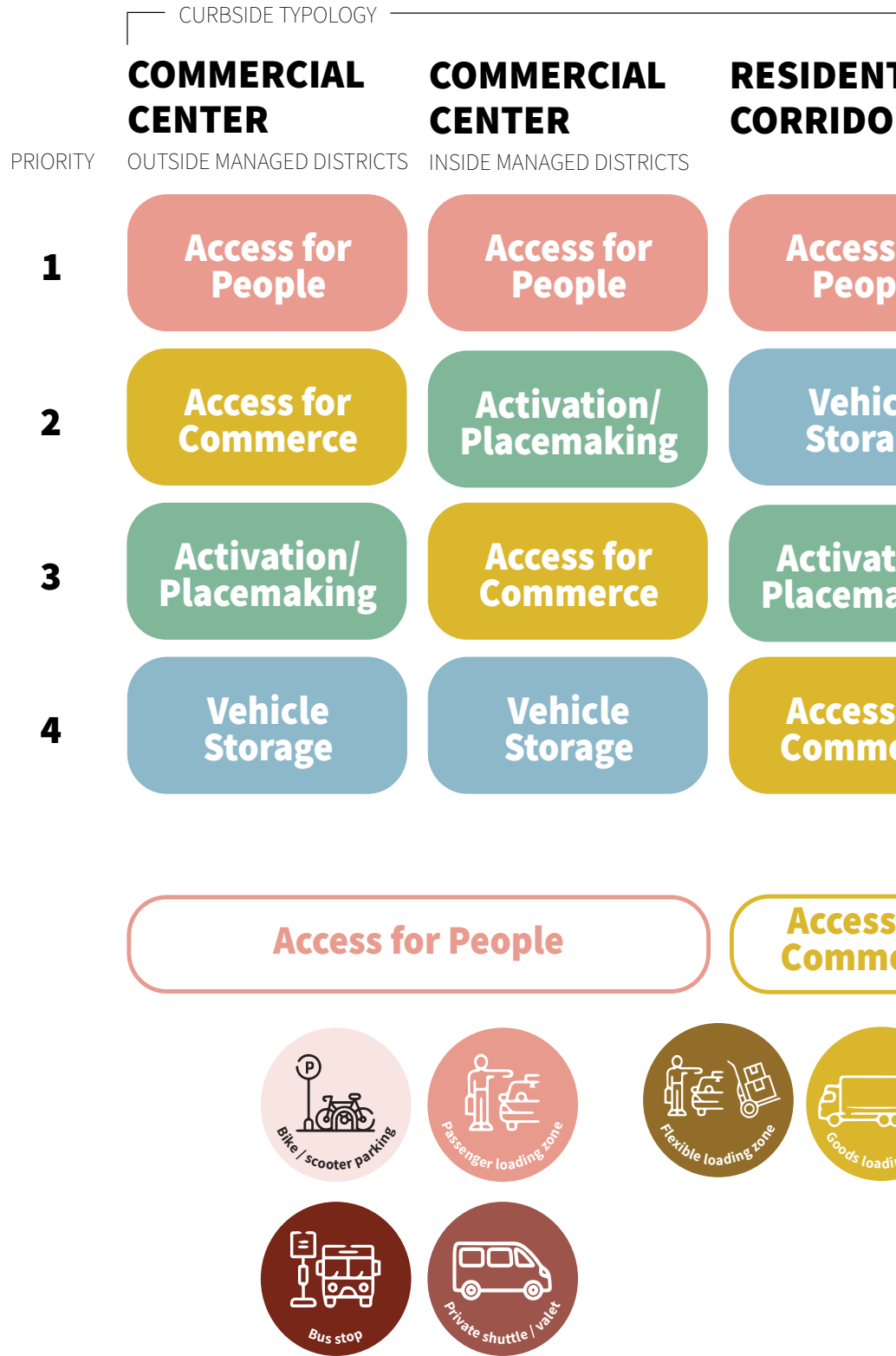


inside managed districts since these districts have greater funding available for streetscape improvements.

The highest priority in **industrial corridors** and **activated alleys** is **access for commerce**, since these areas feature truck routes, facilitate goods delivery, and generally are used more often by large commercial vehicles. The highest priority in **neighborhood avenues** and **residential alleys** is **vehicle storage**, since residents in these areas require more curb space to park their personal vehicles overnight.

While the existing distribution of curb space in Boulder favors vehicle storage, this new curbside management strategy shifts its position in the hierarchy to reflect the city's interest in promoting multimodal transportation access, reducing traffic congestion by shifting trips to alternate modes, streamlining goods and passenger loading, and creating a more pleasant streetscape with pedestrian amenities like enhanced crossings, parklets, landscaping, and public art.

Figure 5: Curbside Hierarchy



COMMERCIAL CORRIDOR	INDUSTRIAL CORRIDOR	NEIGHBORHOOD AVENUE	ACTIVATED ALLEY	RESIDENTIAL ALLEY
---------------------	---------------------	---------------------	-----------------	-------------------

Access for People	Access for Commerce	Vehicle Storage	Access for Commerce	Vehicle Storage
Vehicle Storage	Vehicle Storage	Access for People	Activation/Placemaking	Access for Commerce
Activation/Placemaking	Access for People	Activation/Placemaking	Access for People	Access for People
Access for Commerce	Activation/Placemaking	Access for Commerce	Vehicle Storage	Activation/Placemaking

Access for Commerce	Activation/Placemaking	Vehicle Storage
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 Trees / greenery / art	 Pedestrian crossing	 Electric vehicle parking	 Private vehicle parking	
 Public seating parklet	 Outdoor dining parklet	 Car share parking	 ADA-accessible parking	 Reserved space (municipal use)



Typical Blocks

Based on the curb hierarchy, each street type has a corresponding recommended distribution of curb use categories, (i.e. access for people, access for commerce, activation/placemaking, vehicle storage) displayed as pie chart ranges. **Figure 6** illustrates recommended distributions of curb uses along the street types (defined by the percent of space on the curb each curb use occupies) which fulfill the ranges under various contexts found throughout Boulder. The long-term goal is to increase activation of the curb. City staff should aim for the lower end of the vehicle storage percentage where appropriate and based on parking demand.

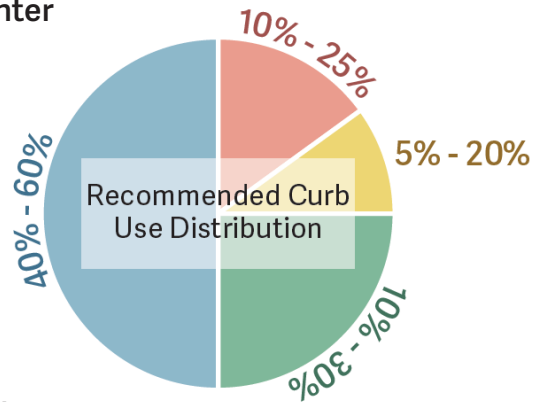
These typical blocks provide examples of curb distributions and interactions within various land uses throughout Boulder and are conceptual, not prescriptive. The example streets do not correspond with specific Boulder streets, nor do they propose curb uses in specific Boulder locations. Rather, they provide a visionary blueprint of curb use distributions that can inform placement of future curb uses while considering interactions between uses and street types.

For each street type, example contexts were selected which represent areas in Boulder and factors that may influence placement of curb uses, such as surrounding land uses or managed districts. The distribution of curbside designations along the typical block for each context is displayed as well as the overarching recommended ranges of curb uses for that street type.

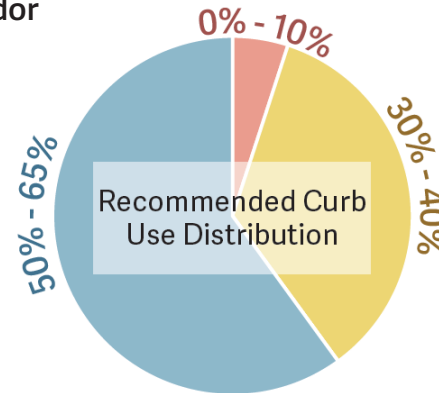
An average block size of roughly 400 feet was used for the typical blocks, though individual blocks in Boulder may be longer or shorter and may differ from the example blocks due to unique land uses, specific needs or requests from businesses, the curb designations on nearby blocks, and nearby transportation needs such as bus stops or bike lanes. In addition to the typical area guidance, city staff should consult the design standards for each curb use, including typical lengths, included in **Appendix D**.

Figure 6: Recommended Distribution of Curbside Uses

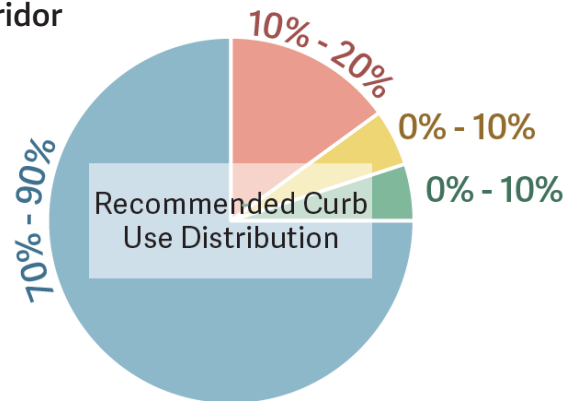
Commercial Center



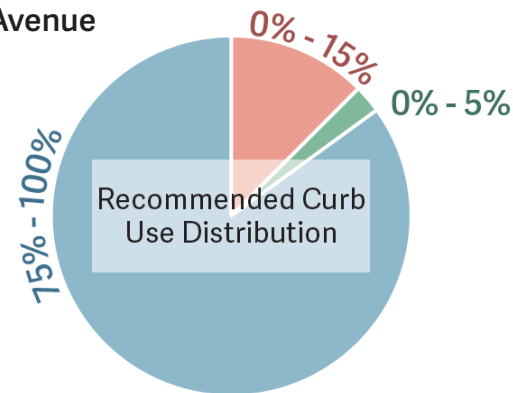
Industrial Corridor



Residential Corridor



Neighborhood Avenue



Access for People Access for Commerce Activation Vehicle Storage



Catalysts for Changes to the Curb

Previous sections of this Guidebook describe the vision for the future of the curb. Changes to curbside designation should be phased over time, to distribute costs and resources and assist in communication to the community of these changes. There are four primary catalysts that will potentially result in changes to curbside designation as shown in **Figure 7**: development, capital projects, proactive adjustments, and reactive adjustments.

This section provides guidance on when to:

1. Determine how curbside changes should be paired with infrastructure work related to **development**.
2. Determine how curbside changes should be paired with infrastructure work related to city **capital improvement projects**.
3. **Proactively** implement changes to curbside designations to reflect the curbside designations shown in the typical blocks; and
4. How to **respond** to community member requests to change the curb uses.

These are described in detail in the following sections.

Development

As new development and redevelopment occurs, there will be changes to how access to the curb is demanded. Changes in development also serve as a catalyst for making adjustments to the streetscape and public right of way given the potential investment and shifts to the pedestrian realm adjacent to the development. This Guidebook will serve as a framework for city staff when working with developers.

The online tool walks through each step of the process in making changes to the curb in association

with development. This process is also described as follows:

1. Identify the ratio of curbside uses in the existing conditions on the street(s) adjacent to the development.
2. Identify the typology of the street(s) adjacent to the development, per **Figure 4**.
3. Compare the existing conditions break down of curbside uses with the future pie chart associated with the typology, as shown in **Figure 6**.
4. By referring to the typical blocks associated with the typology, identify curbside uses that will move the existing conditions towards the future pie chart and accommodate the curbside demands generated by the new development.

Capital Projects

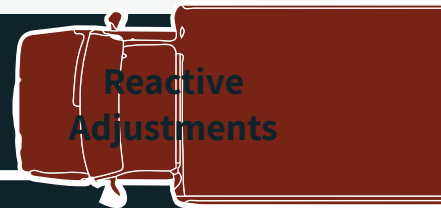
Capital projects include capital enhancements, capital maintenance, capital planning studies, or new facilities/infrastructure. Capital projects along the street or pedestrian realm (such as repaving, one to two-way conversion, sidewalk replacement, or geometric changes) can also serve as a catalyst for making changes to curbside designations. There are cost-efficiencies in making changes to curb uses by leveraging already scheduled modifications to curb, gutter, signage, and/or striping.

Capital projects should be coordinated with changes to curbside uses within the project extents. As a part of the scope of a capital project, recommendations to changes in curbside uses should be made per the Curbside Management Implementation Guidebook.

Proactive Changes

Proactive changes to the curb are changes that are initiated by city staff based on safety (observed crash patterns), poor compliance with space designations or regulations, or





With each development application that meets the threshold for a traffic study per the Design and Construction Standards, apply the Guidebook to make changes to curb uses adjacent to the development:

Modify curb designations based on how the development will change demand for the curb and achieve the future pie chart for the appropriate curb type in the typology

Includes capital enhancements, capital maintenance, capital planning studies, or new facilities/ infrastructure

Projects along the street or pedestrian realm, such as repaving, one to two-way conversion, sidewalk replacement, or geometric changes

Coordinate with already scheduled modifications to curb, gutter, signage, and/or striping

Incorporate changes to the curb per the Curbside Management Implementation Guidebook.

Apply curbside typology map and future curb use pie charts, and if one of the following are met on a block (per the data collection needs discussed in the Implementation section):

Safety concerns:
3 recorded curb-related crashes in 3 years

Resident complaints:
5 or more complaints about the same issue/location in 3 years

High rate of ticketing or noncompliance:
20 or more traffic citations from Parking Enforcement on a given block in 3 years

Parking and loading utilization:
Over (>85%) or under (<60%) capacity in a block/area

In response to requests for change to the curb, use the curb request response tool that is relevant to the curb use being requested.

Figure 7: Catalysts for Making Changes to the Curb

utilization with an observed mismatch in supply and demand of the curb. If any one of the thresholds identified in this section is met, the curbside typology map and typical area concepts should be applied to determine what changes to curbside designations are recommended. These three categories of performance measures are described further in this section:

Safety

The city should refer to documented crash history as a metric for safety that will result in an evaluation of changes to curbside designations.

If there are three or more curb-related recorded crashes within a three-year period on a block that were the result of curbside activity, curbside designations should be evaluated. This includes recorded crashes or near-misses within a one block area, on both sides of the street. To determine if crashes were the result of curbside activity, professional judgment should be applied based on the cause of the crash and directional movement of involved parties.

When reviewing crash data, city staff can look for patterns by filtering columns to search for applicable crashes:

- Harmful: parking motor vehicle
- Vehicle movement: Enter or leaving parked position, backing, parking, stopped in traffic
- Driver action: Impeded traffic, improper backing
- Qualitative: Officer notes

The city may also consider adding “curb-related” as a filter category in crash data to more clearly identify crashes as being related to curbside uses or activity.

Resident Complaints

The city should also refer to recorded complaints as a metric for safety that will result in an evaluation of changes to curbside designations.

If there are five or more complaints within a one-year period on a block that were the result of curbside activity, curbside designations should be evaluated. These complaints may be reported via Inquire Boulder or non-emergency dispatch. Complaints may be related to safety, utilization, or lack of convenience of curbside activity. To determine if complaints could be addressed with changes to curbside uses, professional judgment should be applied.

When reviewing complaints data, city staff can look for those related to:

- Illegally parked vehicles
- Bicycle or pedestrian close call
- Double-parked vehicles
- Requests for neighborhood parking permits
- TNC passenger pick-up/drop-off

Compliance/Citations

If there are 20 or more citations related to curbside activity on a block (inclusive of both sides of the street) within one year, curbside designations should be evaluated. To determine if citations were the result of curbside activity, professional judgment should be applied.

When reviewing citation data, city staff can look for those related to:

- Illegally parked vehicles
- Illegal pick-up/drop-off
- Illegal scooter/bike parking
- Double-parking

City staff should work closely with Parking Enforcement to ensure curbside violations are being documented consistently and comprehensively. Enforcement of curbside activity should include not only on-street parking, but all curb uses. The cut sheets in **Appendix F** provide specific guidance on enforcement for each curb use.



Utilization

Utilization refers to the performance of a specific curb use on a block or in a small area. Curb uses that are either overutilized or underutilized should be considered for changes based on the typical block for that curb type.

Many curb uses shown in the curb menu should not be evaluated based on utilization, and this section is not applicable. For example, accessible spaces are required or requested regardless of utilization. Parklets enhance livability and are not tied to utilization. The two curb uses that should be monitored based on utilization are on-street parking and loading.

Parking

Overutilized: When parking utilization within an area is over 85% capacity in a multi-hour period of peak demand that occurs multiple days per year, additional promotion of off-street parking availability and opportunities should be considered. Parking pricing should also be adjusted in response to overutilization, per City Manager Rule 2-2-11.B (22), Rule Establishing Performance-Based Parking Pricing:

- Tier 1: 85% or higher - Increase hourly parking meter rate by up to \$0.50 per hour.

Underutilized: When parking utilization within an area is under 60% capacity during the peak time for that land use (e.g., that tends to be 4 am on a weekday in residential areas and either midday or early evening for commercial land uses), changes to the curb should be considered in accordance with the typical blocks in **Appendix D**. An 'area' should be defined as a 2x3 block area.

Loading

Overutilized: If the Police Department consistently observes the double parking of delivery vehicles or passenger pick-up/drop-off activity, additional loading spaces should be considered. It is important to acknowledge that double parking of loading vehicles may occur even

if there are empty loading zones on a block. In this case, additional enforcement is needed, rather than additional loading zones. Loading zones may also be located in the wrong place and an analysis should be performed to determine if noncompliance of loading vehicles is an indication of overutilization of existing loading zones or loading zones that need to be relocated.

Underutilized: Each block face (that is, each block and each side of the street) should have at least one loading zone. If there is more than one loading zone on a block face, observations or camera data should be collected. As long as there are at least three loading activities in the peak hour, that loading zone should be maintained. If there are fewer than three loading activities in the peak hour, eliminating that loading zone should be considered, given that the existing loading zone(s) on that block face could accommodate all loading activity.

Evaluation

To proactively implement changes to curbside designations, the city needs to implement a data collection program to track data associated with safety, compliance, and utilization. This is described in further detail within the "Evaluation" section under Implementation.

Reactive Changes to the Curb

Prior to this plan, when landowners, residents, or businesses requested changes to the curb uses, the city lacked an objective and standardized method to respond to these requests. This Guidebook includes a decision-making flowchart for each curb use, compiled in **Appendix E**, which guides city staff to respond to curb use requests in a way that is consistent, data driven, and transparent.

When a city staff member receives a request for a curb use change, they should refer to the appropriate flowchart in **Appendix E** for the curbside use being requested. For some curb uses, there are 'deal breaker'



questions prior to the flowchart, which may dictate the feasibility of implementation. If it is determined that implementation is feasible, the flowchart questions that follow will guide city staff in determining if implementation is recommended. There are a series of questions for city staff to answer. City staff should sum the scores of the response to each question. The summed score will then fit within one of three ranges:

- **Highest score:** yes, the curbside request should be granted.
- **Middle range of score:** professional judgment should be applied to confirm that the curbside request should be granted.
- **Lowest score:** no, the curbside request should not be granted at that location; but city staff should work with the individual filing the request to identify other solutions such as a nearby location.

Alleys

Curbside management strategies in alleys aim to accomplish two goals:

1. Shift demand for appropriate curbside access from the streets to alleys

Alleys can provide access to activities and demands that are often otherwise performed at the curb, such as goods loading, passenger pick-up/drop-off, private vehicle short-term parking, and dining parklets. Given that there is limited space at the curb and a number of competing demands, the alley provides additional curbside in order to increase the efficiency, comfort, and convenience of these curbside activities.

2. Improve the functionality of alleys for more efficient use and activate alleys to provide bicycle/pedestrian circulation and economic vitality for adjacent businesses.

Often, garbage trucks, delivery vehicles, and passenger cars compete

for space in alleys. Narrow alley widths compound these challenges. Parking in alleys often blocks ingress and egress. Better management of trash and recycling receptacles, back alley parking, and loading areas in alleys can streamline alley functions and reduce blockage of alley ingress and egress. Designated alley loading areas, or better off-street loading areas for commercial sites can reduce conflicts in alleys.

Alleys also have the potential to dramatically expand the pedestrian and bicycle realm in cities, comprising up to 50% of the urban right-of-way. In Boulder, alleys improve circulation for bicyclists seeking more direct connections to destinations, outside of the one-way street network.

Cities like Fort Collins, Denver, Seattle, Chicago, San Francisco, and others have created activated alleys (sometimes called “living alleys” or “green alleys”) that open alleys to people walking, biking, and patronizing businesses. These public spaces establish comfortable, attractive areas for people to sit, explore, and appreciate art and nature in the center of a city.

Since alleys in Boulder are currently designated primarily for loading, this section of the Guidebook is focused on steps the City of Boulder can take to activate alleys.

Potential Activated Alleys

Boulder may wish to develop activated alleys downtown or in other areas of the city with significant bicycle and foot traffic. It is recommended that Boulder conduct an Alley Access Plan as a next step. This Plan should inventory alley space, comprehensively evaluate the potential for alley activation, document the steps for alleys with potential to be activated, and collaborate with adjacent property owners to make activated alleys a reality.

Some preliminary ideas for activation of alleys downtown are outlined in the following section:



Alleys with a lot of car parking and vehicle traffic entering and exiting may not be suitable for activation. For example, Lawry Lane between 9th Street and 11th Street (**Figure 9**) is edged primarily by parking. Unless business owners choose to replace their private parking with alley activation uses such as a seating area, this alley is not a good option for activation.

Alleys more likely to be suitable for activation are those with:

- Less or no back alley parking
- Windows and/or wall space that could host a mural, for visual interest
- Proper drainage
- Close proximity to popular retailers or restaurants
- Efficient pedestrian connections
- Spaces accessible to all ages and abilities

Figure 8 identifies a few preliminary alleys that may be suitable for

activation. All of the alleys bounded by Spruce Street, 14th Street, 15th Street, and Pearl Street could be suitable due to the interest of having an east-west and north-south through connection and possible interior “courtyard” within the block. The narrow north-south passage adjacent to Pedestrian Shops, pictured in **Figure 10** at right, shows potential due to it being a pedestrian-only space that does not provide car or truck access.

The east side of Morrison Alley between 11th Street and Broadway, pictured in **Figure 10** at left, already possesses a pedestrian-friendly paving treatment, adequate wall space for art, and visually interesting architectural features. Other possible alleys for activation include the alley between Spruce Street and Pearl Street by Barker Park, and the east and west sides of Lawry Lane between 11th St and Broadway.

This is a prime location due to its proximity to popular businesses like Rosetta Hall, Pearl Street Pub, and Lindsay Boulder Deli; additionally, with many individual dumpsters, there is significant opportunity for

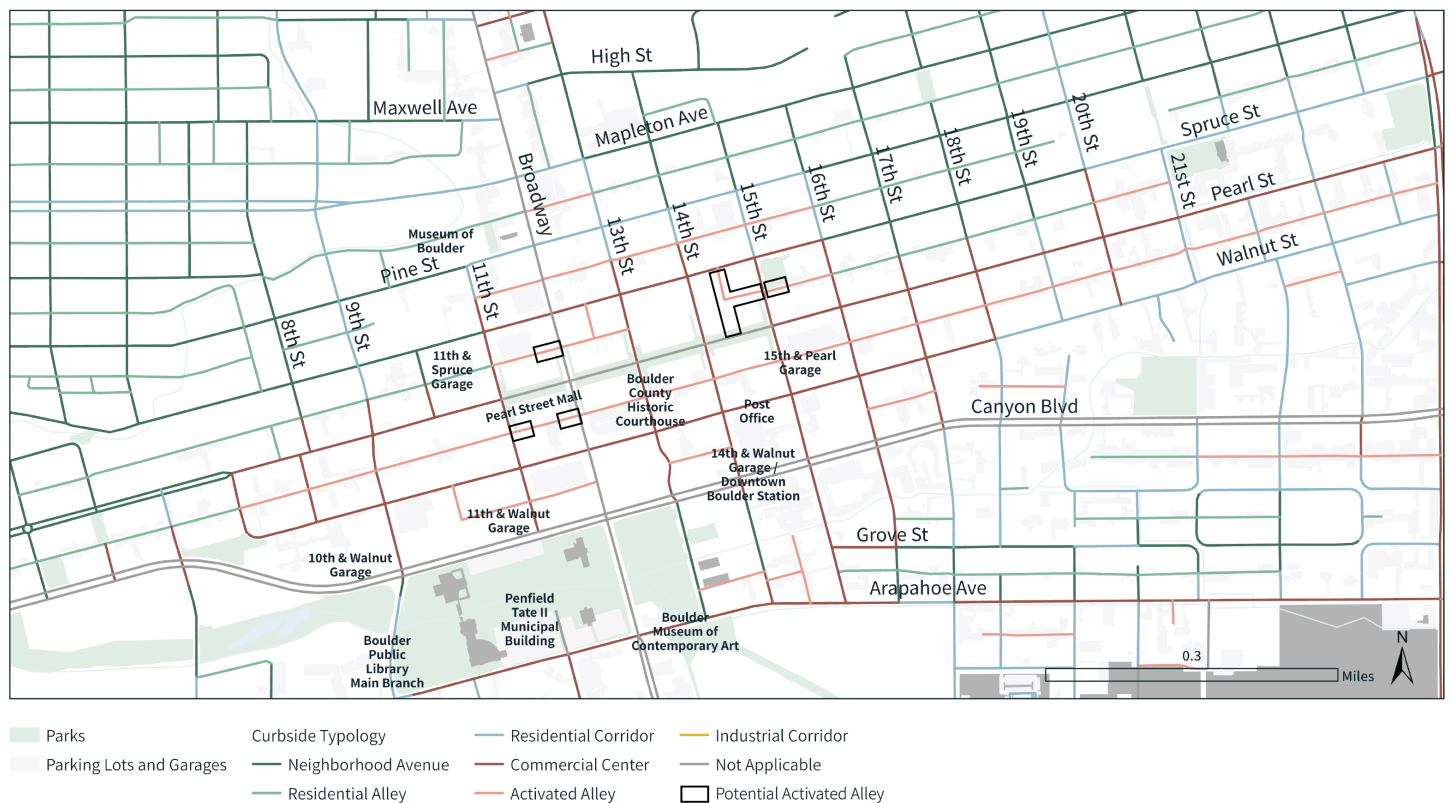


Figure 8: Potential Alleys Suitable for Activation



trash consolidation to reduce clutter and free up space in the alley.

While these alleys may be most primed at the moment, other alleys in Boulder could be activated by consolidating waste receptacles, updating paving treatments, and adding landscape to screen unsightly areas.

Implementation

It is recommended that Boulder

conduct an Alley Access Plan as a next step. In this plan, the city should begin by identifying alleys with potential for activation and/or that provide key pedestrian and bicycle connections. Once desirable alleys are identified, the city should understand waste storage, vehicle circulation, and parking demands within each alley.

With cooperation of adjacent business owners, the city can relocate loading zones and develop centralized,



Figure 9: Lawry Lane between 9th Street and 11th Street



Figure 10: Examples of Potential Activated Alleys



consolidated, and enclosed trash and recycling locations on each block. Consolidating trash and recycling dumpsters of several businesses in one storage area can more efficiently serve demand. Recycling compactors can also minimize needed space. Fewer dumpsters and more frequent pickup results in cleaner, more organized alleys.

Finally, at each site, the city can employ the following design strategies to transform the alley into a desirable destination:

- Paving treatments to signal pedestrian environment
- Wayfinding signage
- Lighting treatments through string lights & accent lights
- Planters & landscaping
- Murals & public art installations
- Patios & shade

Case Studies

This section outlines best practices in alley activation in jurisdictions (Fort Collins, Denver, Seattle, Chicago, and San Francisco) that have successful stories of using alleys to provide comfortable places to move people, provide access to businesses, and improve community vitality.

Fort Collins

The 2008 [Fort Collins Downtown Alleys Master Plan Report](#) identified potential alleys to create a pedestrian network of alleys and walkways, design recommendations, and implementation steps. The city has since constructed [12 activated alleys](#).

Denver

Two major recent developments downtown have included activated alleys: [Base Camp Market Station](#) and the [Dairy Block](#). [Downtown Denver Partnership's Alleyways Project](#) placed art installations in eight alleys off the 16th Street Mall.

Seattle

The city has installed activated alleys following their [Integrated Alley Handbook](#), which offers tools and inspiration for activated alleys, creates a typology of downtown alleys, outlines keys to successful alleys, and illustrates different scales of interventions.

Chicago

Chicago has an initiative called [Make Way for People](#) that creates four types of pedestrianized spaces: People Spots (parklets at the curb), People Streets (shared streets), People Plazas (plazas in the roadway), and People Alleys (activated alleys). Property owners can apply for a permit to activate alleys to support placemaking and economic development. The [Chicago Green Alley Handbook](#) provides techniques for designing green alleys, best management practices, and example applications.

San Francisco

The city's [Living Alleys](#) include special paving, traffic calming, lighting, seating, and greening. They are installed by community groups, private developers, and the city – not generally by property owners. In the [Market and Octavia](#) neighborhood, living alleys were designed to create a secondary pedestrian network.

The Market and Octavia project developed an extremely useful reference – the [Living Alleys Implementation Toolkit](#). The toolkit includes a section on design considerations, which outlines six factors to evaluate prior to designing living alley, a section on design tools including landscaping, lighting, traffic calming, public art, and more, as well as steps for community organizers and the city to take to implement living alleys.

Additional Areas of Managed Parking

The City of Boulder currently has data-driven processes to adjust parking pricing through the Access Management and Parking Strategy (AMPS) and include new



Priced & Time-Restricted Parking Model

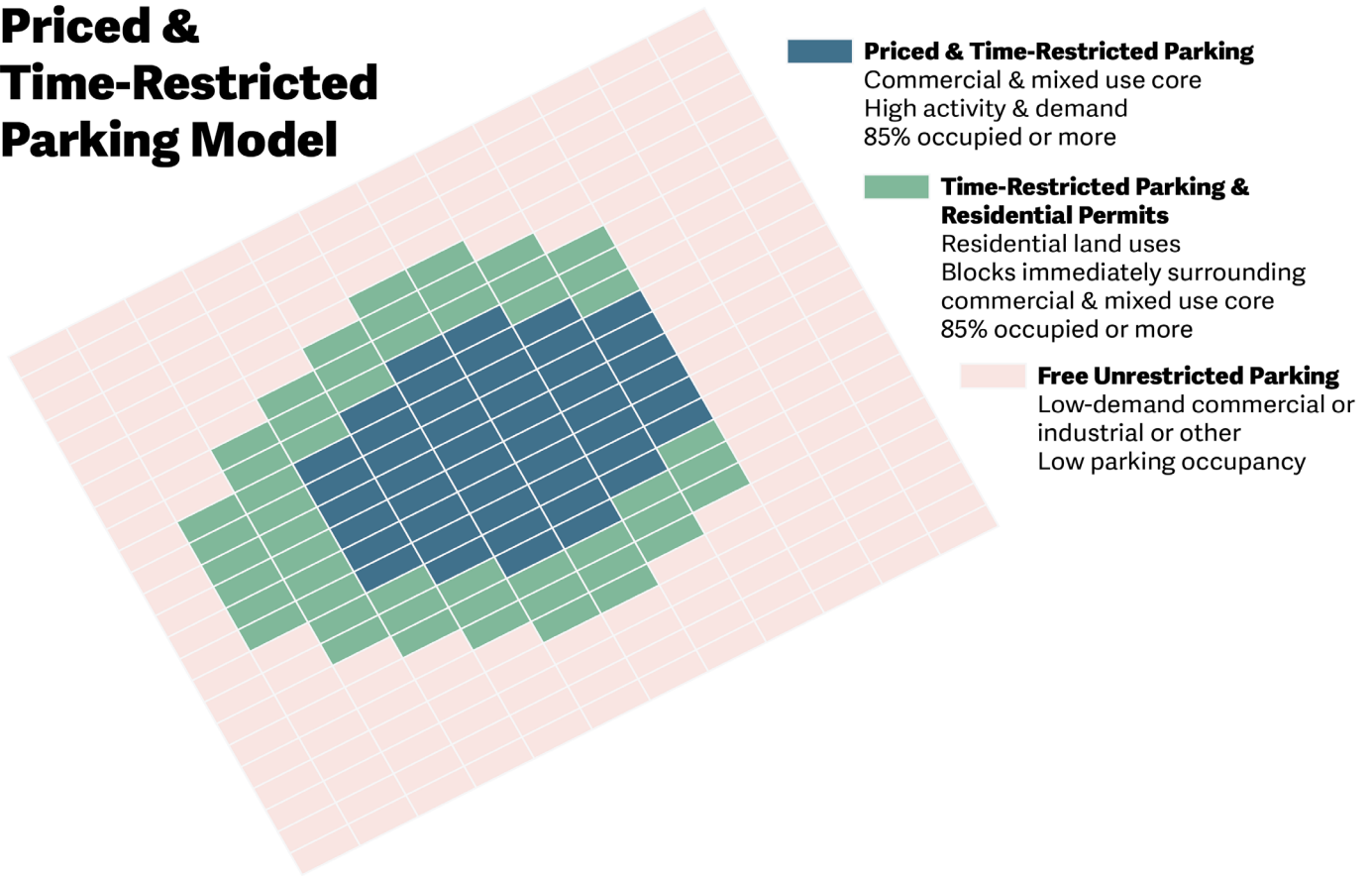


Figure 11: Priced & Time-Restricted Parking Model

blocks in the Residential Access Management Program (RAMP).

However, the city lacks a process to determine when to add parking time-restrictions or to price parking on blocks. Given the city's interest in implementing curbside management strategies through the Curbside Management Implementation Guidebook, which may replace existing on-street parking with alternate curb uses, the city needs a framework to implement priced and time-restricted parking in new areas.

The white paper in **Appendix J** establishes a process for the city to implement changes to parking pricing and time restrictions alongside existing processes, based on case studies and best practices.

Figure 11 illustrates the model for implementing priced and time-

restricted parking in new areas of the city. Paid, time-restricted parking should be implemented when and where parking demand is at, near, or exceeding capacity in the downtown core and in high-activity commercial areas. Time-restricted free parking should be implemented in any residential blocks immediately surrounding these commercial and mixed-use cores within a two-to-three block radius.

Free unrestricted parking can remain in residential blocks outside of this radius and in low-demand commercial, industrial, or other areas adjacent to the commercial core. RAMP also has the option to implement paid parking- permit excluded, or paid time limited parking- permit excluded, in neighborhoods with high demand.

See **Appendix J** for the full details on this process.



Managing the Curb at Events and During Construction

The city currently has a number of activities that result in short-term changes to curbside designations. This may include events or construction where there are street closures or temporary changes curbside designations.

City staff and stakeholders currently meet bi-weekly to discuss street closures, changes in travel patterns, and the implications of curbside designations at upcoming events. Those meetings should continue in order to plan for temporary changes to curbside designations and implications on neighboring areas.

This group can apply the Guidebook at a high level in order to understand the types of curbside designations that need to be considered on various different street types in the typology. The Construction Form (located in **Appendix E**) can be applied to understand the key curbside uses that need to be reallocated during street closures.

Construction may temporarily shift curbside availability as well as create additional demands for curbside uses. The Guidebook includes a Construction Form located in **Appendix E** to be completed by construction leads in coordination with city staff. A separate form should be completed to correspond to each phase of the construction effort.

The form provides the structure for construction contractors to reallocate key curbside uses that may be impacted by construction. It also provides accountability to complete an Employee Parking Plan if there is expected to be significant additional pressure on on-street parking due to construction workers parking in the area.

IMPLEMENTATION

The recommendations in this Guidebook will be implemented in a phased approach, with considerations for area-wide impacts. Where appropriate, stakeholders such as Special Commissions and various city departments will be engaged as a part of the process of making changes to the curbside in accordance with this Guidebook.

In order to create successful implementation of the future vision for the curb, the following updates should be made, as described in greater detail in this section:

- **Update to Boulder Revised Code**
- **Pilot Project: Flexible Loading Zone** – Implementation of the Flexible Loading Zone, per results from the Pilot Project
- **Cut sheets overview** – Guidance on implementation of specific curbside uses, per documentation in the cut sheets in **Appendix F**
- **Phasing** – Phasing of changes to the curb over time, with high priority areas and curbside uses implemented first
- **Evaluation** – Evaluation of data over time to assess the success of new curbside uses and proactive changes to existing curbside uses
- **Cost estimates** – Resources required to implement changes to the curb
- **Communication to the community** – Communication to the public and stakeholders about new curbside uses and reallocation of uses from on-street parking
- **Monetization of curb** – Monetization of curbside uses other than parking
- **Future technologies** – Potential opportunities to incorporate technology to more efficiently manage the curb





Update to Boulder Revised Code

To ensure consistency with this guidebook, there are a number of recommended changes to the Boulder Revised Code. This section identifies the needed updates to the Boulder Revised Code, that are being presented to City Council following the completion of this guidebook. The language in this section is draft and will be going through City Council and public process following the completion of the guidebook. The language will be formalized and incorporated into the Boulder Revised Code in 2024.

The categories of language that have been modified in the Boulder Revised Code consist of:

- Modification of curbside uses within the control of City Manager (2-2-11)
- Referencing and defining the Guidebook (2-2-11 (b))
- Modification of the City Manager Rule establishing performance-based parking pricing (2-2-11)
- Guidance for developers, documenting the ability for the city to reallocate curbside uses from on-street parking (9-9-6)

Pilot Project: Flexible Loading Zones

From September to December 2022, the City of Boulder piloted several Flexible Loading Zones in two GIDs (Downtown and University Hill). These zones replaced existing loading zones with new spaces that could accommodate a wider range of uses, including goods delivery, passenger pick-up/drop-off, curbside pick-up, and use by Transportation Network Companies such as Uber and Lyft (**Figure 12** shows the pilot app and signage). Each zone had a 10-minute time limit and was free to users.

A detailed evaluation of the pilot program was performed as a part of this project (**Appendix I**). This evaluation analyzed the following

performance measures both before and during the pilot in order to assess the success of the pilot program: crashes, dwell time, usage, citations, and community complaints.

This analysis revealed that the Flexible Loading Zones were successful in reducing noncompliant behavior and achieving higher productivity of curbside space in parts of the city with high demand for the curb.

Recommendation

Based on this analysis, this Guidebook recommends that Flexible Loading Zones are adopted into the Boulder Revised Code (per language in the Updates to the Boulder Revised Code section of this Guidebook) and implemented in strategic locations (per the Typical Blocks section) where the surrounding land use and travel patterns demand high-turnover curb uses.

All loading spaces moving forward should be Flexible Loading Zones, unless significant demand for commercial loading is present on a block. Determining the appropriate number of loading spaces on a block can be challenging.

In order to create successful implementation of Flexible Loading Zones, the city should work with TNC providers per the “Communication to the Community” section of the Guidebook. This coordination should include education about the new curb use as well as geofencing of the specific Flexible Loading Zone locations.

Geofencing means that any user who requests a TNC ride within close vicinity of a Flexible Loading Zone will be directed to meet their driver at that zone. The TNC driver will also be instructed to wait for and load their passenger in that Flexible Loading Zone.

Refer to **Appendix I** for details of how Flexible Loading Zones should be implemented.

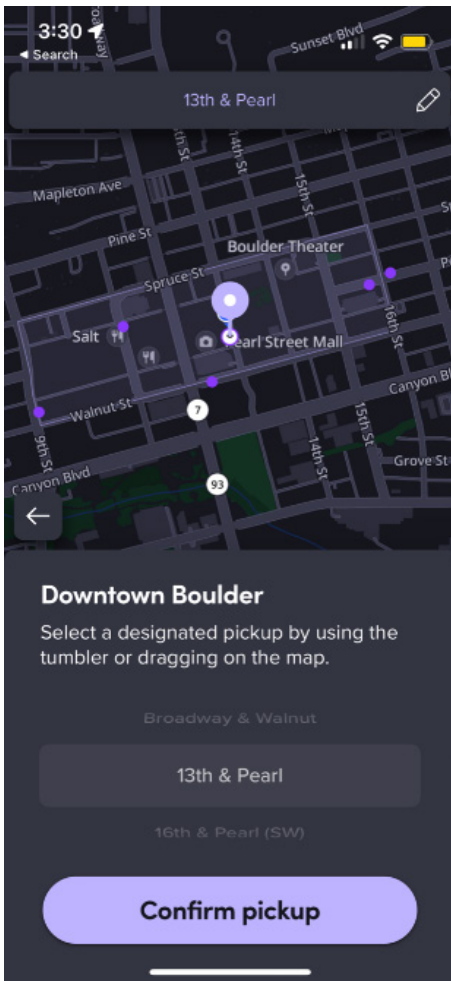


Figure 12: FLZ Pilot Sign & App



Cut Sheets Overview

The cut sheets in **Appendix F** provide guidance for implementation for each curb use identified in the curb menu (**Figure 1**). Each cut sheet includes:

- A description of the curb use
- Enforcement considerations
- Pricing considerations
- Recommended time restrictions
- Planning-level cost estimate
- Staff resources for implementation
- Design considerations

City staff can use the cut sheets as guidance but should reference the appropriate design guidelines for design criteria.

Phasing

Changes to curbside designations should be phased over time. Phasing changes to curbside designations will distribute the cost and resources associated with curbside projects and manage communication to the community about changes to curbside designations.

All changes to curbside designations based on development, capital projects, and responses to curb change requests should be implemented, due to the cost and resource efficiencies associated with these changes. Proactive changes to curbside designations should be phased over time, due to limited city resources. As proactive changes to curbside designations are determined, the city should create a list of curbside projects for implementation.

Every year, the city should fund the implementation of at least 10 to 20 changes to the curbside designations of a block face. This number enables the city to dedicate the resources required to implement projects consistently and of high quality.

Changes to the curb should be prioritized as follows, in the order listed.

Proactive, as funding is available:

1. Prioritize reassessing full blocks on Commercial Centers in the typology first.
 - Within Commercial Centers, blocks where Flexible Loading Zones, passenger loading zones, goods loading zones, and micromobility parking are a likely solution should be considered first. These blocks should then continue to be ranked based on how many of the criteria (per the Reactive Changes to the Curb section) are met and by how much. The criteria are listed in priority order below.
 - crash data
 - utilization
 - compliance
 - resident complaints
 - Other Commercial Center blocks that do not need additional loading zones should be considered next, applying the same phasing as listed above.
2. Residential corridors, industrial corridors, and neighborhood avenues should be assessed next, following the same prioritization as identified for Commercial Centers.

Reactive, as circumstances arise:

- Responding to requests
- Concurrent with capital projects
- Assessed as part of redevelopment

When a change is made to a space on a curb, changes to the entire block and adjacent blocks should also be evaluated.



Evaluation

Data collection and monitoring is important to manage curbside designations, determine priority blocks/areas in need of curbside changes, and track the success of curbside changes over time.

It will be critical for the city to continue to update the shapefile/database of existing curb inventory alongside curb changes, to build on the work of this plan and prevent any near-term requirement to re-inventory all curb space by tracking changes over time.

In addition to collecting data to determine changes to the curb, the city should develop a monitoring program to track the success of curb use changes and determine when additional changes to curbside

designations should be considered.

The city should collect data on the metrics necessary to determine if proactive changes to curbside designations are appropriate, as shown in proactive changes section of this document. Categories of data that need to be collected and regularly synthesized are safety, community complaints, compliance, and utilization.

This data should be collected on an ongoing basis to:

1. Determine future changes to curbside designations; and
2. Track before and after data for areas that have already experienced changes to curbside designations. Given limited resources in the city,

Table 2: Data Collection Program

Performance Measure	Data to Collect	Who Will Collect the Data	How Often Data Should be Collected and Synthesized
Safety	Crash history	Police Department	Collected: ongoing Synthesized: annually or with other efforts
Resident Complaints	Recorded complaints	Public Works Department	Collected: ongoing Synthesized: annually or with other efforts
Compliance	Citations	Community Vitality (collect); Engineering and Traffic & Transportation (analyze); Parking Enforcement	Collected: ongoing Synthesized: annually or with other efforts
Utilization	Parking utilization	Community Vitality (collect); Engineering and Traffic & Transportation (analyze);	Collected: 2-3 times per year for a multi-hour period of peak demand that occurs multiple days per year (e.g., farmers market) Synthesized: following data collection
	Loading utilization	Police Department; Engineering; Traffic & Transportation	Collected: citations collected on an ongoing basis; supplemented by observations during peak demand periods 2-3 times per year Synthesized: following data collection



this is a lower priority and should only be completed if resources are available.

2. Increase the intuitiveness and recognition of new curbside uses such as parklets and Flexible Loading Zones

This data will help the city better understand curbside utilization and behavior associated with new curbside designations (such as flexible loading zones) and curb use ratios and configurations. This program will also require city staff time to synthesis the data collected and field observations. Outcomes will impact curbside regulations and phasing.

Each of these goals is described further in this section.

Concerns about Reallocating On-Street Parking

With the vision of the Curbside Management Implementation Guidebook to increase activation, placemaking, and community vitality, there will be a reallocation of curbside uses from on-street parking to other curbside uses moving forward. The community and businesses may be concerned about the implications of reduced parking. It will be important to educate users as to the benefits of this reallocation and the presence and underutilization of parking in off-street parking structures and lots.

Cost Estimates

Understanding the cost and resources required to assess and implement changes to the curb is important to ensure that these improvements can be appropriately budgeted in the city's Capital Improvement Program (CIP) as well as staff time. **Table 3** identifies the cost for constructing various curbside uses as well as staff time for evaluating needed changes to the curb.

Concurrent to this effort, Community

Table 3: Cost of Implementation

	Implementation Item	Cost
Of implementing a change in the curb:	Range from \$300 to \$10,000, as identified in cut sheets (Appendix F)	
Of assessing need for changes to the curb:	Reactive	Time savings
	Development	8 hours of staff time as a part of development review process
	Capital Projects	Minimal addition to project
	Proactive	Minimum of 80 hours/year of Transportation & Mobility staff time

Communication to the Community

Communicating changes in curbside uses to the community, both the public and stakeholders, is important in order to:

1. Address concerns about reallocating on-street parking to other curbside uses

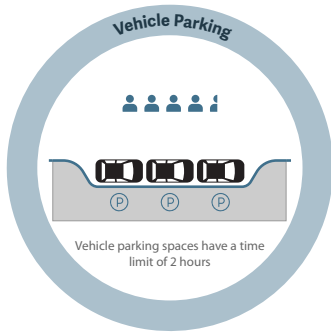
Vitality's AMPS Marketing Services are developing materials to communicate recent changes to on-street parking payment mechanisms and pricing. Outcomes of the curbside management planning process should include the talking points to share more broadly about the range of curbside uses for stakeholders.



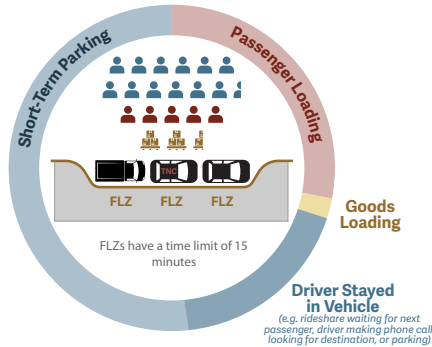
Over the course of 1 hour, Flexible Loading Zones supported 4x more users and 2.5x more Goods Loading opportunities.



Traditional vehicle parking supports a **small** number of users for **long** periods of time.



Flexible Loading Zones support a **variety** of uses that encourage **high turnover** and allow access for **more users** over time.



A Flexible Loading Zone (FLZ) accommodates drivers who need curb access for a short period, normally less than fifteen minutes. This short time window is intended to promote high turnover and allow for brief activities. By leaving this space open to a range of uses, the curb space can be used more productively as demands change throughout the day and week. In this example, users per hour was determined using Boulder 2018 Average Vehicle Occupancy and 2023 Boulder Curbside Management: Pilot Project Evaluation (Oct - Dec 2022).

Figure 13: Value of High-Turnover Curbside Spaces

Flexible Loading Zone

A Flexible Loading Zone (FLZ) accommodates drivers who need curb access for a short period, normally less than fifteen minutes.



This space is open for a variety of users with short-term needs, such as ride-share drivers and delivery vehicles.

The short time window promotes high turnover, which increases availability for other users.

The curb space can be used more productively than those with only one use allowed as demands change throughout the day and week.

This space supports nearby retail by providing a location to easily pick up food or deliver goods and passengers.

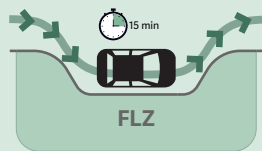
How Should I Use It?

1 Find a spot



Look for signage designating FLZ spaces.

2 Pull in



Pull in and stay for up to 15 minutes for free by starting a session at a pay station or on the ParkMobile app.

3 Utilize



Residents and Visitors: Grab a cup of coffee or pick up your takeout.



Rideshare Drivers: Drop off passengers or wait for your next ride assignment.



Delivery Drivers: Unload goods without blocking other vehicles.

Figure 14: Communicating Flexible Loading Zones to the Public

Talking points for how reallocation of curbside uses from parking can improve the user experience are below:

- With more designated parking zones like Flexible Loading Zones and Loading Zones, drivers are directed to specific zones based on their activities. This improves safety for all modes and reduced greenhouse gas emissions by reducing cruising for a space.
- Creates more activated and vital streets, with more 'activation for people' uses like parklets, bike and scooter parking, and bus stop.
- Parking in garages makes it easier to find a spot and can be cheaper than parking on the street. Garages also reduce the need to cruise to find a spot, resulting in less congestion of vehicles and a positive environmental impact.

Figure 13 is an infographic to convey the value of reallocating curbspace from on-street parking to other uses, such as a Flexible Loading Zone. This graphic conveys the higher number of 'events' and access for people that occurs in a curbside space with a shorter time limit. This graphic can also be used on the City's website and material to communicate the new Curbside Management Guidebook.

Increase Intuitiveness of New Curbside Uses

It can be challenging for the community to understand how to use new curbside uses. The Guidebook recommends three new curbside uses that did not exist prior to this effort—Flexible Loading Zones, public seating parklets, and car share. Since car share currently exists off-street, additional education is not necessary. This section provides content for the City of Boulder to use when educating the community and stakeholders on the value and use of Flexible Loading Zones and parklets for public seating.

Flexible Loading Zones

Use **Table 4** to help you communicate to the public about Flexible Loading Zones. The graphic shown in **Figure 14**



conveys how to use a Flexible Loading Zone to a member of the public. This graphic can be included on the City's website or distributed to businesses.

Use **Table 5** to help you communicate to Transportation Network Companies (TNCs) such as Uber and Lyft about Flexible Loading Zones. It is important that TNC companies and drivers are aware of this new curb use and guidance to update the geofencing on the back-end to reference the designated zones for both drivers and passengers to wait and meet.

Public Seating Parklet

Use **Table 6** to help you communicate with the public about parklets used for public seating.

Communication Mediums

Beyond framing the messaging around the audience, it is important to distribute the messaging of curb use and changes through appropriate mediums. Some mediums for communication include the items in **Table 7**.

The city can also leverage their existing connections with the following organizations by asking these partners to distribute information on curb uses and changes to their clients and patrons:

- Boulder Chamber
- Boulder Transportation Connections
- Downtown Boulder Partnership
- University of Colorado, Boulder
- University Hill Commercial Area Management Commission
- Boulder Junction Access District
- Downtown Management Commission

Future Considerations

The curb is continuing to evolve into the future and the City of Boulder should update how the curb is regulated, managed, and operates

Table 4: Flexible Loading Zone Communication to the Public

Why Flex Zones?	Allows for strategic curbside spaces in high demand locations to be used more productively and have higher turnover as demands (i.e., commercial loading, passenger pick-up/drop-off, private vehicle loading) change throughout the day and week. This means businesses will see more users accessing the space in less time and it will be easier for customers to find a curbside space for short activities at the curb.
Things to Know about Flex Zones	Intended for a range of vehicles Use for a short period of 15 minutes or less Free
How you can use Flex Zones	Commercial or private vehicle loading goods Private vehicle passenger pick-up/drop-off Transportation Network Company (TNC) passenger pick-up/drop-off Curbside pick-up (e.g. take-out dinner or online order) Quick phone call or text message

Table 5: Flexible Loading Zone Communication to TNCs

Why Flex Zones?	Helps TNCs have a designated pick-up/drop-off area to improve the comfort, intuitiveness, and efficiency of ride share pick-up/drop-off for both drivers and passengers.
Things to Know about Flex Zones	Located primarily at the beginning or end of a block Located near desired destinations like restaurants, venues, work spaces, etc. Use for a short period of 15 minutes or less Free
How you can use Flex Zones	Geofence the location of Flexible Loading Zones on the back-end in order to make it clear for both drivers and passengers where to meet Wait for TNC passengers or for the next booking Passenger pick-up/drop-off

Table 6: Public Seating Parklet Communication to the Public

Why Parklets?	Provide on-street public seating areas to expand opportunities for activation, eyes on the street, and places to enjoy Boulder
Things to know about Parklets	They are for the public and maintained by the city or a business sponsor but should be cared for by its users
How you can use Parklets	Public seating Gathering places Enjoy a cup of coffee or take-out from an adjacent business



Table 7: Communication Mediums

Stakeholders	Examples	Communication Medium
City of Boulder	Communication and Engagement Community Vitality Transportation and Mobility	Community newsletter Local news channel Local radio channel City social media Online forums such as Nextdoor
Hotels	Boulderado St Julien The Bradley Boulder Inn Limelight Hotel (upcoming)	Flyers in elevators Concierge desks Hotel website Billboards
Employers	Google CU Boulder Boulder Community Health Ball Aerospace Lockheed Martin Twitter	Flyers in elevators Employee onboarding materials Bulletin boards Email Online forums
Events	Farmers' Market Bolder Boulder CU Boulder athletic events, graduation, move-in day Boulder Creek Festival Shakespeare Festival Band on the Bricks	Event website Sent with/on event ticket Social media Billboards
Key Destinations	Pearl Street 29th Street Mall CU Boulder (sports, theater, move-in day) Boulder Theater and Fox Theater Public Library Restaurants	Flyers in elevators Bulletin boards Sent with/on event ticket Outside posters

as these changes evolve. Three areas in particular that should be monitored in the short-term, that are described in this section, are:

- Implications to maintenance needs on temporary changes to the curb
- New technologies for managing or communicating about the curb
- Charging for curbside uses other than on-street parking

Maintenance

In the future, the city may wish to institute seasonal or temporary parking restrictions related to maintenance for street sweeping and snow and ice removal. Parking signage updates related to maintenance schedules are outside of the immediate influence of this Guidebook, since they will be dependent upon departmental decisions and maintenance staffing.

However, with updates to maintenance programs, parking signage and curbside use signs should be updated in concert. The City should continue to evaluate the need and benefits of instituting changes to the curb for maintenance needs and make updates to the Guidebook accordingly.

New Technologies

As technology changes, there will be changes in demand for the curb and tools available to manage the curb to better match supply and demand and influence travel behavior. Boulder should leverage the wealth of data being collected through the performance-based pricing effort to inform areas of the curb that can be reallocated from vehicle parking. This data can be used to understand demands for the curb in order to ensure that supply and demand are aligned.

New and emerging mobility choices such as ride-hailing, car sharing, electric vehicles, mobility hubs,



Table 8: Advantages and Disadvantages of Pricing Curb Uses

Use	Advantages of pricing	Disadvantages of pricing
Private vehicle parking (including ADA spaces)	<p>Earn public revenue from individuals storing their private vehicles in the public ROW</p> <p>Help fund enforcement, signage & striping, program administration, streetscape enhancements, pedestrian & bicycle infrastructure, transit lanes</p> <p>Pricing can help drivers find spots by reducing parking occupancy in high demand areas</p> <p>Reduce congestion & encourage use of transit and active transportation</p> <p>Reduce space needed for parking and increase ROW available for other curbside uses, pedestrian & bicycle infrastructure, transit lanes</p> <p>Use may be contrary to city goals around safety, equity, sustainability, or others stated in planning documents*</p>	<p>Regressive to people with lower incomes (however, these users already subsidize free parking, whether or not they use it)</p>
Private employer shuttle or valet spaces	<p>Use may be contrary to city goals around safety, equity, sustainability, or others stated in planning documents</p> <p>Earn public revenue from free private use of public ROW</p>	<p>Cost of program administration</p>
Outdoor dining parklet	<p>Earn public revenue from free private use of public ROW</p> <p>Cover the cost of program administration and some or all lost meter revenue from removed parking spaces</p>	<p>Cost of program administration</p>
Car share parking	<p>Earn public revenue from free private use of public ROW</p> <p>Cover the cost of program administration and some or all lost meter revenue from removed parking spaces</p>	<p>Supportive of city goals around safety, equity, sustainability, or others stated in planning documents</p> <p>May make it more cost prohibitive to operate these companies, which perform a quasi-public service</p> <p>May pass on some or all of the cost to carshare users</p>
EV parking	<p>Earn public revenue from individuals storing their private vehicles in the public ROW, with a similar rationale to pricing parking for gas-powered vehicles</p>	<p>A public use supportive of city goals around safety, equity, sustainability, or others stated in planning documents</p> <p>Making electric vehicle ownership more affordable supports the transition to electric vehicles</p>
Passenger loading	<p>Earn public revenue from free private use of public ROW</p> <p>Safety benefits of geofencing where TNCs may load</p> <p>Proactive preparation for autonomous vehicles, which will likely compete for designated passenger loading areas</p> <p>Support the costs of enforcement, regulation of TNC licensing, installation of passenger loading zones</p>	<p>Also collects revenue from private passenger vehicle loading, which is not a business enterprise</p> <p>May penalize ridesharing, which supports city goals</p> <p>May incentivize unintended behavior like double parking</p> <p>May pass fees on to riders</p>
Goods loading	<p>Earn public revenue from free private use of public ROW</p> <p>Safety benefits of regulating when & where heavy trucks interact with vulnerable road users</p> <p>Equity benefits of regulating when & where heavy trucks idle in neighborhoods</p> <p>Interactive maps & booking systems can make it easier for delivery drivers to find spots and stay on schedule</p> <p>May help delivery companies reduce parking fines from double parking</p> <p>Can incentivize loading in less congested areas or during lower demand times of day</p>	<p>May penalize delivery vehicles, which are critical to the city economy</p> <p>May incentivize unintended behavior like double parking</p> <p>May pass fees on to the business receiving deliveries</p> <p>Administrative burden associated with implementation and technological requirements</p>
Bike and scooter parking	<p>Fees on micromobility companies can support the cost of installation (there would be no price for the public)</p>	<p>A public use supportive of city goals around safety, equity, sustainability, or others stated in planning documents</p>
Public seating parklet	<p>Funding for this may come from the business community (there would be no price for the public)</p>	<p>A public use supportive of city goals around safety, equity, sustainability, or others stated in planning documents</p>



and autonomous and connected vehicles may shift demand for curb use. As demand and resources allow, the City of Boulder can proactively prepare for these shifting demands by incorporating flex zones, car sharing spaces, electric vehicle charging spaces, and other infrastructure as identified in the curb menu and hierarchy (**Figure 1** and **Figure 5**) and the cut sheets in **Appendix F**.

Technology to more efficiently manage curb use also continues to evolve. For example, dynamic curbside management is the data-driven understanding, allocation, and operation of the curb across space and time to optimally serve curb uses and users as determined by community values. The time (i.e., the duration or limit over the course of a day), space (i.e., the amount of linear space allocated) and regulation (i.e., the price or other terms of its use) can all be dynamic in pursuit of the optimal use.

Garage sensors and variable message signage with real-time occupancy will be available beginning October 1, 2023. These sensors could include on-street parking as well, to expand the amount of available parking data and include occupancy information in an app. Columbus, Ohio has a great example of applying sensors to on-street parking spaces. Curbside management vendors and apps also have developed new ways of communicating and enforcing curb regulations and collecting and managing curb use allocation data.

For more information on future technology in curbside management, see the Future Technologies Memo in **Appendix G**. The city should review the Future Technologies memo developed and consider opportunities to deploy new technologies. Boulder should continue to learn about curbside management tools, technologies, and strategies from communities around the world to move the city towards its goals to more effectively and efficiently manage the curb.

Monetization of the Curb

Traditionally, municipalities have priced curbside access mostly through charging for on-street parking. Cities have also begun to charge for goods loading, passenger loading, outdoor dining parklets, food truck parking, and other uses, but these pricing schemes are not as ubiquitous as parking pricing.

To move Boulder towards its goals, the Curbside Management Implementation Guidebook recommends conversion of some paid on-street parking to other uses, such as commercial and passenger loading, parklets, or car share parking. Boulder and other cities may fear the revenue impacts of shifting from paid parking, which supports essential public services. The advantages of pricing commercial loading zones, passenger loading zones, car share parking, and/or electric vehicle parking include:

- Replacing lost meter revenue.
- Meeting additional city goals, which on-street parking may conflict with or does not directly contribute to.
- Incentivizing or disincentivizing demand for the use through price signals.
- Effectively valuing public right-of-way.

Table 8 explores the advantages and disadvantages of pricing various curb uses.

Appendix H explores whether monetizing curbside uses other than parking could allow jurisdictions like Boulder to value the curbside more efficiently by moving free use of the curbside for demands other than parking, to static or dynamic pricing of the curbside for uses such as loading, passenger pick-up/drop-off. While this section on monetization of the curbside explores the state of the practice of charging for loading to present information and options for Boulder, pricing goods and passenger loading is not a recommendation at this time. However, it is recommended that



Boulder offer car share company(s) the opportunity to offer car share spaces on-street in exchange for an annual permit fee. It is also recommended that if Boulder chooses to offer on-street EV charging, the city price charging or parking, but not both. EV charging parking spaces support Boulder's 2020 GoEV City resolution that established a community-wide vehicle electric vehicle adoption goal of 29,300 registered electric vehicles by 2030.

CONCLUSION

Demand for access to the curbside and technology to manage the curbside have been evolving quickly, with new demand for uses such as dining parklets, curbside pick-up, passenger loading, and on-street EV parking. This Guidebook develops a vision and framework to shift how the curbside is managed, both in the GIDs but also citywide, in order to move the city towards its goals for safety, economic vitality, and climate change. The Guidebook develops and describes the process behind the framework, which is backed by data, research, community input and best practices. This will allow the city to more systematically reallocate curbside uses in a way that is defensible and objective.

APPENDICES

Appendix A: Existing Conditions Memo

Appendix B: Community Outreach Summary

Appendix C: Best Practices Memo

Appendix D: Future Pie Charts and Example Blocks

Appendix E: Flowcharts for Reactive Change, by Curb Type

Appendix F: Cut Sheets

Appendix G: Future Technologies Memo

Appendix H: Monetization of the Curb

Appendix I: Pilot Projects Evaluation

Appendix J: Managing Parking with GIDs White Paper



