

On-Street Parking and Curb Management Policy



DRAFT
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OVERVIEW

The curb is a limited public resource and demand for access is growing. Essential to the economic vitality of various business districts across the city, traditionally, the curb use has been limited to customers and visitors through on-street parking and deliveries by providing areas to load and unload freight. In recent years, curbside pickup, dining, and e-commerce delivery has increased the need to allocate space at the curb in a sufficient and equitable manner. Managing the curb by addressing signage, markings, timing, usage, access, and cost is important to incentivize or disincentivize behavior at the curb to meet needs of all users.

On April 28, 2021, the Dallas City Council unanimously adopted the Dallas Strategic Mobility Plan. The plan represents a bold new way of thinking about the city's transportation challenges and creates a framework for investing and responding to problems in a way that best achieves the city's broader goals.

One of the policy recommendations contained in the plan is to "Proactively Manage the City's Curbside Assets." The purpose of this policy document is to further that recommendation and bring order to the city's parking management system, with the intended outcomes of:

- Supporting business districts by making it easier for customers to find an available parking space.
- Reducing congestion and conflicts in travel lanes by allocating adequate space and time for a wide range of users wanting access to the curb.
- Providing consistency in the application of curb lane management strategies.

Goals & Objectives

The City of Dallas On-Street Parking and Curb Management Policy supports the six Driving Principles in the Dallas Strategic Mobility Plan. The specific recommendations in this document are also intended to advance the more specific objectives outlined on the next page.

Driving Principles

-  **Safety** | Improve safety for all modes of transportation.
-  **Environmental Sustainability** | Reduce vehicle miles traveled and provide a variety of travel options.
-  **Equity** | Provide safe, affordable access to opportunities for all city residents.
-  **Economic Vitality** | Integrate transportation investments with land use and economic priorities.
-  **Housing** | Support the creation of affordable and varied housing options.
-  **Innovation** | Leverage technologies to meet 21st century challenges.

Objectives for On-Street Parking & Curb Management	Relevant Driving Principle(s)
1 Provide for the safe and efficient movement of people and goods by effectively managing the curb space in commercial and mixed-use districts, using data- and goals-driven decision-making processes.	
2 Increase access to businesses in mixed-use and commercial districts by promoting adequate turnover of on-street parking stalls using time limits and parking meters.	
3 Accommodate growing loading needs, and proactively manage loading needs and demand for on-street parking as part of new developments in commercial and mixed-use districts.	
4 Promote equity and accessibility and provide for the changing needs for curb lane utilization as transportation technologies and modes evolve.	
5 Manage expectations and simplify the experience for all curb users by making it predictable and easy to understand.	

Document Outline

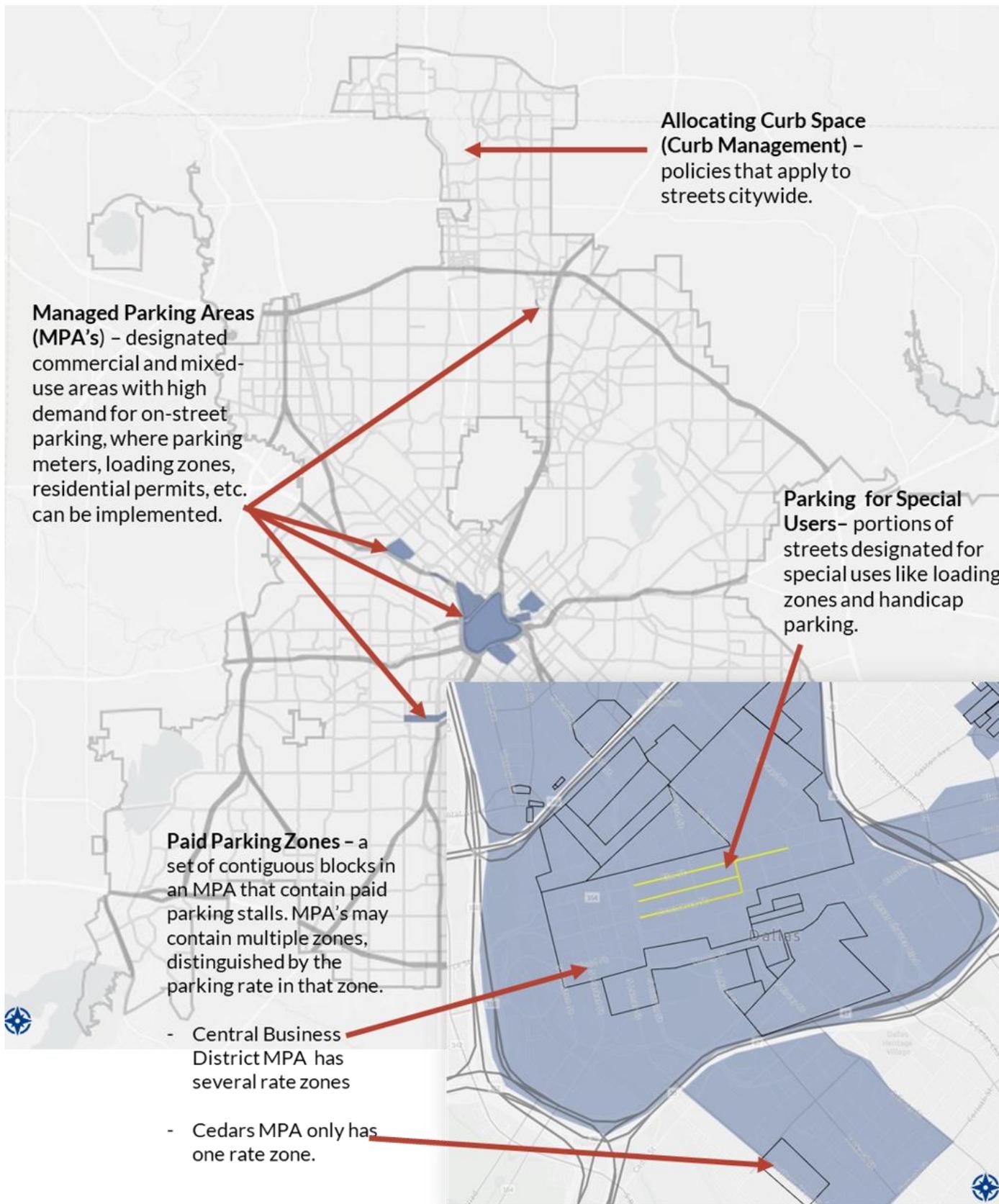
The objectives are advanced through a more detailed set of policies, recommendations, and action items focused on the following areas:

- Prioritizing and allocating curb space
- Managed Parking Areas
- Parking time limits
- Paid parking and rate setting
- Loading zones
- Parking for special users (i.e., employee parking, handicap parking, residential parking, and electric vehicles)
- Signs and pavement/ curb markings
- Communication

The topics that are covered in this document were identified as areas of interest during three workshops with stakeholders over the course of 2021. The recommendations and action items were informed by a review of the curb today that looked at existing regulations and practices compared to those of peer cities, and an inventory of curb uses on a representative sample of streets in four commercial and mixed-use districts in central Dallas.

The findings and recommended actions are intended to be broadly applicable both within central Dallas and in other areas of the city where commercial and mixed-use developments have created a high level of demand and competition for on-street parking spaces. Many community organizations and city staff contributed to the policy language to ensure that the recommendations and action items are achievable and fit within the context of the City of Dallas’s many diverse and unique neighborhoods.

The organization of the document is based on the geographic scale that the recommendations apply to. It starts with recommendations that apply citywide (Allocating Curb Uses) before moving to smaller geographic areas like neighborhoods (Managed Parking Areas). From there, the topics zoom in to treatments for individual streets (Time Limits, Paid Parking, Loading Zones, Employee Parking, Residential Parking, Electric Vehicle Parking, and Handicap Parking), then to the specific signs and markings on those streets. The document concludes with a discussion of ways the city can improve communication, followed by a summary of all action items.



THE CURB TODAY

1

Curbs in commercial and mixed-used areas of Dallas currently serve a wide range of functions, ranging from traditional metered parking to valet services, commercial loading, bike racks, and parklets. Where these uses are located and how they are managed varies between neighborhoods and by individual block. To make informed decisions related to curb and metered parking management that are based on local data, a review of how the City of Dallas is currently regulating curb space was performed. Findings in this chapter include a detailed on-the-ground inventory of the various curb uses in sample locations throughout the city.

Existing Curb Use Inventory

A curb use inventory was conducted in the spring of 2021 along a representative sample of streets in four Dallas districts; three inside Metered Parking Areas (MPA) and one outside of an MPA. They included the Downtown Central Business District, Uptown, Deep Ellum, and Bishop Arts. The curb use inventory was conducted using GPS-enabled technology. A team walked along identified curbs in each district to identify the type of curb use (e.g., No Parking, Loading, Time Limit Parking, etc.), the length of each curb use, and the associated regulatory information (e.g., enforcement hours, time limits, etc.).

Figure 1.1 illustrates the location of each district included in this review. The districts and streets that were selected for the inventory were identified by the

Department of Transportation staff as having the greatest conflicts. They were also intended to represent the range of conditions that exist in areas with high demand for curb space. For example, Bishop Arts is intended to represent areas like Lower Greenville that have a mixture of restaurants, shops, and bars in a main street-type setting surrounded by residential neighborhoods.

Throughout the years, decisions about curb uses have been reactive, meaning changes have been made on a case-by-case basis to meet specific needs. This in part is why there are a variety of curb uses in each district. Due to the ad-hoc nature of curb management in the city to date, there are too many nuances in the curb uses to list all of them, so they have been consolidated into the categories listed below.

- **Travel Lane:** The lane next to the curb is actively used for vehicular or micromobility travel, either a through lane or turn lane. This category includes bus stops where buses stop in travel lane.
- **Free Parking:** Parking is permitted next to the curb and 1) payment is not required, and 2) there are no time-of-day or time limit restrictions. Ways to tell whether a location is “Free” parking and not a travel lane include the absence of No Parking signs mid-block, the potential presence of No Parking signs around crosswalks, or the curb is indented.
- **Free - Time of Day Restricted:** Parking is only allowed next to the curb during certain hours of the day and payment is not required.
- **Free - Time Limits:** Parking is allowed next to the curb at all times of day, payment is not required, but there are time limits for how long a person can park in one spot.

- **Paid Parking:** Payment is required to park during a specified period of the day. Time-of-day and time limit restrictions may also be present.
- **Loading Zone:** Commercial/freight loading zone or passenger loading zone.
- **Permit Parking:** There are signs designating that a permit is required to park next to the curb.
- **Valet Parking:** Valet loading zone.
- **Other:** Miscellaneous (parklet/street seats, bike corrals, etc.).
- **No Parking - Restricted:** There are signs indicating that parking is prohibited or, if parking is allowed or occurring on certain parts of a blockface, the space within 20 feet of crosswalks, 15 feet of intersections, where there are bulb-outs, etc.
- **No Parking - Driveway:** A driveway is present, making it impossible to park on-street at that location.

Figure 1.1. Study Area

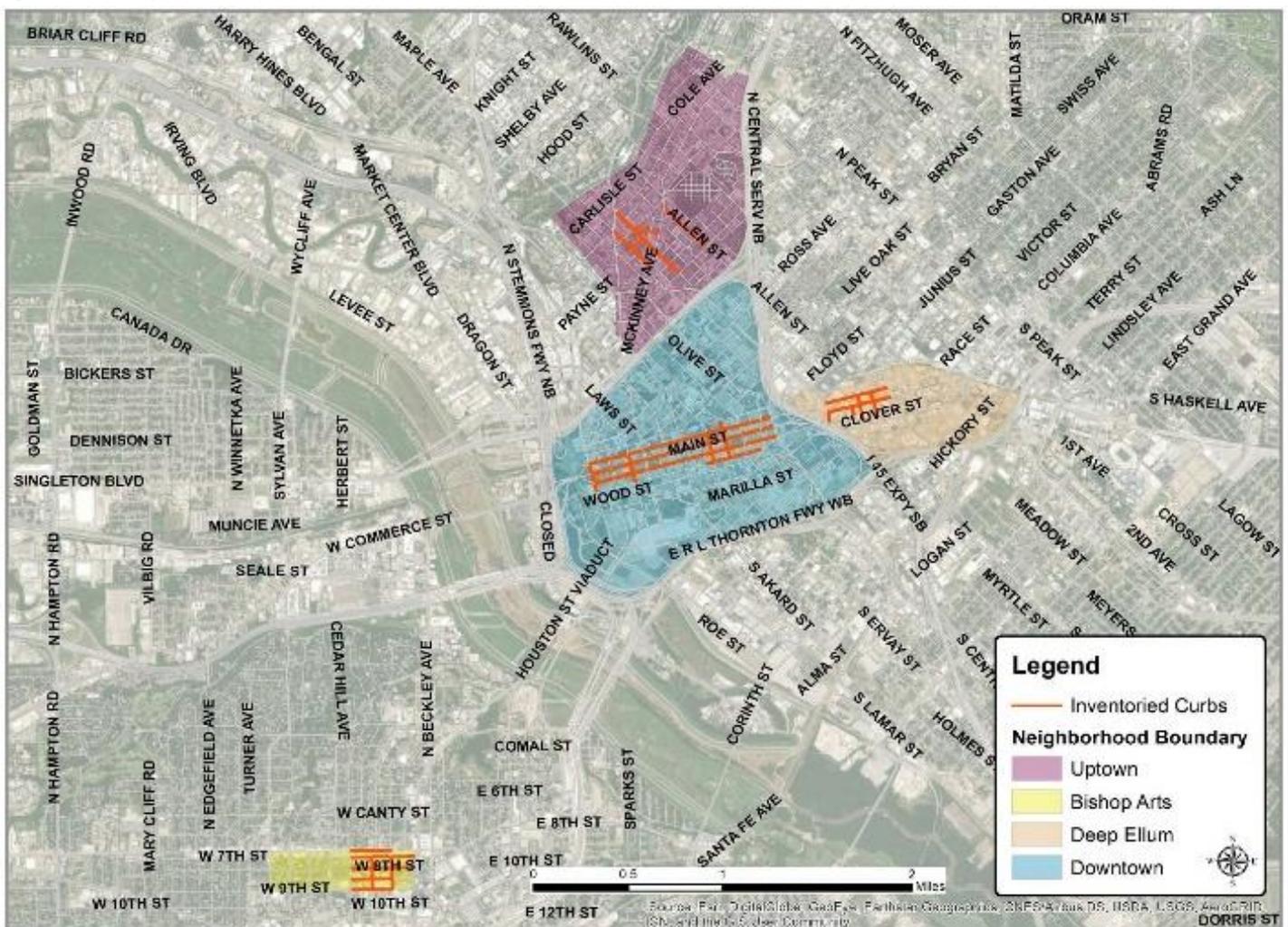


Figure 1.2 illustrates the result of the field collection and shows the variety and wide range of curb use patterns across the districts. Later in this section, the curb uses in each district will be reviewed individually.

Figure 1.3 demonstrates the total amount of curb space that does not allow parking, that is free, paid (either with a payment or a permit), used for loading, and is used for other purposes, including bike racks and restaurant eating areas.

Figure 1.2. Map of Curb Uses by District

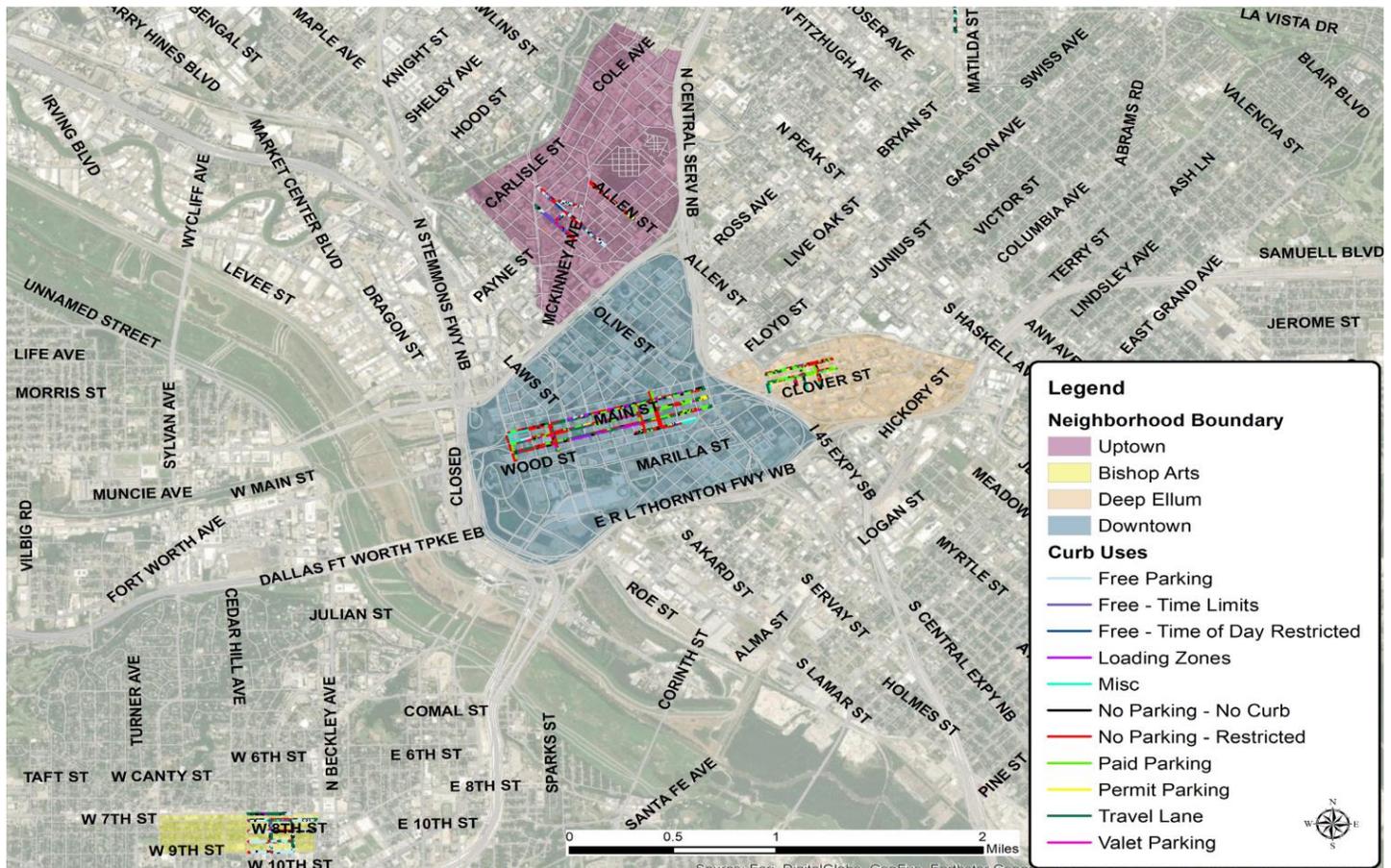
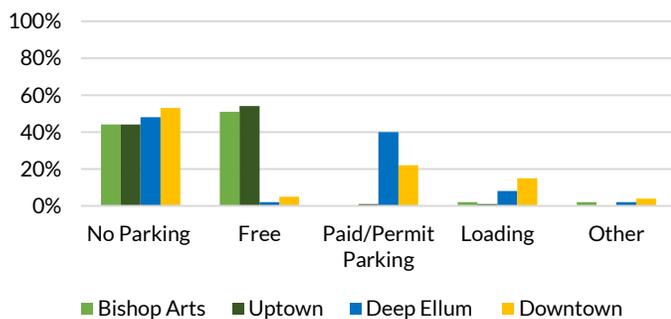


Figure 1.3. Aggregate of Curb Uses by District



Note: No Parking includes areas posted with “No Parking” signs, where parking is prohibited because there is no physical curb or because the curb use is a travel lane

Throughout Dallas, most curbs are used for a single purpose. Of the uses indicated, No Parking is the most prevalent, due to necessary setbacks at driveways, curb cuts, fire hydrants, etc. Also, in the neighborhoods surveyed, the curb lane is often used as a travel lane especially on primary arterials. Within Downtown there are some areas that convert from parking to a travel lane at peak commute times, also referred to as rush hour parking restrictions.

The following sections examine the curb uses in sections of the Downtown, Uptown, Bishop Arts, and Deep Ellum districts that were sampled.



Downtown

Downtown Dallas is a vibrant mix of office, retail, government buildings, residents, restaurants, nightlife, and more. The most important curb functions in this area to support the land uses are bus lanes and loading zones. Two main issues in the Downtown area are 1) unclear communication on how the curb can be used and when, and 2) the evolving definition for “loading zone.” To this last point, loading zones are historically thought of as places for large freight vehicles to stand for a length of time to drop-off goods for the surrounding businesses. Today, loading also includes TNCs, food delivery, and an increase in small-scale deliveries, such as those from USPS or other delivery services.

The curb uses and their locations for the streets sampled in the Downtown area are shown in **Figure**

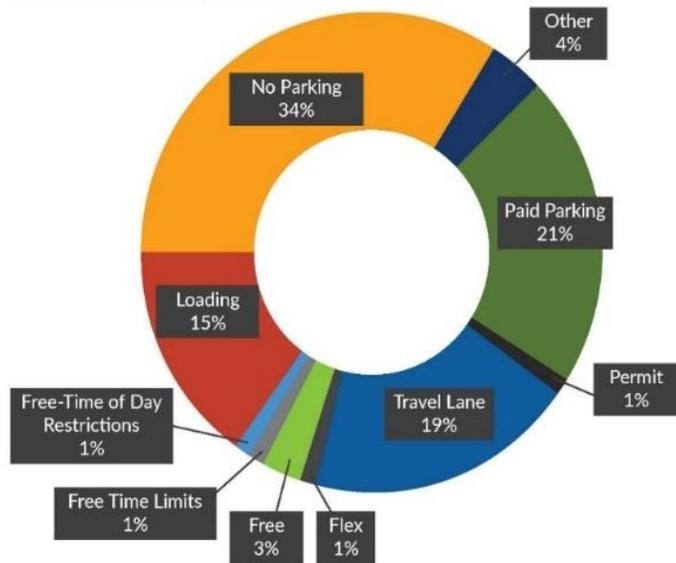
1.4. The map demonstrates that a lot of curb uses are present to serve the various needs in the Downtown area; however, they are not consistently located. The length and location of the curb uses is not consistent from block to block; and while there may be extenuating circumstances that make consistency challenging, there should be some consistency so that customers, delivery drivers, and other users know where to find loading zones, parking, and drop-off locations along any curb face regardless of the street they are on.

Viewing the same data in a different way, **Figure 1.5** summarizes the percentage of each use in relation to the total amount of curb length inventoried Downtown.

Figure 1.4. Downtown Curb Use Map



Figure 1.5. Downtown Curb Use Length Percentages



As shown in the map and the chart, the No Parking areas and travel lanes combined make up the majority of the curb uses, with the other large portion being dedicated to paid parking and loading zones. However, they are inconsistently located throughout, which can leave some areas feeling under-served and some users confused if they are not familiar with the area.

Another notable observation is that there are “flex” curb uses. These are areas where the curb is used as one thing at one time of day (e.g., travel during rush hour) and another use for the remainder of the day (e.g., parking). In all flex uses observed, they were a combination of No Parking and another use. These areas establish a precedent to potentially expand the use of flex curb uses.



Uptown

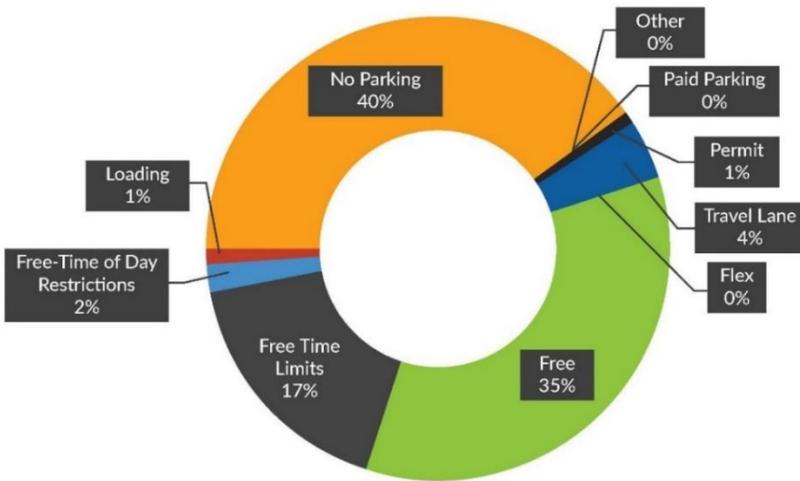
Uptown Dallas is characterized by long blocks that have a mixture of residential and commercial uses. The district has seen an increase in competition for curb space, particularly among micromobility options, greening to combat heat island effects, loading, and bicycles. Similarly, as density increases and more people are brought to the area, demand for curb use also increases.

The map shown in **Figure 1.6** illustrates the various curb uses in a portion of Uptown. **Figure 1.7** summarizes the curb uses as a percentage in relation to the total amount of curb length inventoried. The primary curb use in Uptown is No Parking, closely followed by free parking. Only 1% of the observed curb length is dedicated to loading zones. This is a challenge for businesses and multi-family residential areas that rely on loading zones. Any loading in this district must occur on the street in undesignated areas.

Figure 1.6. Uptown Curb Use Map



Figure 1.7. Uptown Curb Use Length Percentages





Bishop Arts

Similar to Uptown, Bishop Arts is also characterized by long city blocks and has commercial areas surrounded by residential areas. The mixture of residential and commercial uses competing for curb space creates a challenging dynamic in the district. As shown by the data in this section, the on-street parking is free and only 11% of this free parking has time limit restrictions.

The map in **Figure 1.8** demonstrates the inconsistency of the placement of curb uses as well as the disparity between the types of curb uses present. **Figure 1.9** summarizes the curb uses as a percentage in relation to the total amount of curb length inventoried.

As previously stated, there are only three primary curb uses in the portion of the district that was inventoried, two of which do not allow parking, stopping, or standing of any kind. As seen with Uptown, Bishop Arts also has a small amount of space dedicated to loading zones, which means loading likely occurs in undesignated areas like travel lanes. Loading zones not only allow freight deliveries but also accommodate Transportation Network Companies (TNCs), such as Uber and Lyft, or other drop-off/pick-up services.

Figure 1.8. Bishop Arts Curb Use Map

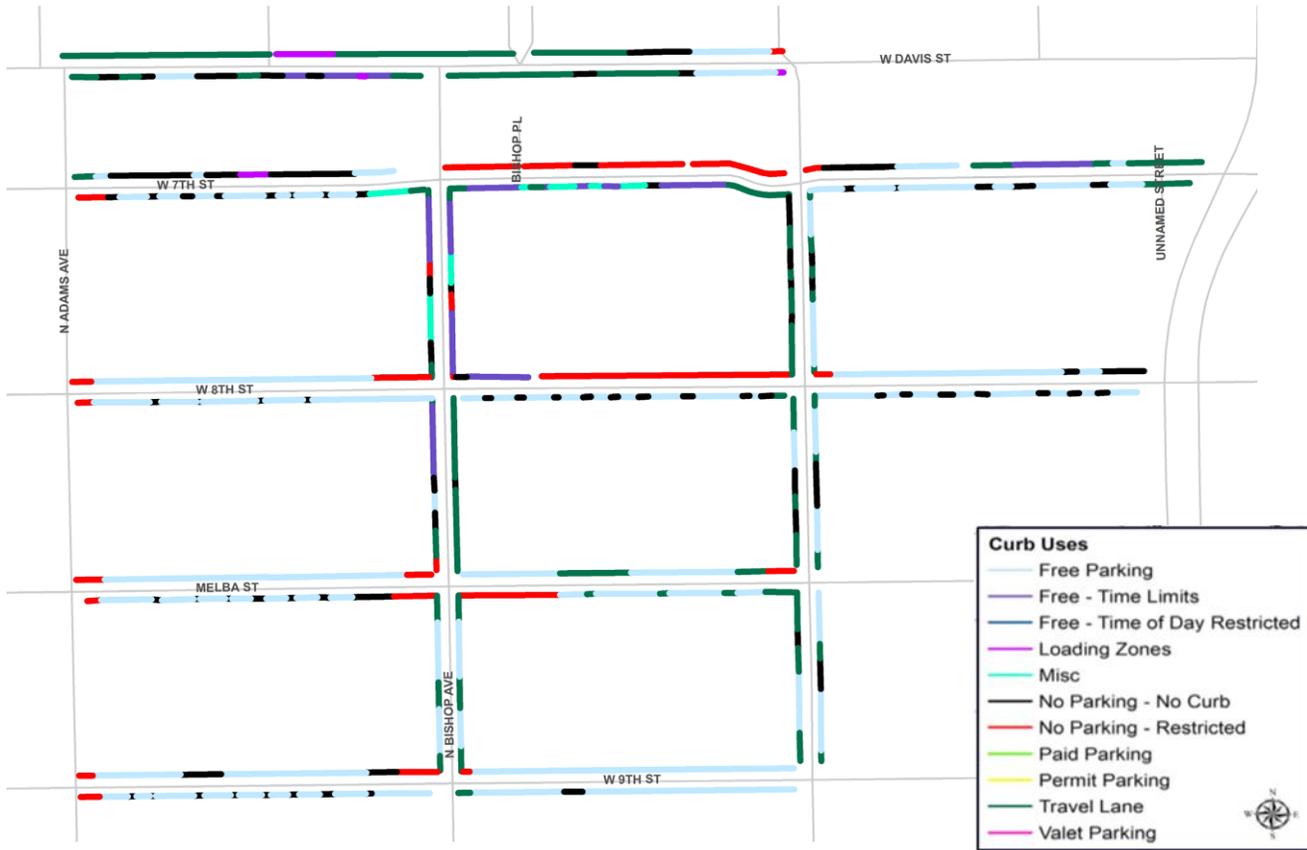
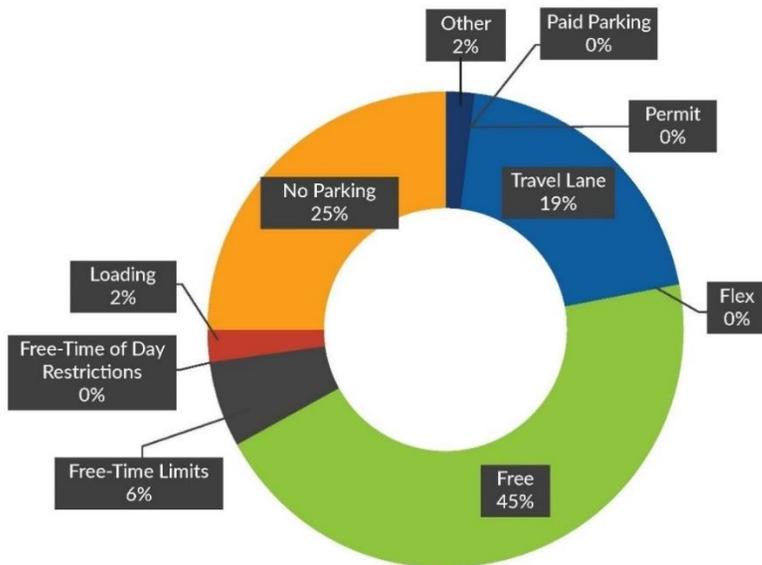


Figure 1.9. Bishop Arts Curb Use Length Percentages





Deep Ellum

Deep Ellum is a mixed-used district with entertainment, commercial, warehouse, residential, business, and historical/cultural land uses. The vast mixture of uses creates a time-of-day characteristic which is unique to this district. It is busy throughout the entire day, where residential uses dominate in the mornings and evenings, business uses have peak operation during the day, and commercial and restaurant or other entertainment uses peak in the evenings. As such, there is a need to have the curbs be as fluid as the land uses and offer flexibility to support the changing needs.

Figure 1.10 illustrates the type and location of curb uses observed in a portion of Deep Ellum. The map reflects

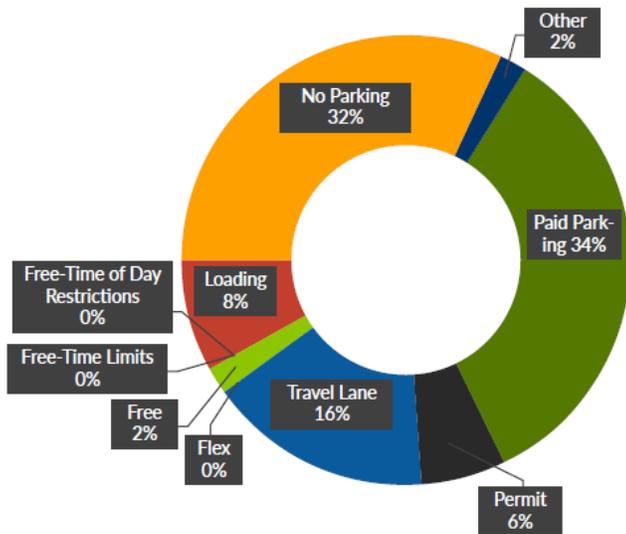
what is seen in the other districts, a disparity and mismatching of curb spaces, which can lead to inefficiencies in how the curbs are used. The chart shown in **Figure 1.11** summarizes the curb uses as a percentage in relation to the total amount of curb length inventoried.

Unlike the other districts observed, the main curb use observed in Deep Ellum is paid parking. This is a reflection of the high demand and the types of land uses found in this area. Similar to the other districts is the lack of loading options. Consistent placement of loading zones and allowing those zones to be flexible by time of day, could optimize curb use efficiency.

Figure 1.10. Deep Ellum Curb Use Map



Figure 1.11. Deep Ellum Curb Use Length Percentages

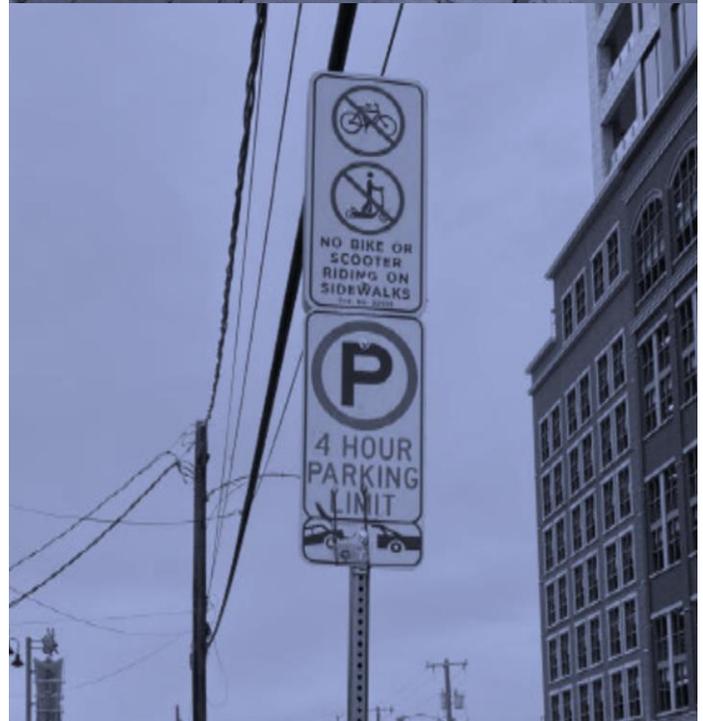


General Findings from Curb Use Inventory

During field review, three consistent challenges were identified that make curb use confusing for users, businesses, and city staff:

- **SIGNAGE** – there are a variety of signs throughout the city to convey the regulations for each curb use. At times, these may be confusing due to the variety of curb uses and inconsistencies from block to block, street to street, or district to district.
- **PAYMENT OPTIONS** – passing through each district, a new payment option is presented for metered parking (credit card, coin, app, etc.). This can be confusing for users, including visitors, business patrons, employees, USPS, and freight delivery drivers, who travel between districts.
- **CONSISTENCY** – it is often encouraged to promote the unique characteristics of each district. However, consistency in terms of sign placement, curb coloring, etc. is an essential component of compliance assurance because users need to know what these various elements along the street mean. If elements along the curb are constantly shifting and changing from one area to another, the user will likely get confused on the element meanings in each area.

Additionally, there is a large disparity among the types of curb uses available. For example, in Bishop Arts, the sole sampled district that does not overlap with an MPA, 7-15% less curb space is designated No Parking than in the other three sampled districts. Downtown also stands out among the surveyed districts for its very high percentage of loading zone curb space, which takes up 7-15% more space than in the other districts. Although the sampled blocks are only a representation of the broader districts in which they lie, they nonetheless reveal that curb space allocation by use is highly inconsistent across Dallas.



PRIORITIZING AND ALLOCATING CURB SPACE

2

OBJECTIVE: Provide for the safe and efficient movement of people and goods by effectively managing the curb space in commercial and mixed-use districts, using data- and goals-driven decision-making processes.

Prioritizing and determining what curb uses to allow on a given street is the foundation of curb management. These decisions should be based on adopted city plans and priorities. This chapter will provide the framework for prioritizing the use of the curb space in various contexts throughout Dallas, based on adjacent land use and roadway type. Subsequent chapters will focus specifically on strategies for managing on-street parking in commercial and mixed-use areas with high demand and businesses that rely on it. However, the decision to allow on-street parking must first be made, and that is the focus of this chapter.

Types of Curb Uses

Many cities make curb use decisions on a case-by-case basis, typically in response to a request from a business, landowner, or other neighborhood stakeholder. However, efficient and effective curb management begins by understanding the underlying curb functions that each use serves, then making curb decisions that prioritize the functions that meet transportation and land use needs. Based on a review of peer city curb management programs, this report recommends that Dallas conceive of curb uses as serving five overall functions: access, activation, greening, mobility, and storage. **Figure 2.1** shows which uses are included under each function.

Some cities also include a sixth category, commerce. However, treating the needs of businesses as fundamentally separate from other stakeholders can contribute to a sense of competition among curb users. As **Figure 2.1** shows, curb uses that are important to businesses—like short-stay parking, loading/short-stay zones, or outdoor eating space—all serve multiple users and can be categorized under other functions.

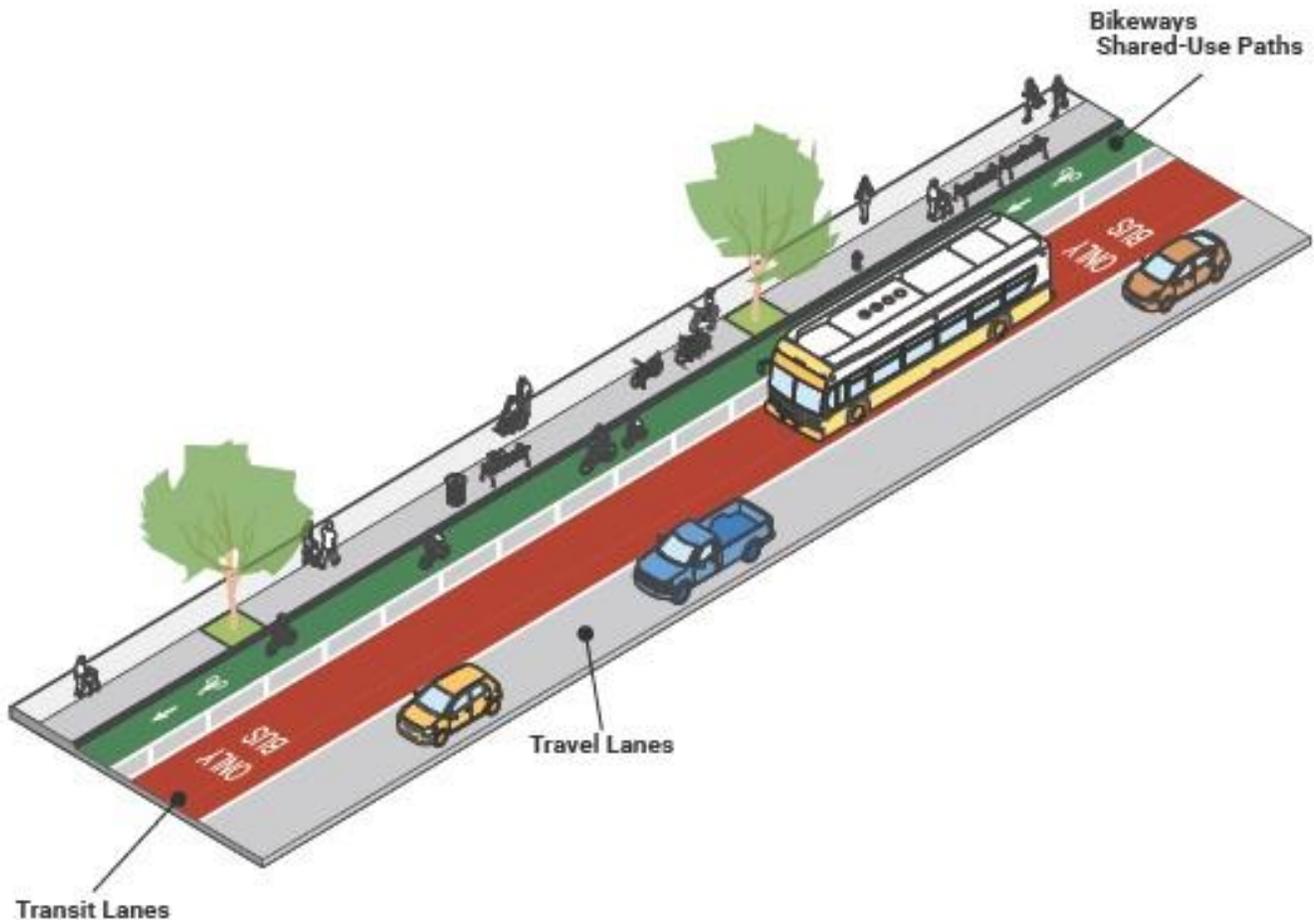
Figure 2.1. Curb Functions and Associated Uses

FUNCTION	DEFINITION	USES	
Mobility	Supports efficient movement of people and goods as they travel through the area	<ul style="list-style-type: none"> • General purpose travel lanes • Enhanced sidewalks • Bikeways 	<ul style="list-style-type: none"> • Multi-use paths • Crosswalks • Transit lanes, as applicable
Access	Enables people and goods to make the connection between their mode of transportation and their trip origin/destination	<ul style="list-style-type: none"> • Loading/short-stay zones (including use by private vehicle, home delivery, curbside pickup, commercial vehicle, taxi, valet, shuttle, and TNC • Short-term parking – two hours or less (including ADA accessible spaces) • Bike parking 	<ul style="list-style-type: none"> • Bus, light rail, and trolley stops and stations • Driveways • Enhanced sidewalks • Micro-mobility hubs (including bikeshare locations) • Carshare parking • Crossing improvements • Garbage & recycling collection
Activation	Transforms streets into inviting, enjoyable public spaces	<ul style="list-style-type: none"> • Food trucks • Sidewalk cafes • Parklets • Public art and lighting installations 	<ul style="list-style-type: none"> • Public amenities (including trash cans, water fountains, street furniture, and other health and hygiene stations)
Greening	Adds environmental services to support aesthetics, health, and resiliency	<ul style="list-style-type: none"> • Planter boxes and planting strips • Trees and shrubs 	<ul style="list-style-type: none"> • Art structures, information kiosks, ads, etc.
Storage	Provides extended-stay spaces for vehicles and equipment when they are not in use	<ul style="list-style-type: none"> • Long-term parking (including ADA accessible spaces) • Construction and equipment storage • Portable containers/storage pods 	<ul style="list-style-type: none"> • Electric vehicle (EV) charging stations, as applicable • Reserved spaces for institutional users (including government officials and law enforcement)

MOBILITY

Mobility functions support the efficient movement of people and goods as they travel through the area. Mobility is the priority on most major arterials and throughout industrial areas and should be prioritized on streets that serve as main routes leading people into and through an area.

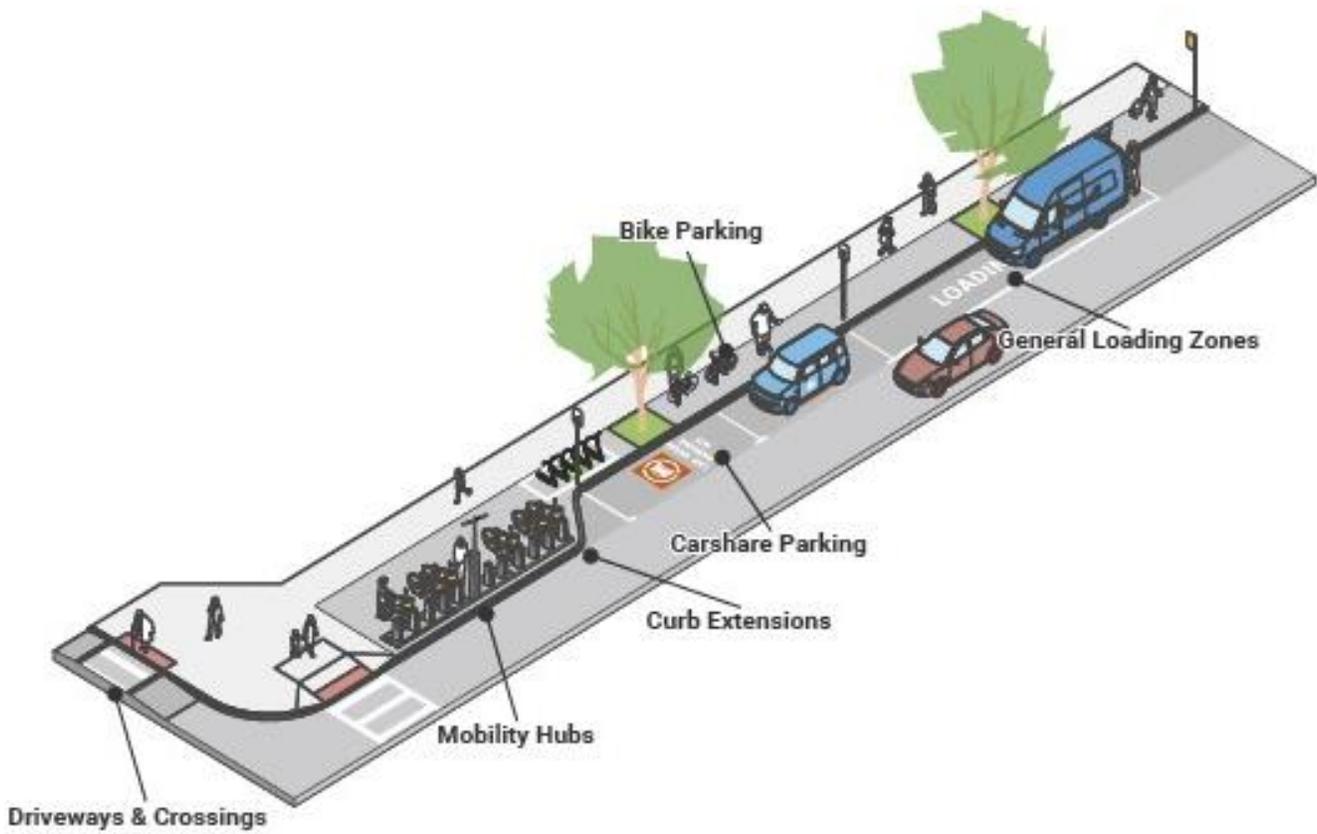
Prioritizing mobility on a transit street may mean dedicating a curb lane for transit use, while mobility on an industrial street will likely mean designing through lanes with freight vehicles in mind. Similarly, bicycle lanes or continuous facilities improves mobility on designated bicycle routes but may be less important when not on a designated network of bikeways or low-stress shared streets.



ACCESS

Access functions enable people and goods to make the connection between their mode of transportation and their trip origin/destination. They are about getting people to and from their destination, allowing them to get on or off their bike, into or out of a vehicle, and onto or off of transit. Prioritizing access is especially important on minor arterials or collectors, depending on land use. Land uses with large amounts or destinations benefit from access functions the most.

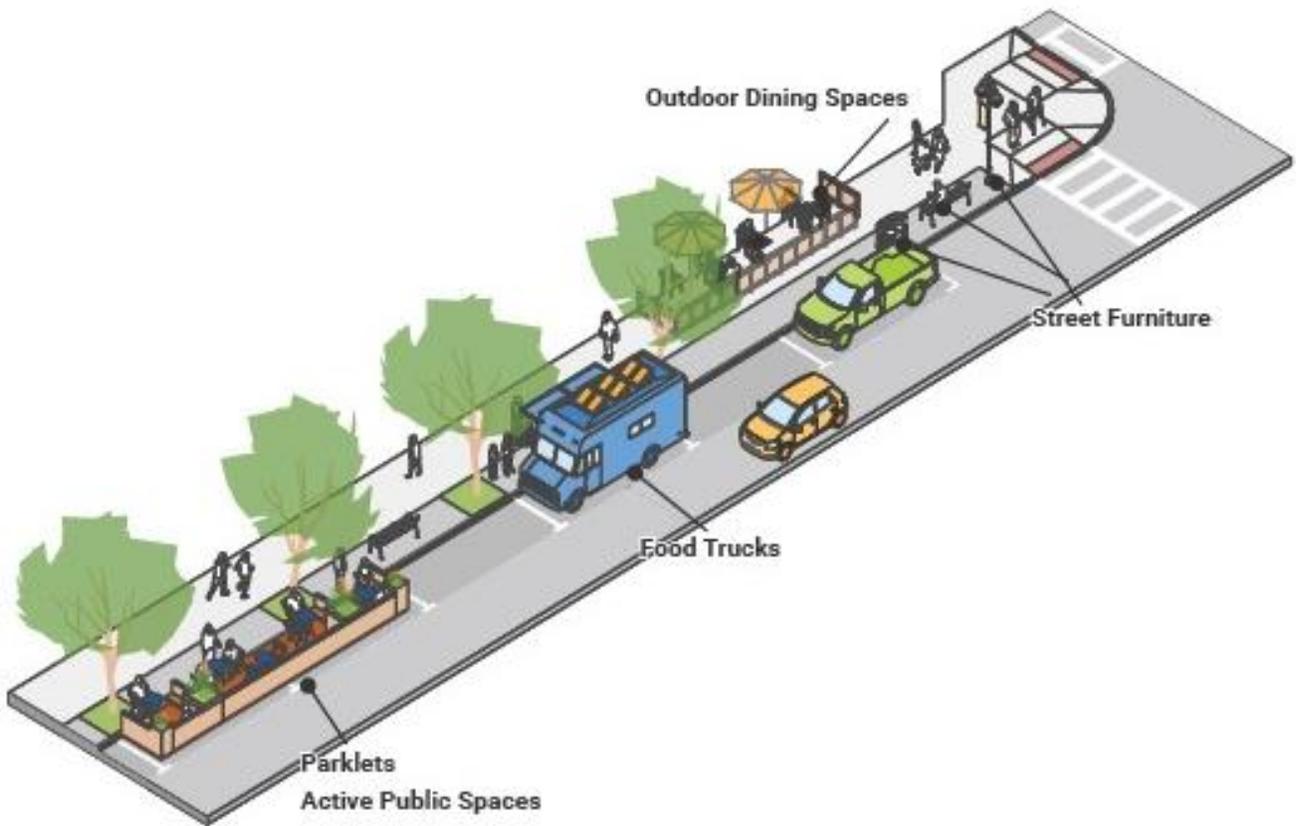
Access functions are constantly changing with technology and are driven by demand. Multi-modal uses such as mobility hubs are more recent introductions to the public realm, as are the needs for on-demand delivery and transportation network providers (TNCs) that increase demand for loading/short-stay curb uses. Specific access needs should be evaluated before deciding on what access function the curb space should serve.



ACTIVATION

Activation functions transform streets into inviting, enjoyable public spaces. They are suited for minor arterials and collectors, which support active land uses with plenty of local foot traffic but are more comfortable places to linger due to their lower vehicle volumes and speeds.

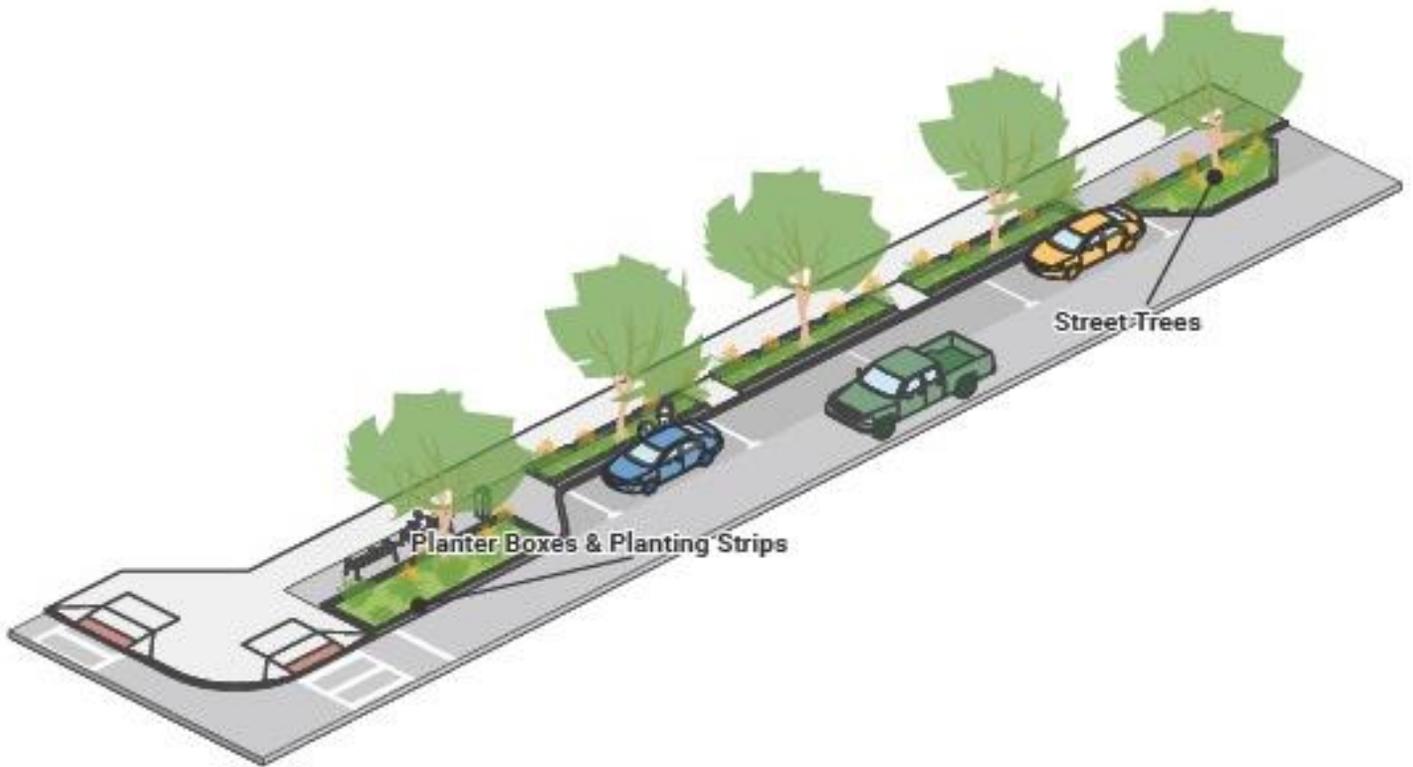
Prioritizing activation on a street is about making space for people to stay, observe, and linger, whether it is to eat at a sidewalk cafe, take a break on a bench, or observe public art.



GREENING

Greening functions add environmental services to support aesthetics, health, and resiliency. Greening infrastructure provides separation from traffic on large streets, traffic calming and a pleasant pedestrian environment on smaller streets, and environmental services for any street.

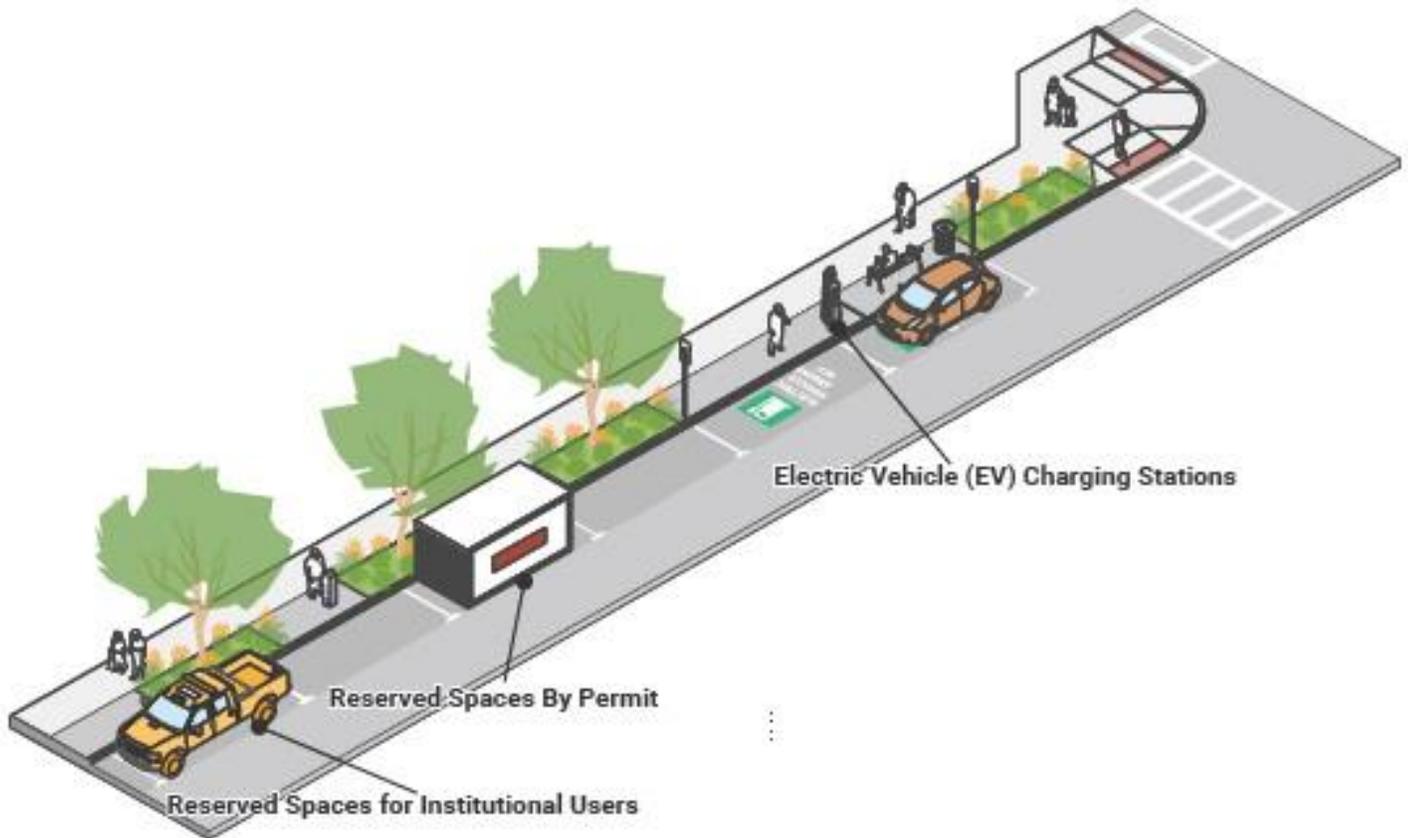
Greening can come in a variety of forms depending on the street type, including planter boxes, planting strips, rain gardens, and street trees. The presence of greening element factors increases the desirability of a streetscape, improving aesthetics and providing shade to users, while also improving the environmental function of the street.



STORAGE

Storage functions provide extended stay spaces for vehicles and equipment when they are not in use. Prioritizing storage infers that there is not high need to quickly access the space for short-term stays or errands. As such, storage functions are mostly prioritized on local streets where the main curb space users are residents.

In most cases, if a street is prioritized for storage, the main curb use will be long-term private vehicle parking. That said, storage functions can also include construction and equipment storage, reserved spaces, storage pods, or EV charging stations.



Prioritizing Curb Functions

Cities can most efficiently manage curb space by considering the overall functional needs and desired outcomes in a corridor or neighborhood, rather than making ad-hoc decisions on a case-by-case basis. This policy recommends that the city follow a three-step process in allocating curb space, which is shown in **Figure 2.2** and described below.

- 1) **Prioritize safety.** Through the Vision Zero Action Plan, the city has committed to a goal of reaching zero traffic fatalities and a 50% reduction in severe injuries by 2030. Improvements like No Parking around intersections, fire hydrants, and crosswalks, curb extensions, and dedicated turn lanes can be critical in preventing collisions and ensuring travelers can see each other with sufficient time to react. When allocating curb space, city staff should first determine whether any design solutions are needed to mitigate safety risks and address conflict points.
- 2) **Meet mobility goals required by plans and policies.** While businesses will often prioritize access above mobility, sufficient access cannot be had without sufficient mobility. Dallas has plans and policies that dictate where and how the public right-of-way should be used to achieve mobility goals. For example, the Bike Plan identifies routes where a dedicated bike facility will take priority over other curbside uses. The

Thoroughfare Plan dictates the number of travel lanes that need to be provided along arterial and collector roads. The Street Design Manual establishes the minimum width of pedestrian zone elements based on the type of street. city staff should consult the Bike Plan, Thoroughfare Plan, Street Design Manual, Pedestrian Overlay Zone requirements, Complete Streets Manual, and sidewalk requirements in zoning districts to determine what multimodal facilities take priority within streets’ right-of-way. Once parking is permitted along a street, it is often very difficult to take away.

- 3) **Prioritize access, activation, greening, and storage based on the land use and transportation content.** In some circumstances, ensuring safety and mobility goals are met may take up most of the available right-of-way, including the space above and below the curb. However, in many locations in commercial and mixed-use areas, unallocated curb space will remain after these first priorities have been met. The land uses, multimodal mobility options, and neighborhood character together should guide decisions about what curb functions are most important. **Figure 2.3** recommends curb use priorities based on the land use and transportation contexts within Dallas.

Figure 2.2. Process for Allocating Curb Space

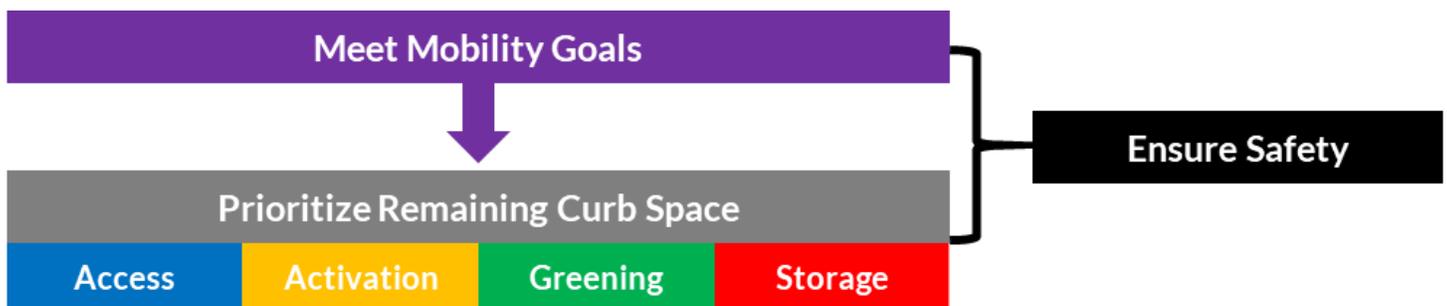


Figure 2.3. Recommended Priority Curb Functions by Land Use and Transportation Context

		STREET CLASSIFICATION		
		Principal and Minor Arterials	Collector Streets	Local Streets
STREET CONTEXT	Mixed-Use	Prioritize Access Balance Activation, Greening	Prioritize Access Balance Activation, Greening, Storage	Balance Access, Greening, Storage
	Commercial			-
	Parkways	Prioritize Greening Balance Access, Activation	Balance Activation, Greening	-
	Industrial	Prioritize Access	Prioritize Access, Greening Balance Storage	Prioritize Storage Balance Access, Greening
	Residential	-	Balance Access, Greening, Storage	Balance Access, Greening, Storage

Note: functional classifications and contextual street types align with the Dallas Complete Streets Design Manual designations.

The recommendations in **Figure 2.3** reflect the ways that the land use characteristics of an area strongly influence how and why users seek to use the curb. For example, an entertainment district may see many visitors arriving and departing by transit, bicycle, rideshare (such as taxi, shuttle, or TNC), and carpool. The success of this district will depend in part on convenient multi-modal access, with longer-term parking primarily occurring in off-street parking lots and garages. In contrast, a residential neighborhood may be most desirable when the streets are well-planted with trees and offer convenient longer-term on-street parking—pointing to greening and storage as core functions, with uses related to access focused primarily on pick-up/drop-off at multi-family buildings.

Figure 2.3 also indicates how a street’s functional classification determines the curb use priorities. After mobility, access is the priority on arterials, as these roads serve as the main routes leading people into an area. Activation may be better suited for collectors, which support active land uses with plenty of local foot traffic but are more comfortable places to linger due to their lower vehicle volumes and speeds. Long-term storage (i.e., parking for more than four hours) should generally be redirected to off-street parking lots and garages, and local streets and other lower-classification routes, which benefit from traffic calming and are less likely to be the sites of land uses that

generate frequent short trips. Depending on the urban context, greening may be a priority on streets of any size – to provide separation from traffic on large streets, to provide traffic calming and a pleasant pedestrian environment on smaller streets, and to provide environmental benefits anywhere.

There may be some cases where a specific curb use should be sited as close to a particular land use as possible. For example, establishing transit stations, ADA-accessible parking, and drop-off/pick-up zones in front of a land use that serves the disability community will maximize accessibility for those with limited mobility. In most cases, however, balancing distribution of curb uses within a larger area can offer reasonable convenience to all users, even if the use they seek is not directly in front of their destination. In a high-demand restaurant or entertainment district, most users will willingly walk a few blocks from their short-term parking, transit stop, or bicycle parking to their destination, and a commercial loading zone can generally serve all businesses within 100-200 feet. In summary, by selecting functional priorities based on land use and considering where to site curb uses from a neighborhood or district perspective, the City can improve the efficiency and functionality of its curb zones.



Arranging Curb Uses Along a Block

A key tenant of designing safe and efficient transportation networks is predictability. The concept of predictability can and should be extended to curb management decisions, to provide a more seamless and user-friendly experience that promotes compliance. This section provides guidance on how and where to locate curb uses to create a more predictable experience for users.

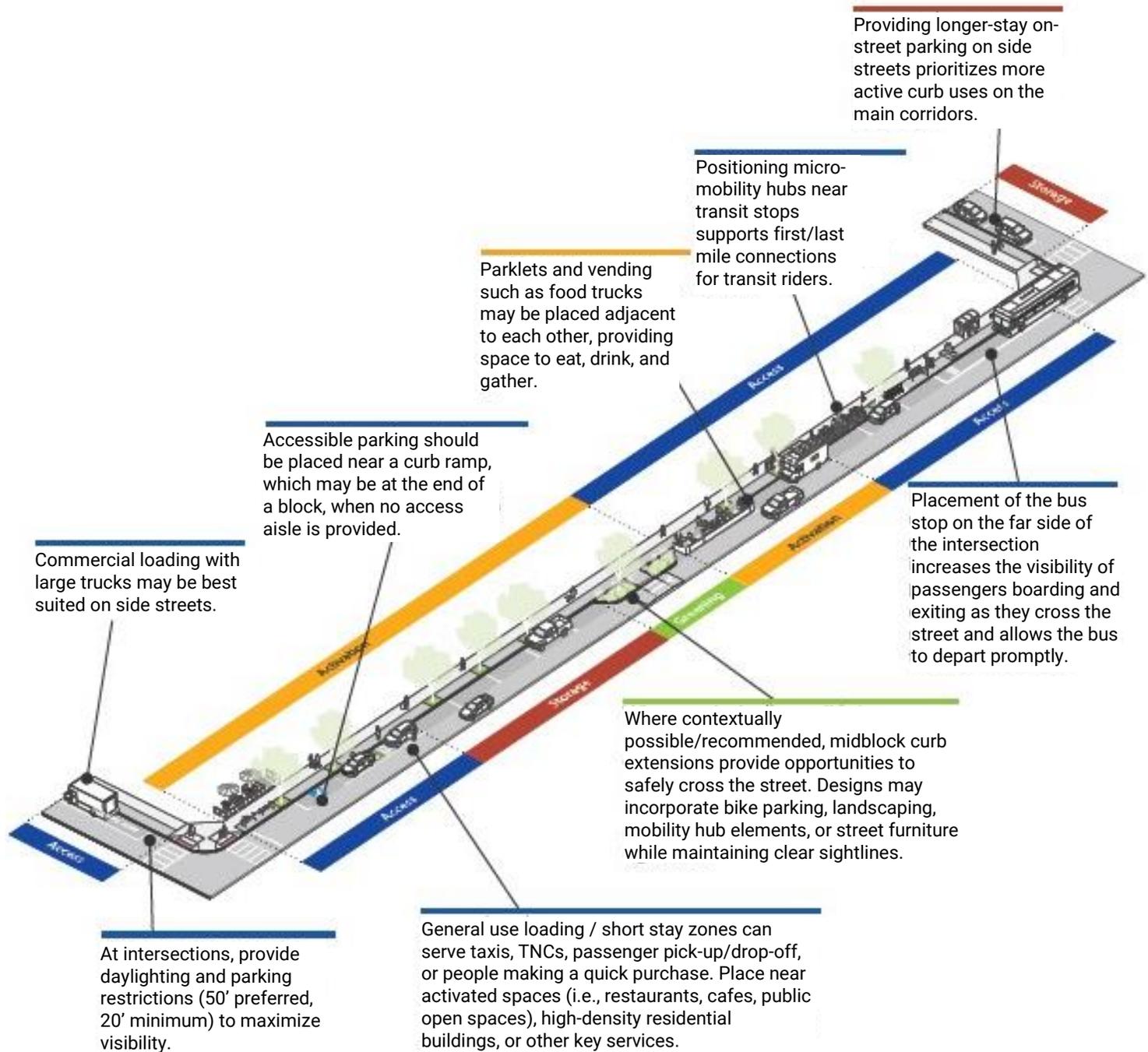
In an ideal setting, on-street parking would be the central use along a block, buffered by loading zones or taxi stands at the end of the block. However, in some locations it may be necessary to locate on-street spaces at the end of a block to account for transit or commercial vehicle loading. In other locations, especially in evening operations, it may be necessary to locate on-street parking on the end of blocks, buffering valet operations.

Of all the curb uses identified in this document, on-street parking needs to remain the most flexible in its location and placement. However, one constant that should be applied throughout commercial and mixed-use areas in Dallas is to provide similar groupings of on-street spaces. Short duration parking (e.g., 30-minute limits) should not be included within the same block that has mostly two-hour parking. Similarly, passenger loading, commercial vehicle loading, and taxi stands should not be placed in the center of on-street parking sections. Rather, these uses should be located to buffer on-street uses from the intersection and allow vehicles to enter and exit these loading areas more easily. The application and location of on-street parking and loading should be decided based on adjacent land uses and competing curb lane needs.

Curb uses on a typical block should support the land use and transportation context. Once street space has been allocated to ensure safety and achieve multi-modal mobility, the space above and below the curb can be used to meet priorities related to access, activation, greening, and storage.

Figure 2.4 shows how different curb uses might be arranged along a block face in a mixed-use district, demonstrating some of the best practices for enhancing safety, comfort, and convenience for people in active urban neighborhoods.

Figure 2.4. Best Practices for Locating Curb Uses Along a Block



Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

2.1	Using the curb use inventory created for this effort as a starting point, expand and maintain an up-to-date GIS-based inventory of curb uses in central Dallas and areas that require active curb management and parking enforcement.
2..2	Consider creating a more detailed decision-making framework for how curb uses should be prioritized, and how to evaluate the tradeoffs that are implicit in identifying what curb uses will predominate.



MANAGED PARKING AREAS

3

OBJECTIVE: Increase access to businesses in mixed-use and commercial districts by promoting adequate turnover of on-street parking stalls using time limits and parking meters.

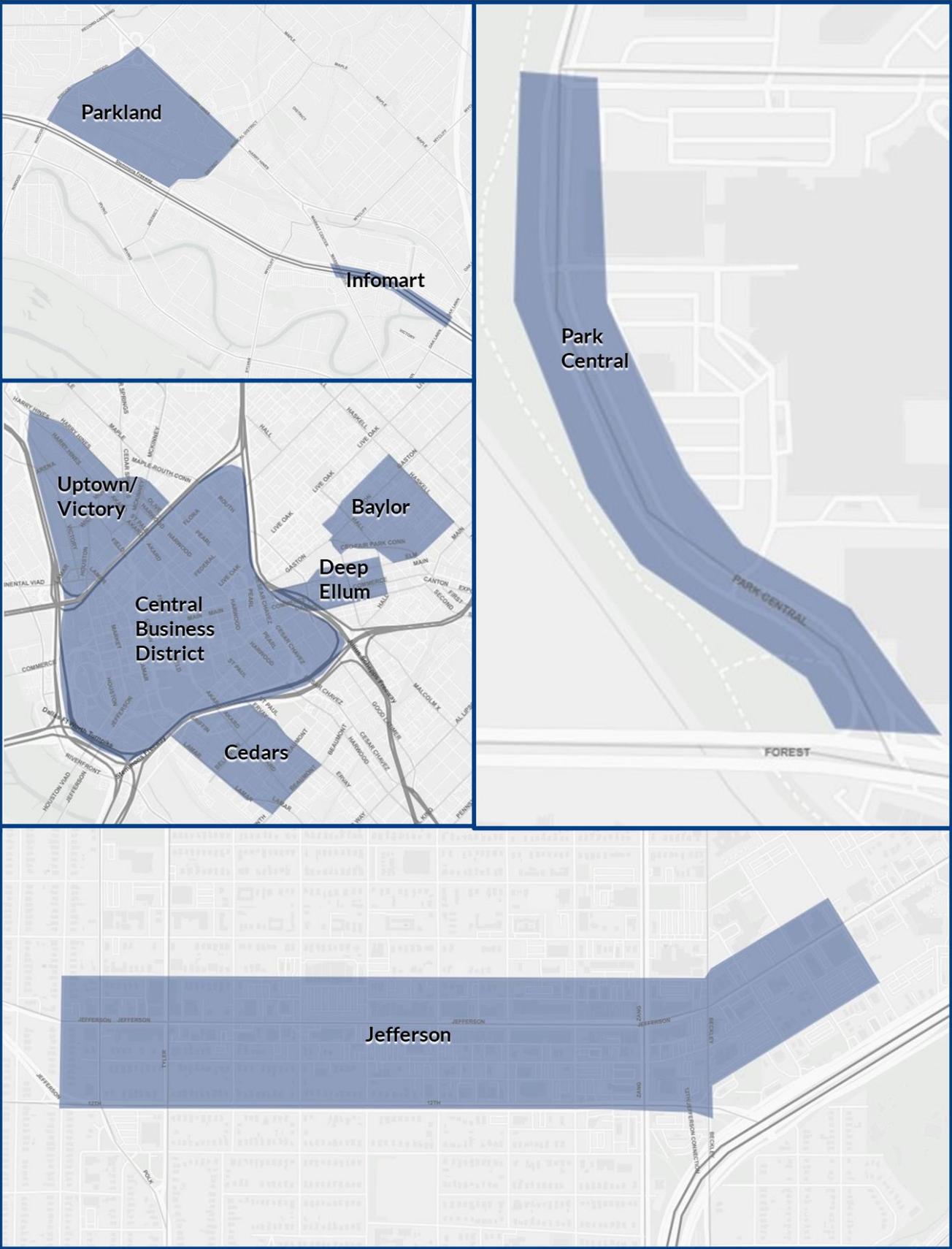
The previous chapter provided guidance for determining the best use of the curb space on roads throughout the city. The following chapters focus on specific types of Access and Storage uses (i.e., time-limited parking, metered parking, loading zones, employee parking, residential parking, electric vehicle charging stations, and handicap parking) as well as signage, markings, and communications strategies for those uses.

Because those uses require higher levels of parking enforcement, signage, and striping to be effective, placing them at locations throughout the city, far from other locations that require active enforcement, can put a strain on the Parking Management and Enforcement Division and the city's signage and striping budgets. Therefore, it is recommended that the uses and strategies described in subsequent chapters, with certain exceptions described below, only be installed in "Managed Parking Areas" (MPAs): areas where on-street parking challenges span multiple blocks in commercial and mixed-use areas and on-street parking stalls along those blocks are more than 85% occupied for much of the day.

All existing "Metered Parking Areas," as defined in Section 28-103 of the Dallas City Code and shown in **Figure 3.1**, should automatically become MPAs. The process for creating new MPAs is defined in the following sections. It is recommended that Metered Parking Areas be removed from the code and changes to the boundaries of these areas be managed administratively.

For locations with on-street parking challenges that are located outside of existing or potential MPAs, the primary eligible strategy would be the installation of 15- to 30-minute parking restrictions. Restrictions such as this would be most applicable in front of businesses like coffee shops and dry cleaners that rely on short customer visits. It is expected that business owners would take an active role in promoting compliance with the time restrictions through visitor education.

Figure 3.1 Existing Metered/Managed Parking Areas



Process for Creating an MPA

Figure 3.2 shows how the MPA creation process fits into the larger on-street parking management process described in this document. The process of creating an MPA, shown in **Figure 3.3**, is intended to result in a comprehensive on-street parking and loading strategy and a defined boundary for the MPA. Existing MPAs may also be in need of an updated parking and loading study, for which the below process would also be applicable.

Indications of a need for greater parking management in an area include:

- On-street parking availability challenges that are affecting the profitability of businesses.
- Pervasive illegal parking challenges such as vehicles stopping to load in the travel lane or parking too close to crosswalks.
- Extensive use of valet parking, which can discourage patrons from making short visits to shops and often cost more than it would to park at a meter for short trips of two hours or less. Valets also require frequent enforcement to ensure their operations do not impact safe and efficient roadway operations or use on-street parking stalls to park vehicles.

Step 1: Initiate Process

The MPA creation process may be initiated and sponsored by a business district, neighborhood association, or by the City. Business owners and residents interested in pursuing parking management strategies should work with their representative business association, neighborhood associations, or Public Improvement Districts (PID) (hereafter

collectively referred to as “association”) to request the creation of an MPA. The association must submit a letter of interest to the Department of Transportation that includes a description of the parking issues in the area, the days of the week and hours of the day they are occurring, the areas in which they are occurring, any discussions that have occurred between businesses and residents in the area, and the association’s point-of-contact for the effort.

During the initial meeting between the association and the Department of Transportation, it should be determined whether the Department of Transportation or the association will sponsor the effort, depending on available resources and the size and needs of the proposed MPA. Regardless who leads the effort, the association and the Department of Transportation should be partners and provide input throughout the process. Additional items that should be documented or established at this time include:

- The issues and needs for the entire area and for specific locations.
- The goals for parking and curb management in the area (e.g., increase access to shops by encouraging parking turnover, reduce congestion and safety issues caused by illegal Parking, improve access for commercial delivery vehicles, etc.).
- If resources are available to conduct the study, the next steps and study timeline.
- Stakeholders that should be part of a Workgroup or Parking Committee for the effort.
- The proposed MPA boundary for the study.

Figure 3.2. On-Street Parking Management Spectrum

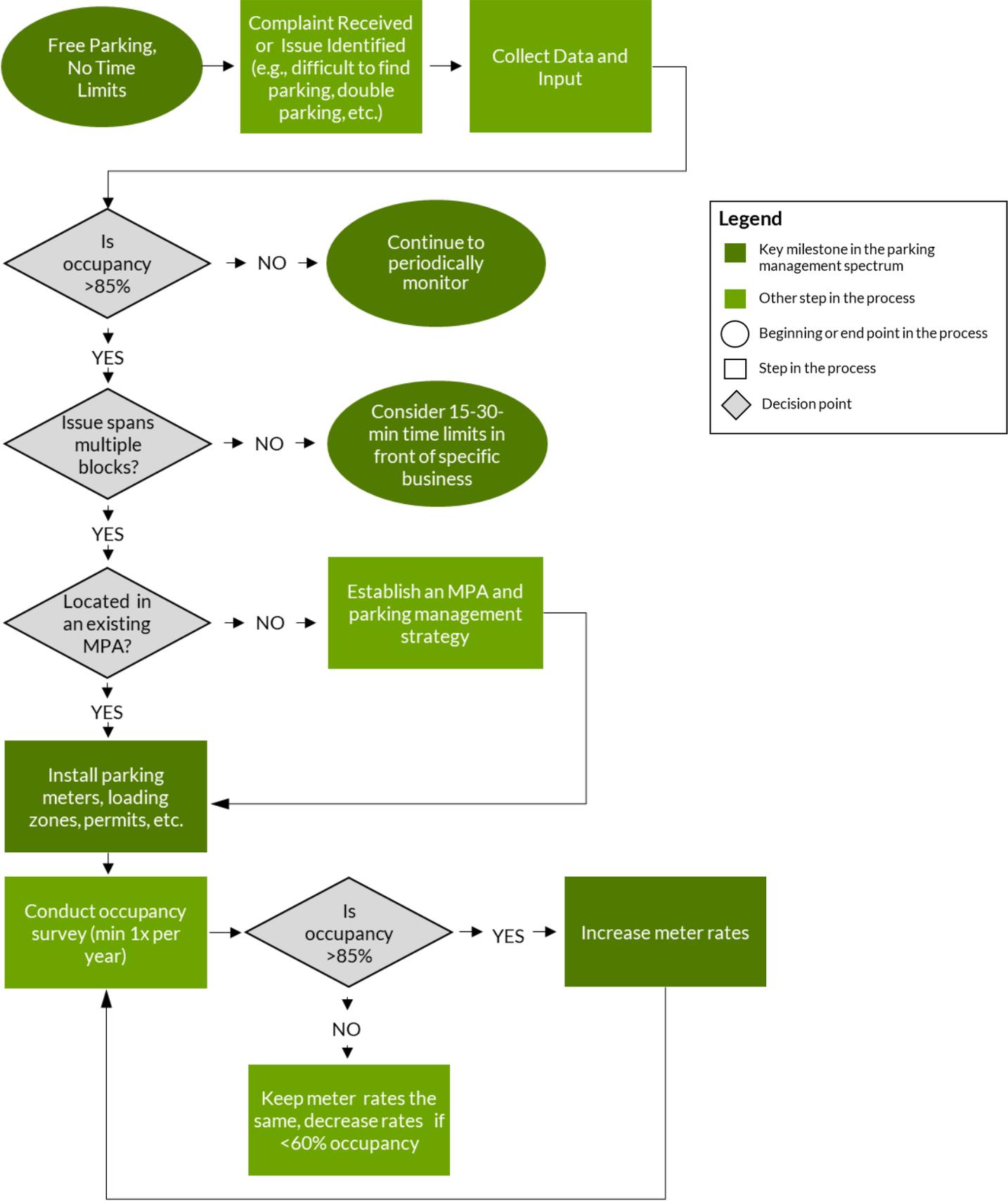


Figure 3.3. Process for Creating a MPA

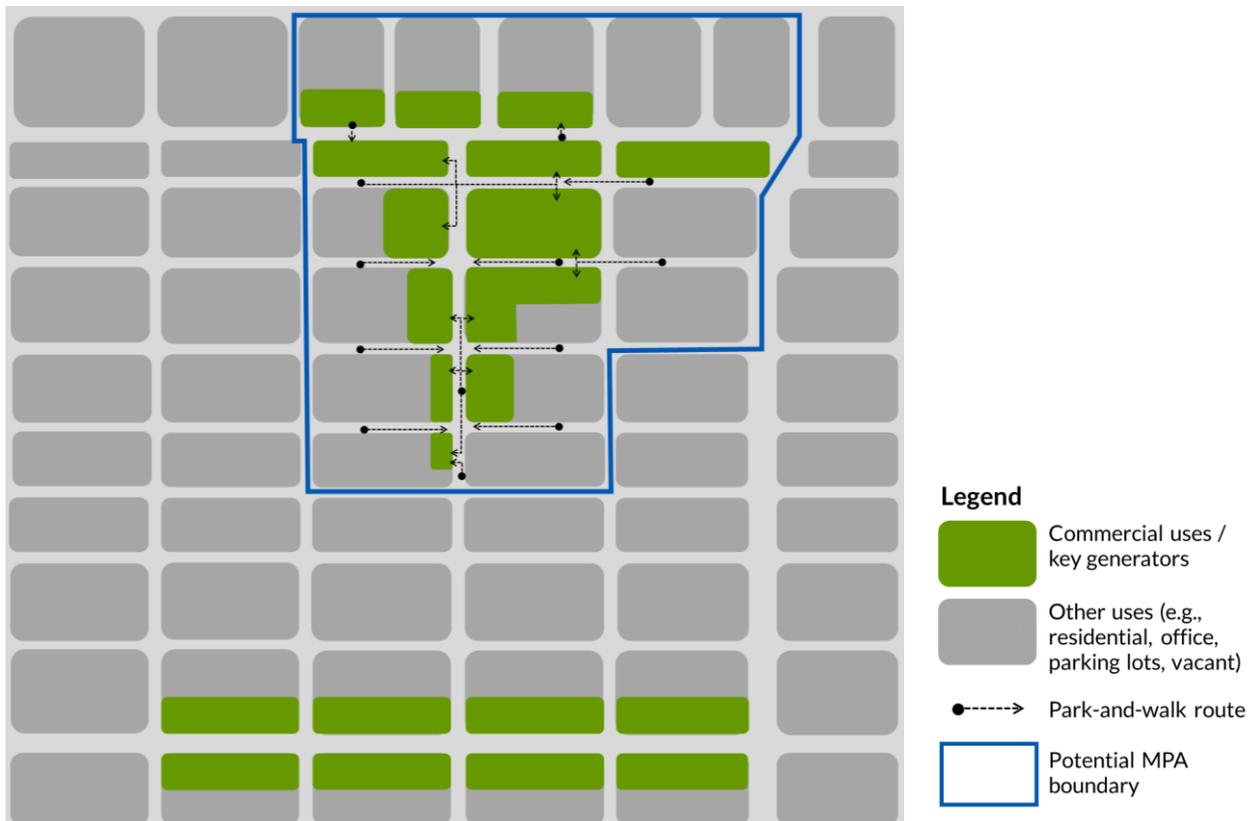


Defining the MPA Boundary

- The proposed MPA boundary will often follow that of the business district, particularly if a Parking Benefit District may be desired, but this is not a requirement. (For more information on Parking Benefit Districts, see page 52).
- MPA boundaries must be contiguous.
- The boundary should be centered around the key generator(s) that cause on-street parking to be above 85% occupancy on surrounding blocks and extend around those generators the distance that most people are willing to park and walk. The industry rule of thumb for how far people are generally willing to park and walk to their ultimate destinations is between 300 and 600 feet for retail customers, 1,200 to 1,500 feet for employee parking, and up to 2,000 feet for special event locations like stadiums and arenas (Smith & Butcher, 2008)¹. Factors that can impact the distance include the walking environment, the familiarity of the user with the area, the perception of security, the perception of barriers or conflicts along the walking route, and the cost of alternatives to walking. Observations as well as input from local businesses, residents, and visitors can help inform the distance that people are parking and walking to the generators.
- Highways, major roads, and railroads are often considered to be barriers to walking and can help define the boundaries of an MPA.

When the area of influence of those key generators overlap, like in a Venn diagram, they should be combined into a larger MPA. **Figure 3.4** provides an illustration of how common park-and-walk routes can be used to determine MPA boundaries, which is loosely based on the Bishop Arts area. **Figure 3.4** also demonstrates how two commercial and mixed-use areas may be just far enough apart that a determination could be made to not combine them into a larger MPAs. However, if future commercial or mixed-use developments are planned for the land in between the two areas, it could change the decision.

Figure 3.4. Example of Defining an MPA Boundary



Step 2: Document Existing Conditions

A detailed inventory of on-street parking supply and current parking management strategies is required to inform the extent of data collection efforts and identify areas that may need new management strategies. This includes documenting the existing curb uses, the number of parking stalls in the area classified by type of parking space (e.g., 2-hour parking, loading zone, valet zone, handicap parking, etc.), occupancy, the length of time people park, and any parking or loading challenges.

Local stakeholders and city staff should work together to identify the boundaries for the occupancy and turnover study which, depending on the size of the proposed MPA, may be a representative sample of the larger area.

Step 3: Recommend Parking and Curb Management Strategies

If the occupancy survey determines that occupancy does not exceed 85% for much of the day, the area would not be a candidate for an MPA and other eligible strategies should be pursued as appropriate, such as installing No Parking signs around crosswalks with visibility challenges or installing 30-minute parking signs in front of specific businesses.

If the occupancy survey determines that occupancy exceeds 85% and the issues span multiple blocks, the stakeholder group and city staff will develop a set of recommended strategies for the proposed MPA and refine the recommended boundary for the MPA as needed. The recommendations may consist of various strategies that are described in subsequent chapters in this document. Input on the recommendations should be collected from key stakeholders, adjacent neighborhood groups, and city staff.

Step 4: Approval and Implementation

Once the MPA boundary and recommendations are approved by the association and the Department of Transportation, the Department of Transportation will lead implementation of the on-street parking management strategies. If the need to create new parking supply is recommended, the association would be the primary lead for that action item, in coordination with the Office of Economic Development, the Planning and Urban Design Department, and the Department of Transportation.

Step 5: Monitoring

Regular monitoring of system performance helps to ensure that the implemented strategies have the intended effect. Department of Transportation data collection efforts should occur at least once every two years for each MPA, and annual performance monitoring is recommended. Modifications to MPA boundaries should involve notification of property owners and businesses impacted by the change in the boundary.

Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

- | |
|--|
| <p>3.1 Amend Chapter 28 of the Dallas City Code to remove Metered Parking Areas to allow for a more comprehensive and responsive approach.</p> |
| <p>3.2 Identify other areas of the city that would benefit from being a MPA and meet the criteria for MPAs, such as the Bishop Arts area, and initiate conversations with the local businesses. Topics of discussion might include location of existing needs and issues, and resources to conduct a parking management study and prepare a strategy.</p> |
| <p>3.3 Work with local business districts and stakeholders to create a parking management strategy for one or more existing or candidate MPAs.</p> |

PARKING TIME LIMITS

4

OBJECTIVE: Increase access to businesses in mixed-use and commercial districts by promoting adequate turnover of on-street parking stalls using time limits and parking meters.

The use of time limits and restrictions is a tool used to enact turnover and circulation within parking spaces, while providing greater exposure for adjacent businesses throughout the day. This section discusses the regulations and practices related to parking time limits, and the recommended criteria for implementing time limits going forward.

Existing Conditions

Section 28-26 of the City Code authorizes the traffic engineer to install time limits. Like parking meters, time limits are another tool to discourage people from parking for long periods of time in front of businesses.

Across Dallas, there are numerous blocks that have paid and unpaid time-limited parking stalls. However, there is no policy currently in place to decide when new time-limited parking restrictions should be implemented and how long the limits should be.

Paid parking stalls in the Central Business District MPA, Baylor MPA, Uptown/Victory MPA, and Southwestern Medical MPA have time limits that vary considerably between spaces, with time limits of 2-hours, 4-hours, 10-hours, and 12-hours in one MPA. Parking time limits may vary along individual blocks, such as along Broom Street, which has time limits of 2 hours and 4 hours. In the Cedars MPA, time limits are

all 2 hours. In the Deep Ellum MPA and Park Central MPA, time limits are all 4 hours. In the Jefferson MPA, most parking stalls have time limits of 2 hours; however, the parking stalls along Crawford Street have time limits of 4 hours.

Outside of the MPAs, 2-hour and 4-hour time limits can be found sporadically, such as along Fairmont Street and Routh Street in Uptown, Bishop Avenue in Bishop Arts, along Gaston next to Lakewood Shopping Center, and in Preston Center. There are also shorter-duration time limits, like 10-minute parking, in front of certain businesses that rely on short customer visits, like coffee shops, donut shops, and dry cleaners.

Time limits only work to promote turnover when there is regular enforcement of them. Without parking meters, it can be difficult to tell how long a vehicle has been parked in a given space. License Plate Recognition (LPR) technology can assist with this; however, the technology would need to be purchased and additional enforcement officers dedicated to this process.

The next section provides a framework for establishing new time-limited parking outside and inside of MPAs.

Criteria for Implementing Time Limits

With certain exceptions described in this section, it is recommended that limits on the amount of time a vehicle can remain parked in a given area be accompanied by the installation of parking meters, and vice versa. The exceptions include when the need to increase parking turnover is driven by businesses with short customer visits.

When determining what time limits to implement in paid parking zones and in special cases, it is recommended that 2-hour zones serve as the default. Additional data and land use information are needed to implement 15/30-minute or 4-hour zones. All other time limits should be phased out over time in order to simplify the on-street parking system and provide a clear, consistent message to customers and visitors. At least once every two years (24 months), the inventory of 15/30-minute spaces and 4-hour spaces will be updated to determine if conditions supporting their use have changed.

High Turnover (15-30 Minute Limit)

Some businesses rely on high customer turnover and 2-hour parking may not provide sufficient turnover to meet their customers' needs. For these businesses, such as coffee shops, dry cleaners, day cares, banks, post offices, or other businesses where a high percentage of customers stay for 15 minutes or less, a shorter base time may be necessary. By implementing a shorter duration time limit, such as 30 minutes rather than 2 hours, a parking space could turnover 16 times in an 8-hour period, rather than 4 times. If an average shopping trip takes 30 minutes and an average purchase level is \$5.00, a retailer could make an additional \$60 per day or a little more than \$15,000 per year. Furthermore, these locations should not be accompanied by parking meters, as the time it takes to pay the meter could be a deterrence to customers given the short nature of the trip.

When a high-turnover space has already been installed on the corner closest to the requesting business, the PME Division will review each application on a case-by-case basis to assess the need for an additional high turnover stall on the block, taking into account proximity of the next closest high-turnover space location as well as available occupancy, turnover, and citation data.

High turnover spaces will be considered when the following criteria are met:

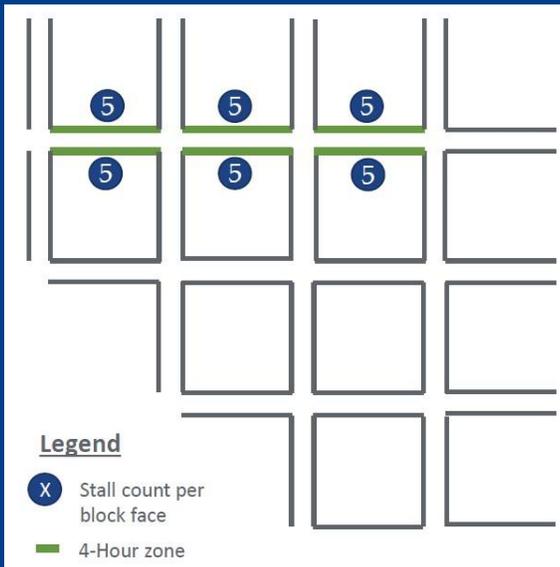
- On-street parking on the block is already managed with either time limits or meters; no high turnover stalls will be implemented in areas where on-street parking is unrestricted.
- The requesting business is recognized as a qualified high turnover business type or is able to demonstrate an average stay duration of 15 minutes or less.
- The requesting business does not have private off-street parking available for customers.
- On-street parking occupancy on the adjacent block exceeds 85% for at least two hours during the most recent round of data collection.



Low Turnover (2-4 Hour Limit)

Four-hour zones may be requested by businesses provided the following criteria are met:

- The proposed four-hour zone includes at least 40 on-street parking stalls on contiguous blocks for conversion from two-hour parking to four-hour parking.
- There are no public off-street parking facilities near the proposed 4-hour zone, or the average occupancy reaches or exceeds 85% during 3 or more hours during the day in all nearby off-street public parking areas of the proposed 4-hour zone.
- There are multiple identified destinations within the proposed 4-hour zone where the average visitor stay duration is between 2 and 4-hours.
- The average parking duration on each block proposed for conversion is 2-hours or longer based on citation and occupancy data.



For some business types and institutions where many visitors stay for two hours or longer, 2-hour time limits may be too restrictive to provide a convenient parking option. When there are no off-street public parking options within a reasonably short walk of the area, 4-hour time zones may be used to provide additional parking options.

Peak Hour Parking Restrictions

Peak parking restrictions indicates times when parking or stopping in the curb lane are not allowed during morning and afternoon commute times and are instead used as a travel lane or accessory left-turn lane to carry commuters in and out of the city’s business districts. Cars parked or stopped during these time contribute to traffic congestion and unsafe driving behaviors, increasing crash risks for all roadway users. Prior to implementation or modification of existing areas with peak parking restrictions, the city will need to determine appropriate locations for peak parking restricts based on traffic volumes and modal priorities for commuter corridors.

Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

- | |
|--|
| <p>4.1 Amend time restrictions when and where appropriate. To determine appropriateness, consult with businesses and residents and according to developed criteria, including measured vehicle occupancy on a set of blocks, with the goal of having one or two open spaces on each blockface throughout the day, nature of nearby land uses, the availability of alternative parking options, including nighttime and weekend paid parking, and other relevant factors. Match the meter time limits with the desired duration of parking in the district.</p> |
|--|

PAID PARKING

5

OBJECTIVE: Increase access to businesses in mixed-use and commercial districts by promoting adequate turnover of on-street parking stalls using time limits and parking meters.

The primary purpose of paid parking, also referred to as parking meters, is to promote parking turnover and increase access to shops and businesses in commercial and mixed-use areas with on-street parking. The decision about where to install or remove parking meters, time limits, or adjust meter rates should be based on occupancy surveys, with the goal of having at least one or two open parking spaces on each block face throughout the day. This section discusses existing parking meter policies and regulations, and recommended policies and action items to encourage turnover through pricing.

Existing Conditions

Paid (Metered) Parking Regulations

Parking meters are an important source of revenue for the city. In 2018 (prior to COVID-19), meters yielded approximately \$3,150,000 in revenue. Citations for meter violations yielded another \$540,000 the same year. The city's approximately 3,840 parking meters are spread across 34 routes in nine MPAs. Parking meters cannot be installed outside of the MPAs, the boundaries of which are established in the City Code.

Dallas City Code Article 11, Sections 28-114.1 and 28-114.2 establishes detailed parking meter regulations for individual street blocks in MPAs, including the meter rates and active meter time ranges. These regulations are summarized in **Figure 5.1**. In all MPAs, meters are active from Monday to Sunday.

In the Central Business District MPA, meter rates for individual blocks range from \$0.05/hour to \$1.50/hour for a parking space. Some blocks have split rates, meaning the price changes based on the time of day, with split rate meters charging as high as \$2.50/hour. The time ranges in which the meters are active changes depending on the block.

In the other eight MPAs, meter rates range from \$0.05/hour to \$1.25/hour for a parking space. There are only two split rates in the other eight MPAs, making split rate parking more consistent than in the Central Business District, where there are four different rates. Some of the parking meters generate much more revenue than others, in part because parking demand is higher on some blocks and partially because the meter rates are highly inconsistent. Fifty percent of all Dallas meters have not had their rates updated in the last 10-20 years and an additional 11% have not had their rates updated in over 20 years. As a result of this inconsistency, parking rates and time limits vary significantly within and across MPAs. Additionally, current meter rates are much lower than those in comparable cities. Together, these parking conditions suggest that Dallas's on-street parking system is currently operating well below its potential, leading to lost revenues.

Figure 5.1. Dallas Parking Meter Rates and Times

METERED PARKING AREAS	HOURLY RATES (VARIES BY BLOCK)	TIMES WHEN METERS ARE ACTIVE (VARIES BY BLOCK)	SPLIT RATES: LOCATION, RATES, & APPLICABLE TIMES
Central Business District	\$1.50	7am-6pm 7am-12am	Woodall Rogers Service Road: Mon - Fri: \$1.50 - 7am-9am \$2.00 - 9am-6pm \$2.50 - 6pm-12am Sat - Sun: \$2.00 - 7am-12am
	\$1.25		
	\$1.00		
	\$0.60		
	\$0.50		
	\$0.30		
	\$0.25		
	\$0.20		
	\$0.15		
Baylor	\$0.25	7am-6pm 7am-12am	None
	\$0.20		
	\$0.10		
	\$0.05		
Cedars	\$0.60	7am-6pm	None
Deep Ellum	\$0.50	6pm-12am 7am-12am 7am-6pm	None
	\$0.30		
	\$0.25		
	\$0.10		
Infomart	\$0.30	7am-12am	None
Jefferson	\$0.25	10am-4pm	None
	\$0.20		
	\$0.10		
Park Central	\$0.50	7am-6pm	None
Parkland	\$0.60	7am-6pm 7am-12am	None
	\$0.30		
	\$0.20		
Uptown/ Victory	\$1.25	7am-12am 7am-6pm 10am-4pm	Victory Ave: Mon - Sun: \$1.00 - 7am-5pm \$2.00 - 5pm-12am
	\$0.60		
	\$0.30		
	\$0.25		
	\$0.05		

Peer City Parking Rates Comparison

The Dallas Strategic Mobility Plan identified several peer cities against which Dallas is typically compared when evaluating mobility: San Antonio, Phoenix, Austin, Atlanta, and Charlotte. A survey of these cities' parking rates and policies was conducted, the results of which are summarized in **Figure 5.2**. A clear conclusion emerged: Dallas is dramatically underpricing its metered parking compared to its peer cities.

In general, Dallas's peer cities charge \$1.00 to \$2.00/hour for on-street parking, with Austin charging as high as \$5.00/hour depending on the duration of the vehicle's stay (known as variable pricing). The average on-street rate among the peer cities of \$1.90/hour is forty cents above Dallas's maximum rate, indicating that a baseline rate adjustment is overdue.

Figure 5.2. Survey of Parking Meter Rates and Policies in Peer Cities

CITY	DALLAS	SAN ANTONIO	PHOENIX	AUSTIN	ATLANTA	CHARLOTTE
Population	1,348,890	1,434,625	1,608,139	961,855	498,715	874,579
Population Density (people/sq. mi.)	3,970.40	2,875.86	3,105.35	3,006.36	3,600	2,846.38
Price Range On-Street (per hour)	\$0.05 - \$1.50	\$1.80	\$1.00 - \$1.50	\$2.00 - \$5.00	\$2.00	\$1.00
Period of Review for Adjustment	None	12-18	None	12 Months	None	None
Adjustment Range (per hour)	None	Unknown	Unknown	+/- \$0.25, \$0.50	None	None
Time Limit Range	1 Hour 2 Hour 4 Hours 6 Hours	15/30 Minutes 2 Hours 8 Hours 10 Hours 24 Hours	15/30 Minutes 2 Hours 4 Hours 8 Hours	10 Hours	2 hours 3 Hours 4 Hours	15 Minutes 1 Hour 2 Hours
Rate Type	Fixed	Fixed	Fixed	Variable	Fixed	Fixed

Figure 5.3. Parking Meter Rates and Policies of Cities with Performance-Based Pricing

CITY	SEATTLE	SAN FRANCISCO	PORTLAND
Price Range	\$0.50 - \$5.00	\$0.25 - \$6.00	\$1.00 - \$5.00
Adjustment	+/- \$0.50	+/- \$0.25	+/- \$0.20, \$0.40, \$0.60
Guidance	> 90%: Increase > 85%: Watch for 1 Year < 70%: Watch for 1 Year < 65%: Decrease	> 80%: Increase < 60%: Decrease < 30%: Decrease	> 85%: Increase < 65%: Decrease
Period	12 Months	2 Months	12 Months
Time Limits	2 Hours 3 Hours (after 5pm) 4 Hours 10 Hours	4 Hours No Limit	15/30 Minutes 2 Hours 4 Hours

In general, the cities surveyed in **Figure 5.3** (plus Austin) do not exceed a maximum rate adjustment of \$0.50-\$0.60/hour up or down from the current rate. Most cities adjust in increments of \$0.25 or \$0.50/hour. Dallas was also the only city surveyed that specifies in its city code the areas of the city in which meters may be installed, and what rate they must be set at in different parts of the city.

Overview of the Recommendations

The following sections provide recommendations to help Dallas move towards a performance-based parking pricing framework, in which encouraging economic vitality by promoting parking turnover is the goal. The performance metric is to have one to two parking spaces available on a block face throughout the

day in commercial and mixed-use areas. Topics covered in the following sections include:

- When to install new meters
- When to adjust parking meter rates, and by how much
- When to establish and adjust event parking rates
- How parking meter revenues could be used (Parking Benefit Districts)
- Parking meter technology considerations
- Methods for collecting occupancy data to make data-driven decisions

Installing Parking Meters

Parking meters should be considered where parking demand is high. The following section presents a series of requirements that must be met to install new meters within an MPA. Locations that meet these requirements do not necessarily need to have parking meters, but such locations would have this option as a management tool.

Warrants for Installing New Parking Meters

Requirement 1: Located in an MPA

The location must be within an existing MPA, along corridors that are lined by commercial, office, mixed-use, or medium-to-high-density residential land uses. Parking meters should not be installed on low-density residential streets.

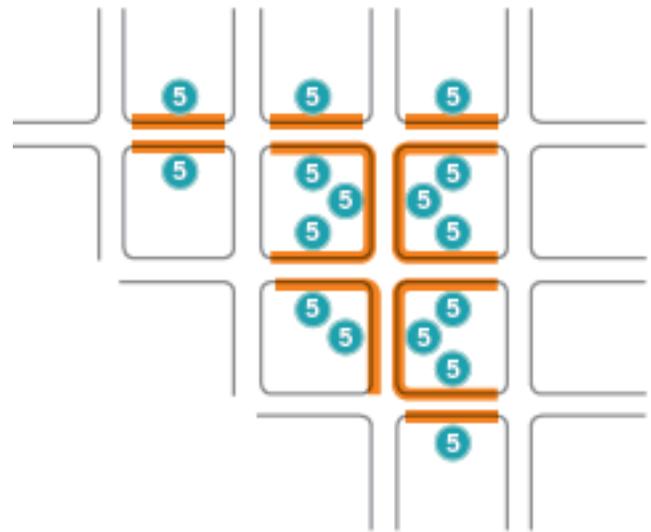
Requirement 2: On-Street Parking Already Permitted

On-street parking must already be an allowable use of the curb for parking meters to be installed. The decision about whether to allow on-street parking requires a separate engineering review.

Requirement 3: Contiguity and Minimum Number of Meters

If parking meters already exist in the MPA, new meters should only be installed on blocks adjacent to existing metered blocks. If parking meters have not yet been installed in the MPA or the part of the MPA where the parking meter is proposed to be installed, a new paid parking zone should be established. "Paid parking zones" are a set of contiguous blocks in an MPA that contain metered parking stalls. An MPA may be split up into multiple paid parking zones based on parking meter rate and the hours in which meters are active (i.e., pay-to-park hours, or hours when payment must be paid to park). It is recommended that paid parking zones, when established, include a minimum of 80 metered parking stalls and/or cover an area of at least

16 contiguous block faces or eight contiguous blocks. By ensuring that blocks with paid parking are contiguous, the traveling and parking experience in an area is more predictable and easier to navigate for visitors. Furthermore, requiring a minimum number of paid parking stalls ensures the necessary enforcement of the parking meters will be cost effective.



Requirement 4: Parking Occupancy Warrants Met

Effective parking management ensures that there are typically one to two open parking stalls per block. According to best practice, this corresponds to an occupancy rate of approximately 85% during peak hours. Parking meters should not be installed unless the following occupancy warrants are met, or the installation of parking meters could bring greater harm to adjacent businesses than help.

- Average occupancy of parking stalls along the block reaches or exceeds 85% during 3 or more hours during the day, and
- Average occupancy of parking stalls along the block reaches or exceeds 70% during 5 or more hours during the day

The area included within the calculation must be observed over at least two days. This two-tiered approach is intended to avoid situations where parking meters are heavily used for a small portion of the day (e.g., around dinnertime), but remain largely unused for most of the day. In those situations, it may be difficult to recoup the cost of installing, maintaining, and operating the parking meters.

Hours in which parking meters are active will be established by the Department of Transportation, based on data. It is recommended that the starting point for discussions about pay-to-park hours for an MPA be 8:00 a.m. to 8:00 p.m., Monday through Saturday. Delaying operations in the morning encourages impaired drivers to leave their cars overnight without concern of getting a parking ticket or being towed. Hours should be as consistent as possible between MPAs and within individual MPAs, to provide greater predictability for the traveling public. Hours may be reduced or extended based on occupancy data and parking enforcement resources,

with occupancy rates of 70% or higher needed to justify extended hours and occupancy rates of less than 60% needed to justify reduced hours.

Requirement 5: Outreach to Surrounding Areas

Implementing paid on-street parking will, by design, shift parking demands within an area. Parking demands are likely to increase in surrounding areas with unregulated on-street parking. Prior to installing parking meters, a written notice should be posted on at least two utility or traffic poles in the affected area. It may be necessary to measure parking demands in nearby single-family residential areas before and after the installation of meters to determine if a Resident Parking Only (RPO) zone is needed. The RPO zone creation process is independent from the parking meter installation process and should follow the established procedures outlined in the Dallas City Code Section 28-121.

Figure 5.4. Summary of Warrants for Installing Parking Meters

REQUIREMENT 1	DATA NEEDED
Has a Metered Parking Area been established?	Name of Managed Parking Area
REQUIREMENT 2	
Is on-street parking already permitted?	Existing Curb Use
REQUIREMENT 3	
Is the location along or adjacent to block faces with parking meters in a paid parking zone that has at least 80 metered stalls and/or meters on at least 16 contiguous block faces?	Name of Adjacent Block with Parking Meters
	# Stalls in Paid Parking Zone
	# Block Faces in Paid Parking Zone
REQUIREMENT 4	
Does average occupancy of parking stalls along the block: <ul style="list-style-type: none"> Reach or exceed 85% occupancy for ≥3 over ≥2 days, and Reach or exceed 70% occupancy for ≥5 hours over ≥2 days 	# Hours ≥ 85%
	# Hours ≥ 70%
REQUIREMENT 5	
Has a written notice been posted in the affected area?	Location of Public Notice

Adjusting Parking Meter Rate

Increasing rates has been shown by several studies to decrease parking occupancy and decreasing rates has been shown to increase parking occupancy (Wilson, 2015). The goal of Dallas's performance-based parking pricing program is to set the **LOWEST PRICE** that achieves the goal of one or two open parking spaces on each block face during peak times, thereby making it easier for patrons to access businesses, mitigating the need to circle the block to find parking, and reducing traffic congestion. If the price is too high, such that many parking spaces remain vacant, nearby stores lose customers, and the city loses tax revenue. If the price is too low and no spaces are vacant, people will be discouraged from visiting an area. Therefore, correctly pricing parking based on demand is the key tool by which the city will meet its performance goal.

Currently, hourly parking meter rates in Dallas vary between \$0.05 and \$1.50/hour. To allow for a performance-based pricing approach, and based on the research into peer cities, an hourly rate range between \$1.00 and \$6.00 per hour is recommended for approval by City Council. To maintain a flexible range of rates, they should be adjusted up or down by \$0.25 or \$0.50/hour at least once a year as needed. These adjustment increments and timeframes are intended to ensure that prices will not rapidly increase or decrease and acknowledge the city's current resources to conduct occupancy surveys and adjust rates each year. It is further recommended that the Department of Transportation Director have the authority to make meter rate adjustments that remain within this range. The Director's decision would be informed by the data metrics described in this chapter.

Figure 5.5 shows the amount that rates should be adjusted up or down based on the measure occupancy to meet the city's goal. These adjustment amounts are based on the findings in *Parking Management for Smart Growth* (Wilson, 2015), that parking elasticity values typically range from -0.1 to -0.4, with -0.3 being the most common value. That is a 10% price increase, expected to reduce demand by 3%.

The following data should be collected within each paid parking zone in each MPA as inputs into the performance-based meter rate adjustment process:

- Hourly occupancy percentage by block face, collected over at least two days during hours when meters are active
- Average duration of stay by block and posted time limit, collected over at least two days during hours when meters are enforced
- Violation rates, calculated based on observed duration of stay data and posted time limits
- Annual on-street meter transactions (as a check to review the total number and distribution of transactions between blocks within the zone)
- Citation rates (as a check to confirm levels of enforcement)

This data should be collected at least once every year using consistent processes to allow for year-to-year comparisons. Some paid parking zones are too large to allow for cost-effective data collection across all parking stalls. Large zones may be sampled using a statistically valid representation of the larger paid parking zone.

Meter rates should be REDUCED according to Figure 5.5 if occupancy for the paid parking zone is less than 65%. If average occupancy remains less than 65% for two contiguous adjustment periods and rates are at the minimum level, staff should consider relocating the parking meters to an area of higher demand within the MPA.

Meter rates should be **INCREASED** according to Figure 5.5 if:

- Average occupancy in the paid parking zone reaches or exceeds 85% during 3 or more hours during the day, and
- Average occupancy in the paid parking zone reaches or exceeds 70% during 5 or more hours during the day.

In some cases, known land use changes, low citation rates, or any number of other local factors could lead to a delayed or modified rate adjustment compared to the outcome of the data-driven process. For example, it should be taken into special consideration that pricing in proximity to government buildings remain affordable to not burden residents trying to access services. These recommendations should be documented and submitted to the Department of Transportation Director within 90 days of the completed data collection report for consideration.

Figure 5.5. Recommended Hourly Rate Adjustments Based on Average Occupancy

STARTING RATE	DECREASE BY \$0.50	DECREASE BY \$0.25	NO CHANGE	INCREASE BY \$0.25	INCREASE BY \$0.50
\$1.00	-	-	< 85%	85% - 97%	≥ 97%
\$1.25	-	61% - 65%	65% - 85%	85% - 95%	≥ 95%
\$1.50	< 61%	61% - 65%	65% - 85%	85% - 94%	≥ 93%
\$1.75	< 57%	57% - 65%	65% - 85%	85% - 93%	≥ 92%
\$2.00	< 58%	58% - 65%	65% - 85%	85% - 92%	≥ 91%
\$2.25	< 59%	59% - 65%	65% - 85%	85% - 91%	≥ 90%
\$2.50	< 60%	60% - 65%	65% - 85%	85% - 90%	≥ 90%
\$2.75	< 60%	60% - 65%	65% - 85%	85% - 90%	≥ 90%
\$3.00	< 60%	60% - 65%	65% - 85%	85% - 90%	≥ 89%
\$3.25	< 61%	61% - 65%	65% - 85%	85% - 89%	≥ 89%
\$3.50	< 61%	61% - 65%	65% - 85%	85% - 89%	≥ 89%
\$3.75	< 61%	61% - 65%	65% - 85%	85% - 89%	≥ 89%
\$4.00	< 61%	61% - 65%	65% - 85%	85% - 89%	≥ 89%
\$4.25	< 62%	62% - 65%	65% - 85%	85% - 88%	≥ 88%
\$4.50	< 62%	62% - 65%	65% - 85%	85% - 88%	≥ 88%
\$4.75	< 62%	62% - 65%	65% - 85%	85% - 88%	≥ 88%
\$5.00	< 62%	62% - 65%	65% - 85%	85% - 88%	≥ 88%
\$5.25	< 62%	62% - 65%	65% - 85%	85% - 88%	≥ 88%
\$5.50	< 62%	62% - 65%	65% - 85%	85% - 88%	≥ 88%
\$5.75	< 62%	62% - 65%	65% - 85%	85% - 86%	-
\$6.00	< 63%	63% - 65%	65% - 85%	-	-

Rates may vary between paid parking zones in an MPA but should be consistent within paid parking zones to provide predictability for users. The intended effect of rate adjustments is primarily to redistribute parking between areas of higher and lower demand within an MPA. In some cases, the boundaries of paid parking zones may need to be adjusted as part of rate

adjustment process. Economic vitality is supported by providing visitors with tiered parking pricing options within each MPA. Regular data collection can also identify if previous rate changes resulted in a shift in parking demand or an overall reduction in parking demand within the MPA.

Establishing Event Parking Rates

Dallas has many large event venues, such as the American Airlines Center, Cotton Bowl/Fair Park, and Dallas Convention Center. Because large events draw many more people than a typical weekday, they can cause gridlock around the event venues as drivers struggle to find parking. Many cities raise the cost of parking during events to maximize their revenue and encourage attendees to use other modes of transportation to access event locations, alleviating congestion.

Presently, Dallas does not have event parking rates in the Dallas City Code. Establishing and codifying event parking rates would enable the regulation of event-day parking by the Department of Transportation, helping Dallas maximize its on-street parking efficiency. It is recommended that City Council adopt event parking rates into the code, with a minimum hourly event rate of \$3.00 and a maximum hourly rate of \$10.00. The initial event rate for an area should be based on the normal meter rate for that paid parking zone, as shown in **Figure 5.6**.

Implementing Event Parking Rates

To implement event parking rates, decisions regarding pricing, time limits, and revenue allocation are subject to the following requirements.

Requirement 1: Located in an MPA

The area proposed for event on-street parking rates should be located in an MPA.

Requirement 2: Event Size

Only events which are expected to draw at least 10,000 attendees should be considered for increased event on-street parking rates.

Requirement 3: Data Driven

A parking demand study during a representative event should be completed to inform the boundaries of where event parking rates would be implemented within the MPA.

Figure 5.6. Event Parking Rate Recommendations

NORMAL RATE FOR THE PAID PARKING ZONE	EVENT RATE (2 HOURS BEFORE AND AFTER EVENT TIME)
\$1.00	\$3.00
\$1.25	
\$1.50	
\$1.75	
\$2.00	
\$2.25	
\$2.50	\$7.00
\$2.75	
\$3.00	
\$3.25	
\$3.50	
\$3.75	
\$4.00	\$10.00
\$4.25	
\$4.50	
\$4.75	
\$5.00	
\$5.25	
\$5.50	\$10.00
\$5.75	
\$6.00	

Adjusting Event Parking Rates

As with the performance-based pricing for standard meter rates it is recommended that the Department of Transportation Director have the authority to make meter rate adjustments that remain within the range of \$3.00/hour to \$10.00/hour, with input from local stakeholders, based on a data-driven process. Rates should be adjusted up or down from the starting rates shown in **Figure 5.6** by \$1.00, \$2.00, or \$3.00/hour as recommended in **Figure 5.7** based on occupancy data. A maximum annual adjustment of +/- \$3.00/hour is recommended. Using these parameters and an assumed elasticity factor of -0.30 to inform the magnitude of adjustment, the following data-driven rate adjustment process should be used to inform rate adjustment recommendations for the Director's review:

- Meter rates should be **REDUCED** according to **Figure 5.7** if the average occupancy in the paid parking zone for the event area is less than 65%.

- Meter rates should be **INCREASED** according to **Figure 5.7** if the average occupancy in the paid parking zone for the event area exceeds 85% during two or more hours during the event.

Even with increased rates, if on-street parking is priced lower than event rates in nearby off-street facilities, it is likely that occupancies will continue to exceed 85% during events. The proposed rate adjustment process is therefore presented as a guide to inform the magnitude of rate adjustments, and in many cases, the Department of Transportation Director may elect to maintain existing event rates or implement a lower rate increase than suggested by **Figures 5.7**. The primary consideration when determining the rate adjustment should be the effectiveness of the proposed rate in encouraging the use of alternative modes for travel to and from events.

Figure 5.7. Recommended Hourly Rate Adjustments for Event Parking Areas

STARTING RATE	DECREASE BY \$3.00	DECREASE BY \$2.00	DECREASE BY \$1.00	NO CHANGE	INCREASE BY \$1.00	INCREASE BY \$2.00	INCREASE BY \$3.00
\$ 3.00	-	-	-	< 85%	85% - 95%	≥ 95%	-
\$ 4.00	-	-	< 65 %	65% - 85%	85% - 93%	≥ 93%	-
\$ 5.00	-	< 59%	59% - 65%	65% - 85%	85% - 91%	91% - 97%	≥ 97%
\$ 6.00	< 55%	55% - 60%	60% - 65%	65% - 85%	85% - 90%	90% - 95%	≥ 95%
\$ 7.00	< 56%	56% - 61%	61% - 65%	65% - 85%	85% - 89%	89% - 94%	≥ 94%
\$ 8.00	< 57%	57% - 61%	61% - 65%	65% - 85%	85% - 89%	≥ 89%	-
\$ 9.00	< 58%	58% - 62%	62% - 65%	65% - 85%	≥ 85%	-	-
\$ 10.00	< 59%	59% - 62%	62% - 65%	≥ 65%	-	-	-

Parking Benefit Districts

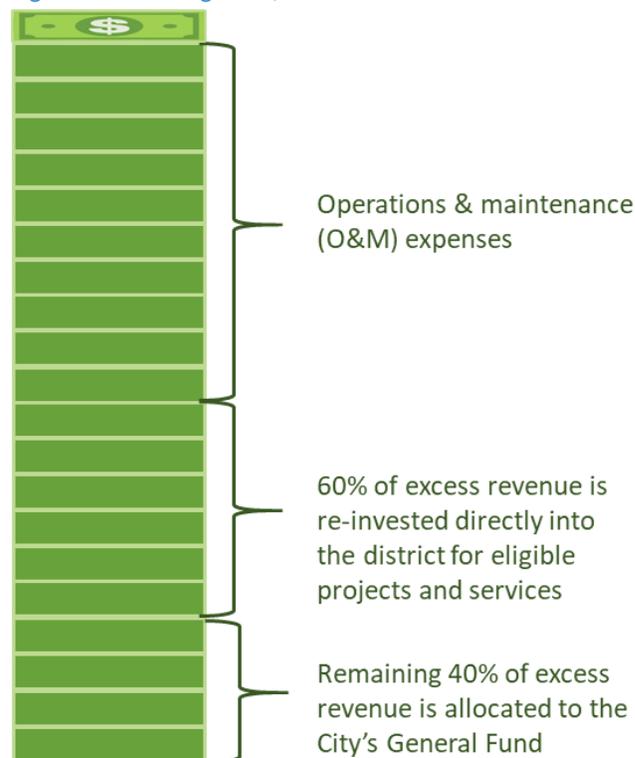
The benefits of parking meters and changing parking rates, such as making it easier for business patrons to find a parking space and providing more customers with easy access to businesses, may not be enough to assuage the concerns of business owners when it comes to installing meters or increasing meter rates. However, if meter revenue is dedicated to specific, additional public services in metered areas, residents and business owners will be much more inclined to support performance-based pricing. Directing a certain portion of the meter revenue back into the neighborhood is done through the creation of a Parking Benefit District (PBD).

The amount of revenue generated that will go to the PBD is typically 50-60% of the remaining revenue from parking meters after the cost of operating and maintaining the parking meters and PBD has been paid for. Through conversations with stakeholders, 60% was determined to be the optimal number for Dallas. By having 40% of the remaining revenue go back to the general fund for citywide services that also benefit less affluent neighborhoods, concerns about inequality can be avoided.

The boundaries, decision-making structure, financing framework, and improvements and programs that the PBD can fund must be defined through a separate ordinance adopted by City Council. The geographic boundaries are often the same as the MPA or, if applicable, the Public Improvement District (PID) for that area.

The following steps outline the considerations and process that should be used to create PBDs in Dallas. It is based on the process used by the City of Austin.

Figure 5.8. Parking Benefit District Revenue Allocation



PBD Implementation Process

Step 1: Initiate Process

A representative of a Public Improvement District, business association, or neighborhood association whose

boundaries are completely or partially located within the proposed PBD may make a request to the Director of Transportation for the creation of a PBD.

The Director shall ensure the following minimum criteria are met for the creation of a PBD before continuing to Step 2.

- a. The proposed boundaries of the PBD must be located within the boundaries of an existing MPA. The PBD must include enough paid parking spaces to generate enough revenue for meaningful programs or improvements once all annual expenses are paid, including the maintenance and operations of the paid parking in the PBD. At the time that a district is created, the required paid parking spaces may include both existing and new spaces; however, the minimum number of paid parking spaces required for the PBD should be calculated at the outset. For example, assuming a meter rate of \$1.50/hour and a goal of 85% occupancy, a PBD would require approximately 300 paid parking spaces to generate \$500,000 in revenue annually.
- b. The applicant must have support from all Public Improvement Districts, business associations, and neighborhood associations that are wholly or partially within the PBD.

Step 2: Pre-application Meeting

Following the receipt of the request, city staff will arrange pre-application meeting with the applicant and any other relevant stakeholders to discuss:

- Justification for the need to create a PBD.
- The proposed boundaries of the PBD.
- Proposed makeup of the advisory committee that will govern the PBD. This could be an existing PID Board.
- Proposed programs and projects to be funded by revenue from the PBD.
- The number of existing paid parking spaces and the minimum number of paid parking spaces that will be needed within the PBD to generate sufficient revenue to support the PBD.

- Other parking management strategies.

PBD Advisory Committee

The purpose of the advisory committee is to provide oversight and make a recommendation to the Department of Transportation Director on how the PBD revenue from the previous year should be spent. All committee meetings would be open to the public and subject to public records law. The committee could take one of several potential forms, such as:

- An existing community organization, such as a PID Board.
- A newly created appointed or volunteer committee, which could include residents, property owners, and businesses.
- A non-profit community development organization.

Revenue Expenditure Options

A defined list of PBD revenue expenditures should be defined in the adopting ordinance. Examples of eligible projects and programs are listed below. The list is not intended to be comprehensive but rather a starting point.

- Sidewalk widening, repairs, or power-washing and graffiti removal
- Tree planting and landscaping
- Lighting
- Wayfinding
- Streetcar operations
- Bicycle infrastructure and amenities
- Transit passes for employees of businesses in the PBD
- Transit infrastructure and amenities
- Public safety
- Street maintenance
- Parking structure

Note: Because of the nature of performance-based pricing, prices may not increase at the same rate as inflation. Parking demand is also susceptible to changes in the economy or weather. Therefore, caution should be

used when using PBD revenues to fund ongoing and costly projects or programs where the cost of maintenance and operation will continue to rise over time. Examples include parking structures or transit service, which should be funded principally by a more stable form of revenue like a Public Improvement District.

All parking revenue is collected and distributed by the City and will be retained by the City. All improvements or programs funded by parking revenue expenditures must follow city purchasing procedures.

Step 3: Submit the Application

After the pre-application meeting, the applicant may submit a formal application for the creation of a PBD. The application should address the following, at minimum:

- The boundaries of the proposed district identified by streets and static land features.
- A justification for the proposed district.
- A visual representation of the proposed block faces that have paid parking spaces or that are proposed to have paid parking spaces.
- The minimum number of paid parking spaces the district will have.
- The proposed makeup of the advisory committee.
- The proposed types of projects and programs that may be funded with the PBD revenue.
- Letters of support or relevant community meeting notes.

Step 4: Community Meeting

The applicant is required to convene a community meeting after the application is submitted. At least two weeks before the meeting the applicant must coordinate with Department of Transportation staff to send notification of the meeting by e-mail to all registered neighborhood organizations whose boundaries are in proximity to the proposed district boundaries, place at least two signs providing notification of the meeting on each block face and distribute flyers within the proposed district.

Step 5: City Council Approval

City staff will draft the ordinance that will be taken to City Council to create the PBD. The ordinance would include the boundaries of the PBD, the net percent of the public paid parking revenue that would go back to the PBD (60%), the minimum number of paid parking spaces that the PBD must contain, the defined list of PBD revenue expenditures, and the makeup and role of the advisory committee. City Council would reserve the right to terminate a PBD if paid parking spaces do not generate more than the amount needed to pay all annual expenses.

Step 6: Implementation

The committee will meet regularly as a group and with the broader community to compile a list of recommended programs and projects for proposed revenue expenditure. city staff will work with the committee to identify eligible projects and programs. Once a list of projects and programs for the year is finalized, an annual work plan will be developed to document the allocation of funds. Department of Transportation staff will attend the committee meetings and support committee activities.

PBD Success Stories



Boulder, CO

Boulder experienced a 12% increase in carpooling, reducing parking demand by 850 spaces. Funded projects for their district, including employee transit passes, a wifi network, and Pearl Street Mall improvements.



Old Pasadena, CA

Old Pasadena borrowed against future meter revenues and funded streetscape, parking, maintenance, and safety projects, reversing the decline in the district. A sales tax revenue increase created a cycle of reinvestment, making the city a popular destination. The first year of the PBD resulted in a 100% increase in sales tax revenues.



San Diego, CA

Funds from the PBD in San Diego were used for to revitalize their historic district through infrastructure improvements, including directional signs, landscaping, and pedestrian improvements.



Austin, TX

The Austin PBD experienced a 10% growth in sales tax and 16% growth in mixed beverage receipts. Projects include sidewalk and streetscape improvements.

Parking Meter Technology and Infrastructure

Dallas owns and operates 3,840 parking meters, which are a combination of single and multi-space meters. Approximately 94% of the existing parking meters operate with digital technology, allowing electronic payment methods. In order to continue operating effectively and efficiently, a continued focus on technological enhancements will need to be prioritized. A recent shift has been the implementation of 4G and 5G networks, and the impending suspension of support for meters that use the 2G network. These network shifts require enhancements to the parking meters themselves, which come at a cost. Planning for the parking meter maintenance and capital upgrades associated with technological advances will be critical to ensuring ease of use for customers, implementation of variable parking meter rate, and efficiency in enforcement.

The following meter technologies will be needed as part of all future upgrades (at minimum):

- Pay by credit card and pay by-cell options in all areas
- Ability to remotely program on-street rates
- Wireless communication enabled to allow for more streamlined enforcement
- Ability to show vacant stalls in a parking zone in a public-facing online platform for smartphone application.
- Option for in-meter or camera-based license plate recognition (LPR)*
- Option to communicate with an in-meter or 3rd party digital count system*

*The last two features would potentially lower the labor costs for meter enforcement and allow city staff to better monitor parking occupancy rates.

Selecting the Type of Parking Meter

The types of parking payment options include:

- Single-Space Meters: Coin-Operated Meters and Smart Meters
- Multi-Space Smart Meters: Pay-And-Display, Pay-By-Plate, Pay-by-Space
- Pay-by-Phone Only

An evaluation of the pros and cons of each option was conducted. Multi-space pay-by-plate meters have the greatest number of pros and least number of cons, followed by single-space smart meters. For the detailed list of pros and cons, see Appendix 1. There will likely need to be flexibility in the use of single-space versus multi-space meters, based on the circumstances of the area. However, it is recommended that the types of meters used in Dallas be kept to a minimum, such as one style of single-space smart meter and one-style of pay-by-plate multi-space meter.

Data Collection - Making Data-Driven Decisions

Data collection is a necessary and nuanced component of curb management as it guides decision makers in determining how the curb is used, by what means curb space can be used more efficiently, where enforcement is needed, and in what manner can safety be improved and congestion reduced. Methods for collecting parking data vary widely, ranging in cost, efficiency, and data accessibility. Although using technology is more convenient and accurate, in some cases, manual data collection may be more appropriate. When selecting a data collection method, various factors should be considered to ensure the method is appropriate based on the capacity of the organization, such as:



- Technology integration
- Reliability of the technology or manual data collection methods
- Purchase, installation, and maintenance costs
- Staffing requirements (FHWA, 2020)

This section discusses four data collection methods typically used when managing the curb, grouped by the level of expense.

High Tech Data Collection

Parking Space Sensors

Parking space sensors typically use sensor technology or digital-camera technology to detect when a vehicle is present in the space. The sensors can be placed in pavement, affixed to single-space parking meters, or hung from ceilings in parking garages (FHWA, 2020).

Cities have found that vehicle sensors have benefited the community by guiding enforcement efforts, simplifying data collection, and by directing motorists to available spaces through smartphone applications or online mapping tools. These data sources are indirectly helping to reduce congestion and vehicle emissions and enhance the parking experience. While sensors provide a continuous, in-depth view into the use of the on-street parking system, they have high operation and maintenance costs that have made them prohibitively expensive for most cities.

License Plate Recognition Technology

License Plate Recognition (LPR) technology automates the enforcement and data collection process by taking pictures of the license plates of parked vehicles. The systems can be hand-held or vehicle-mounted and work in daylight and low-light conditions. It is important to note that vehicle mounted systems can result in errors if the offender's license plate is obscured or if the respective vehicle is moving too fast (FHWA, 2020).

LPR can be used to enhance enforcement practices by collecting parking behavior data to assist in parking

management decisions that are data driven and specific to how the parking system operates.

With LPR, it can be determined how many vehicles are parked in both on-street and off-street facilities each hour, how long vehicles are parked and their movement behaviors throughout the area, and if a vehicle lacks a necessary permit. LPR units can also assist officers with identifying offenders that have been issued multiple citations, identifying stolen or wanted vehicles, and preventing fraud by replacing printed permits with license plates (FHWA, 2020). If the data indicates a pattern of violations in a certain area, management practices or policies can be adjusted accordingly.

LPR technology is currently used on a limited scale by the city, but there are significant opportunities for expanding this camera technology to additional city vehicles, while reducing staffing requirements for enforcement personnel.

Medium-Tech Data Collection

Manual Data Collection

Manual data collection requires personnel to go out into the field to conduct observations along a block face for a specified period or review collected video footage to identify curb user behavior as well as the frequency and volume. Data collection efforts could be conducted annually or throughout the year, depending on how often parking rates are adjusted and how often the city would like to test how changes in practices or policies are impacting the use of the curb. Collection should be conducted at similar times of year so that data comparisons are for similar conditions seasonally.

As manual collection can be a large undertaking, small neighborhoods are ideal for this method as the entire

inventory within the area can be covered. Large neighborhoods can also use this method if the technology is not available. However, if periodic counts are required, it is recommended to only count the inventory of a sample area within the neighborhood that is representative of the larger neighborhood (FHWA, 2020)².

While manual data collection is prone to error, takes time, and does not provide real-time data, the costs associated with it are relatively low when compared to the high-tech approaches, especially if data collection is conducted using existing staff rather than a third party.

Low-Tech Data Collection

Revenue & Transaction Data

A recent performance pricing pilot study at Carnegie-Mellon University relied on monthly revenue and transaction data gathered from the system's pay stations to identify parking occupancy and apply rate adjustments accordingly. This same strategy could be used as a low-cost option to estimate approximate parking occupancy, using the data generated by the existing pay-by-space parking meters. In this strategy, the total hours parked in a month (determined through meter revenue data) would be compared to the total hours of parking available for the month to identify approximate parking occupancy. The formula below represents how parking occupancy would be calculated.

$$\text{Parking Occupancy Estimate} = \frac{[\text{Hours of Enforcement}] \times [\text{Days in Month}] \times [\text{\# of Meters}]}{\text{Total Hours Parked in a Month}}$$

² (FHWA), F. H. (2020, July 1). *Contemporary Approaches to Parking Pricing: A Primer*. Retrieved from United States Department of Transportation - Federal Highway Administration: https://ops.fhwa.dot.gov/publications/fhwahop12026/sec_3.htm

Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

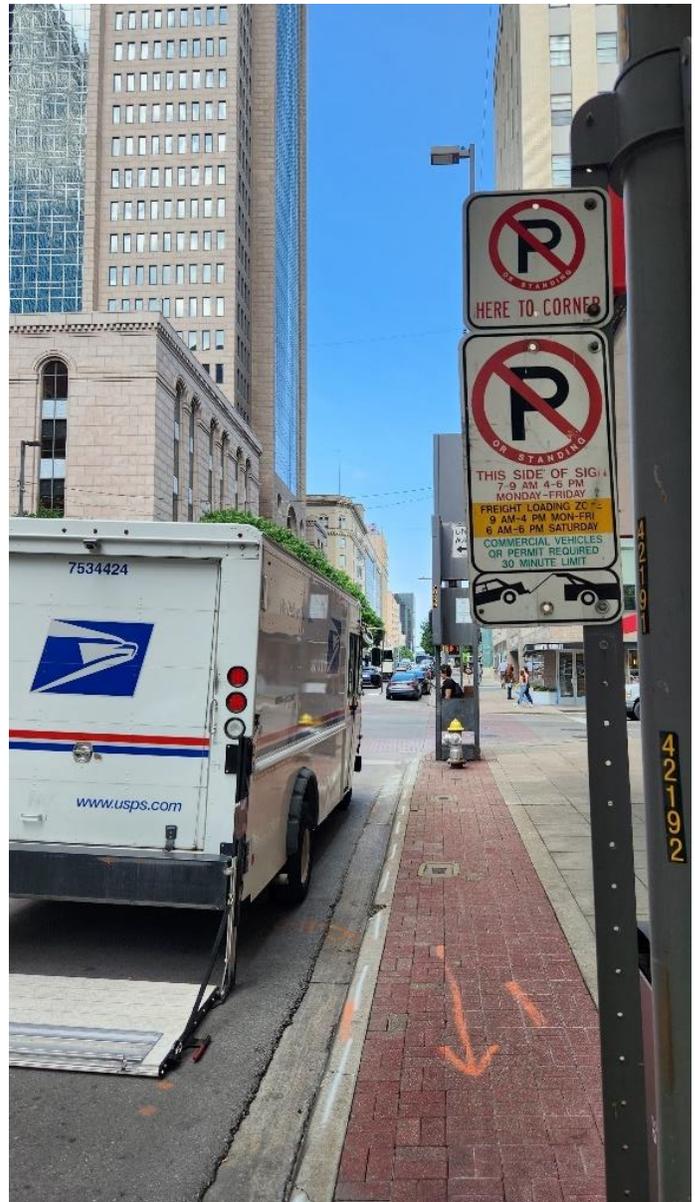
5.1	Modify Chapter 28 of the Dallas City Code to remove the block-specific meter zones, rates, and enforcement times, and instead provide parameters for when to utilize parking meters and adjust meter rates.
	The parameters may include:
	<ul style="list-style-type: none"> • Guidance for when the installation or removal of paid parking spaces is appropriate. Changes to meters must be based on measured vehicle occupancy on a set of blocks, with the goal of having one or two open spaces on each block face throughout the day. • Rates can be adjusted no more frequently than once every 90 days. • Rates can only be adjusted in increments of \$0.25 to \$0.50 per hour. • The minimum parking meter rate is \$1.00 per hour. The maximum parking meter rate is \$6.00 per hour.
5.2	After amending the code, increase all meter rates that are currently less than \$1.00 per hour to \$1.00 per hour.
5.3	Evaluate a progressive or tiered rate structure to accommodate longer stays, allowing motorists to stay beyond the time limit if they paid for it.
5.4	Evaluate the minimum and maximum rates every five years and amend Chapter 28 as needed.
5.5	Conduct a parking occupancy survey of all metered parking spaces to determine if rates should be increased or decreased.
5.6	Identify areas to implement event parking rates and begin discussions with area stakeholders.
5.7	Consider amending the Dallas City Code to enable the establishment of parking benefit districts to allow meter revenues in excess of those needed to fund parking system operations, maintenance, and enforcement to be allocated to improving parking and curb management signage, markings and wayfinding, assist with employee parking, or other transportation investments important to the district in areas with parking meters.
5.8	Identify at least one area that could be an applicable candidate for a parking benefit district and begin discussions with local stakeholders.
5.9	Consider adopting a standard partnership agreement that defines city baseline services (e.g., meter installation, maintenance, standard signs and markings) and supplemental services (e.g., technology solutions, mobility pilots, pedestrian amenities) that might be provided by community partners and public improvement districts.
5.10	Develop a maintenance and phasing plan to upgrade parking meter technology.
5.11	Ensure parking meter payment technology is up to date with payment methods of the day by completing the upgrade of coin-operated meters with credit card-enabled smart meters, while also ensuring spaces are available for people to pay by cash. Implement smart meters where only app-based payment exists today.
5.12	Expand the use of LPR technology to increase the efficiency of parking occupancy surveys and parking enforcement. Consider piloting technologies to allow for more automated occupancy surveying.

LOADING ZONES

6

OBJECTIVE: Accommodate growing loading needs, and proactively manage loading needs and demand for on-street parking as part of new developments in commercial and mixed-use districts.

After parking the second most predominant use often found along the curb in an urban environment is the loading zone. Loading zones are dedicated curbside spaces that provide for personal and commercial deliveries and passenger pick-up and drop-off. Loading zones are especially important for the movement of goods and people for urban businesses. Historically, most of the loading zones were commercial, but over time the other types of zones have been added. The city now has seven types of loading zones—taxi, valet, passenger, freight, commercial, and musician. Loading zone locations are decided on a case-by-case basis. With the increased competition for curb space, the city’s loading zones should allow flexibility to address the shifting demands for the curb by giving space to a use when it is needed. Shifting from single-use loading zones, to flexible loading zones for loading and rideshare at minimum is recommended. The chapter will cover existing practices and regulations related to various types of loading zones, and recommendations for flexible loading zones, commercial loading, and valet parking.



Existing Conditions

In Dallas, the authority of the traffic engineer to install passenger and freight curb loading zones is established in Dallas City Code Article 11 Section 28-89 to 28-102. The Code states that the location of loading zones should be based on engineering and traffic surveys; but without more specific guidance, the location of loading zones is, in practice, determined by the district engineer overseeing that area on a case-by-case basis.

Freight loading zones are in effect between 6:00 a.m. and 6:00 p.m. outside of Sundays and meter holidays, unless signs or markings specify otherwise. A driver commits an offense if they park a commercial vehicle for any purpose other than expeditious unloading or loading of materials, or longer than 30 minutes. Only commercial vehicles can be parked in a freight curb loading zone, unless the vehicle has a valid loading zone permit. Drivers of non-commercial vehicles may apply for a loading zone permit, submitted to the director; however, there is not currently a process in place for issuing permits. Metered parking spaces may be used for loading and unloading from a commercial vehicle with a loading zone permit between 7:00am and 10:00am without the need to deposit payment into the meter.

Passenger loading zones, where designated, shall be in effect at all times. A person may not stop, stand, or park a vehicle in a passenger loading zone longer than the period of time allowed by the sign or marking designating the loading zone.



Commercial Loading

The introduction of off-peak loading incentives can help to reduce the demand for commercial loading during rush hour. Also, it is recommended that commercial loading zones be placed at the end of the block face, closest to the intersection to provide easy access to the curb ramp at the intersection, which allows for smoother movement of goods and easier ingress and egress.

Managing Demand

Off-peak Loading Incentives

The city should consider providing incentives for commercial vehicles to provide off-peak (before 7:00 a.m.) deliveries in the downtown area. This could include free-use of on-street metered spaces for short durations for commercial vehicles. This flexibility allows commercial operators to better access their customers without the competing needs along the curb, and it promotes less congestion during peak daytime demand hours for the city.

Requiring Commercial Loading Permits

If demand for commercial loading becomes too great, the city could consider requiring the purchase of a commercial loading zone permit for commercial vehicles

to use on-street loading zones. This would require a code amendment to Section 28-110.

Tiered permits would allow businesses to park for longer periods of time and will have more flexibility on where they can park. The fees for the permit also provide additional revenue for the city. An example of a tiered permit structure is below in **Figure 6.1**. Commercial delivery drivers are often reluctant to pay meters because of the time it takes. Performance-based permit pricing promotes turnover and off-peak loading while enabling drivers a way to park legally.

Price as a management strategy discourages carriers from parking during the most congested periods through high permit prices and meter fees and encourages others to park during the least congested periods at a cheaper cost. Coupled with price is the time restriction element that balances commercial activity to off-peak periods. If a carrier prefers a lower cost permit, they are restricted to the period with the least congestion. If a carrier wants to conduct deliveries throughout the day, including during the most congested periods, they must pay a higher price.

Figure 6.1. Tiered Loading Permits

TIER	COST	ALLOWANCES	ADVANTAGES	DISADVANTAGES
1	\$\$\$	Greatest Flexibility- park in any space at any time of day	Maximum flexibility for the time and location	High permit cost
2	\$\$	Before 10am- Park anywhere without payment After 10am- park in commercial zones only	Further Analysis ²	Unregulated
3	\$	Deliveries allowed form 5am to 10am only, any metered space	Low Cost	Delivery time is restricted to morning hours only

Valet Parking

Existing Conditions

To offer valet parking service in the public right-of-way, or on private property if it requires the use of public right-of-way to maneuver vehicles, a company must first apply to the Department of Transportation for a valet parking service license. The application must be made by the owner or lessee of the premises benefiting from the proposed valet service. Criteria for denying or revoking a valet parking service license can be found in Section 43-126.7 of the City Code.

Three parking spaces must be reserved unless the director determines that a greater or lesser number of spaces is needed to efficiently operate the service. The application fee is \$800, and the annual permitting cost to operate a valet varies depending on operations.

- If the valet service is being conducted within the central business district: \$250 per space for the first six spaces, plus \$1,000 for each additional space.
- If the valet service is being conducted outside the central business district: \$350 per space for the first two spaces, plus \$1,000 for each additional space.
- \$400 for each sign or curb marking placed by the city at the valet parking service location.
- If the valet service is conducted completely on private property, and the public right-of-way is only used for maneuvering vehicles: no annual fee is required. If the valet parking service stand is placed in the public right-of-way, an annual fee of \$50 is required.

Where parking meters exist, it is not stated in the Code whether valet parking services must also pay for the hooding or removal of parking meters. The cost to “hood” parking meters is 70% of the maximum hourly capacity of each meter to be hooded multiplied by the hourly rate for the meter. If this cost is not included, valet parking services are paying significantly less than

members of the public pay to use those parking spaces. For example, the hourly rate of parking meters on Commerce Street in downtown is \$1.50, and meters are active Monday-Sunday from 7:00 a.m. to 6:00 p.m. If a metered parking space on Commerce Street was occupied 70% of the time, it would generate \$4,215.75 annually.



Dallas has an overabundance of valet stands that operate downtown and in other mixed-use areas, some within close vicinity of each other, subsidizing a parking problem that can be addressed with improved parking management. Valet is usually marketed as a resource for drivers to avoid unfamiliar or complex parking conditions. The city recognizes that the use of curb space for valet operations provides a public benefit, while also recognizing the negative impact of valet operations on curb space and travel, such as impeding traffic, interfering with the rights of others using the streets and curb, inducing public safety issues, and

generally creating a public nuisance that is often a challenge to enforce. Therefore, permitting valet parking operations should be approached as a special privilege, not as a matter of right.

Recommendations for Valet Zone Locations

Valet stands should be located at or near the center of a block face, where vehicular queuing is less likely to impact traffic operations at nearby intersections. Centralized placement of valet stands will minimize conflicts and create uniformity. Using a centralized location also allows multiple valet stands to be combined, serving several businesses on one block face.

Building upon this centralized approach, valet stands should be restricted to one operation per block face, which should limit the pedestrian and traffic flow disruption. More importantly, limiting to one valet stand per block will minimize the number of on-street parking spaces removed for valet services.

Valet Fee Structure

While the city currently collects an annual application fee, parking obstruction fee, and a fee for the installing of signs and markings. The city should review the current fee structure to determine if adjustments are needed to cover the cost of administration and enforcement.

Loading Needs as Part of New Developments

Loading and deliveries are necessary services for both businesses and residents, however the allocation of public curb space for loading should be minimized. Where the curb is oversubscribed, loading docks should be provided where practical so that this function can occur within the site instead of on the street. It is not the policy of the City of Dallas to reserve public curb space exclusively for a new development.

For new buildings, loading activities should be primarily accommodated off-street. The off-street facilities should be adequate to handle expected service needs of the building. For new uses in existing buildings, the loading operations plan may make use of creative strategies including flexible loading zones, alleyway access, off-peak deliveries, shared valet, and

rideshare zones. It is recommended that loading and short-term parking needs are accounted for as part of new developments, especially for hotels, high-density multi-family residential, and restaurants.

It is recommended that the following potential changes to Chapter 51A of the City Code be evaluated to better manage loading activities:

- Ensure the off-street loading requirements for hotels, restaurants and bars, and high-density residential account for the increasing use of rideshare and on-demand delivery in the provision and design of loading spaces.
- Require developers to prepare a loading operation plan for certain uses (e.g., hotels, bars, high-density multi-family residential).

Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

6.1	Map locations of existing loading zones and post online for public viewing.
6.2	Proactively identify locations for flexible loading zones.
6.3	Evaluate permitting process for commercial loading and amend Chapter 28 of the Dallas City Code as needed.
6.4	Modify Chapter 28 of the Dallas City Code to adjust the valet license fee structure to account for administrative and enforcement costs as well as revenue lost due to obstruction of parking spaces. Clarify enforcement procedures including violations, fees, revocations, and reinstatement of licenses
6.5	Evaluate the following potential changes to Chapter 51A of the City Code to better manage loading activities: <ul style="list-style-type: none"> • Ensure the off-street loading requirements for hotels, restaurants and bars, and high-density residential account for the increasing use of rideshare and on-demand delivery in the provision and design of loading spaces. • Require developers to prepare a loading operation plan for certain uses (e.g., hotels, bars, high-density multi-family residential).

PARKING FOR SPECIAL USERS

7

OBJECTIVE: Promote equity and accessibility and provide for the changing needs for the curb as transportation technologies and modes evolve.

Curb space should be equitably available to serve the most people and best interests of a neighborhood. Proactively planning for users ensures that access for neighborhood businesses and residents are not disproportionately affected by demands of the curb from outside users, that disabled users have proper accommodations, and that emerging technology can be implemented with existing infrastructure or with feasible modifications to infrastructure. This chapter covers:

- Employee parking
- Residential parking permits
- Electric vehicle parking
- Handicap parking

Employee Parking

An increase in the minimum on-street parking rate and a move to performance-based parking pricing has raised concerns about the impact on service industry workers earning low wages that work for businesses with limited or no dedicated off-street parking, particularly when real or perceived criminal activity presents concerns about walking long distances to and from the business when shifts end late at night after transit service has ended. At

the same time, when employees park for long periods of time in front of or near businesses, the lack of readily available parking can deter potential patrons from visiting those same businesses. Based on a review of other cities' practices, several strategies were identified for providing parking or transportation for service industry employees in areas like Downtown and Deep Ellum that could be considered by the city and stakeholders.

1. Shared parking arrangements with private property owners

Because employee parking is typically longer-term parking (i.e., more than four hours), when identifying locations for employee parking, off-street locations such as parking lots and garages should be the focus, so as not to take valuable short-term on-street spaces for customers. Shared parking arrangements can be beneficial to both the business and the parking lot and garage owners. Once benefits have been identified and concerns addressed, the arrangement should have the following components at minimum.

- Restricting the use of certain parking spaces to employees of the contributing business
- Shared costs for maintenance, improvements, security, and enforcement

2. Parking permit for under-utilized streets

Even in the densest area, there are on-street parking areas that go unused throughout the day. Another strategy is for the city to create a permit to allow employees to park on underutilized streets, thereby

leaving parking spaces in high demand areas to visitors and customers. Permits should be limited to ensure parking demand can be accommodated, and parking for nearby businesses or residents remains accessible. For most cities, these permits allow employees to park for unlimited periods of time, but they still have to pay the parking meter.

3. Travel Demand Management

Reducing employee parking demand allows more parking for customers. Create an incentive program to encourage employees to travel to work by other means than a vehicle. The program can include a variety of incentives and options, such as:

- Transit pass subsidies
- Rideshare subsidies
- Emergency ride home services
- Carpool/vanpool matching services

Case Studies

Austin, TX Affordable Parking Program: A city-facilitated shared parking arrangement

The Affordable Parking Program is a public-private partnership between the City of Austin, Downtown Austin Alliance, and parking management vendors (i.e., private companies that manage parking lots and garages). The initiative's goal is to reduce economic barriers for downtown employees who commute downtown by car. Downtown Austin's service and entertainment industry employees can access parking options at affordable monthly rates as early as 3:00 p.m. and stay as late as 7:00 a.m. during the week, and park up to 24 hours during the weekend, depending on the garage. Permit holders are granted access to a designated garage for \$35-\$40 per month.

The City of Austin manages the application process for city-owned garages while privately-owned garages manage their own application process. There is no cost to the city or private garage/lot operators to participate in the program, however; the operator must agree on a set permit price the employee would pay to park at a designated garage. The city works with Downtown Austin Alliance to identify businesses whose employees

would benefit from the program and to promote the program by advertising participating garages and parking availability.

Currently, there are over 20 public and private garages/lots participating in the program. To participate, applicants must show proof of employment in the entertainment service industries within the downtown Austin pay-to-park metered areas. Participants have described the program as a win-win: employees have access to more affordable parking, and operators of private lots/garages see higher demand and revenue than they otherwise would in off-peak hours

Case Study: Portland, OR Area Parking Permit Program

The Area Parking Permit Program is intended to help alleviate commuter parking (i.e., parking by those with no apparent connection or business within the permit area) in mostly residential areas by creating a visitor time limit. Those who do have businesses or live in the area may apply to purchase an annual permit, allowing them to park beyond the visitor limit. Each of the zones' visitor time limits and hours are designed around the needs of the individual neighborhood.

To create an Area Parking Permit Program zone, residents and businesses seeking a remedy for the lack of available parking in their area due to commuter parking must initiate the process. Majority (greater than 60%) of the properties who vote, must vote in favor of the program. Area Parking Permit Program zones cannot be created in metered parking areas.

Case Study: Boulder, CO Employee Eco Pass Program - A Transportation Demand Management Program

In the early 1990's, the City of Boulder launched the pilot employee Eco Pass program. Concentrated in the Central Area General Improvement District (CAGID), one of the nation's oldest parking benefit districts, the district's revenue funds free transit passes for city employees and also offers downtown employers partially subsidized EcoPasses that they can provide to their employees. There are a limited number of

employee EcoPasses and availability is limited to permanent and full-time employees.

Businesses with at least a 6-month commercial lease that are within the CAGID, the Downtown Boulder Business Improvement District area, and the University Hill General Improvement District are included in the City of Boulder's employee EcoPass program. Businesses must first sign up for the EcoPass program. Once approved, employees then get the Authorization Form from their company's EcoPass.

Case Study: San Luis Obispo, CA Validation Tickets and Employee Quarterly Parking Pass

This program was created to help alleviate downtown parking demand. Downtown businesses can purchase validation tickets to provide parking validation for customers (or staff) in any of the three downtown parking structures.

This quarterly employee pass provides downtown employees with access to reduced parking rates in the downtown parking structures. Each pass provides unrestricted access for one vehicle between the hours of 6:00 am – 12:00 am. Employees that work in downtown are eligible for a Free City Bus Pass.

Recommendation

There are many factors that need to be discussed between business districts and the city before more specific recommendations can be finalized. When potential strategy options were presented to Dallas City Council as part of a briefing on this policy document in January 2022, the majority of council members did not

support of subsidizing employee parking for private businesses. It is recommended that a workshop be convened with business district representatives. Topics of discussion may include, but are not limited to:

- The types of strategies that should be pursued
- Roles and responsibilities
- If the parking permit strategy:
 - What streets should be selected for employee parking?
 - Is parking only for employees on that street, are employees allowed to park beyond the given time limits, or are employees given passes that are a reduced rate compared to what they might otherwise have to pay to park on that street?
 - Should the number of permits be limited per business?
 - Should there be a maximum income qualification?
 - What should the cost of the permits be?
- If the Transportation Demand Management Strategy:
 - How would the discounted transit passes or carpool incentives be funded?
 - Should the number be limited per business?
 - Should there be a maximum income qualification?
- Next steps

Residential Parking Permits

Existing Programs

The city's residential parking programs make on-street spaces available for use by residences and businesses in close proximity to commercial and mixed-use areas where the spaces would otherwise be occupied by commuter or visitor vehicles. Zones are established to restrict on-street parking during certain hours and days and allow only those vehicles displaying a parking permit to park within the zone.

The city operates two residential parking permit programs, as defined in Division 5B and 5C of Chapter 28, Article XI of the Code.

1. Residential Permit Parking (RPP) Program. Limited to the Deep Ellum neighborhood, the program's purpose is to address the problems that arise when streets are used for parking vehicles by persons using adjacent commercial, industrial, and commuter facilities, but who do not reside in the neighborhood, making it challenging for Deep Ellum residents to obtain easy and adequate parking near their residences.

- The director may designate RPP zones in Deep Ellum as they determine "necessary to provide for the parking needs of the residents of that district."
- Only resident motor vehicles displaying a valid permit may parking in those zones.
- To be eligible for a permit, a person must reside within the Deep Ellum District. An annual permit costs \$25 for the first vehicle in the household, and \$50 for each additional vehicle.

2. Resident Parking Only (RPO) Program. Limited to neighborhoods where residential streets (i.e., streets in which the majority of lots are occupied by single-family or duplex uses) are used for parking by people accessing adjacent nonresidential generators, creating problems like hazardous traffic conditions, air and noise pollution, litter, and the inability of residents to obtain easy and adequate parking near their residences. A

"nonresidential parking generator" is "any facility, other than a structure used for a single-family or duplex use, that generates more parking needs than the facility can fully accommodate," including commercial, institutional, or commuter facilities. Only complete blocks of a residential street may be designated as a resident-parking-only zone, on one or both sides of the street.

- The director may designate RPO zones upon receipt of a petition and \$50 application fee, and if a parking study commissioned by the director shows that more than 60% of parking spaces are in use, and 20% or more of the vehicles using the parking spaces are not owned or operated by owners or occupants of residents or business establishments within the area requested to be designated as an RPO zone.
- Only permitted vehicles may park in RPO zones.
- The RPO zone applicants must pay \$42 for each RPO sign required to be installed.
- Businesses located in a proposed zoned area are also allowed to apply for permits.
- Up to six permits may be issued to individual residence or business establishments. The annual permit fee is \$6.
- RPO permit holders can apply for temporary permits for visitors attending a party or special event at the residence or business establishment. The fee is \$0.10 for each temporary permit, and residences or business establishments may receive up to 50 per month. Temporary permits expire at noon on the day following the date stamped on the permit.

Today, there are 77 blocks identified as RPO zones in the Dallas. The largest number of RPO zones are located in and around the State-Thomas area, Henderson, and Lower Greenville. The majority of the zones do not meet the criteria in the code.

Recommendations

City policies recognize that residents have an expectation that the neighborhood will not be overrun with parking by commuters and those transacting business in nearby commercial areas, and that on-street parking for their vehicles and those of their guests should be available for their use in the general vicinity of their residence. However, the cost and convenience of the parking depends upon the residential density and the extent of available public right-of-way. For example, in general, residents in single-family homes may expect to be able to park their own vehicle within a block of their home, while residents of high-rise apartments may expect that service vehicles and guests may have to park a few blocks away at peak times.

The city's goal is to achieve a balance between maximizing on-street parking utilization and access to businesses with the residents' desire for convenient on-street parking and preserved neighborhood character and needs of adjacent business districts. To improve the residential parking permit programs, a more detailed review with of peer city practices and stakeholder discussions is needed. The following items should be considered during those discussions.

- 1) Ensure Residential Parking Permits do not preclude the use of the curb for other needs along a mixed-use block or subsidize the use of valuable curb space in higher density areas for long-term residential parking that should otherwise be accommodated off-street. In looking at other cities' residential parking program, almost none of them granted exclusive use of blocks to permit holders. Most programs allow permit-holders to be exempt from time-limit restrictions on designated blocks.
- 2) Consolidate the RPP program and the RPO program to improve the efficiency of program management.
- 3) Review all new requests for residential permit parking, permit zone area changes to blocks currently in the residential parking only program.
- 4) Improve the process for obtaining visitor parking permits.
- 5) Evaluate on a periodic basis, the effectiveness of the Residential Parking Only Program in response to on-going private and public infill development.

Electric Vehicles

Electromobility, also known as e-mobility, is the use of electric vehicles (EV), including cars, bikes, scooters, buses, and trucks that are powered fully, or in part, by electricity from the power grid. The use of e-mobility has increased dramatically in recent years with the trend expected to continue in the coming years. Per Dallas-Fort Worth (DFW) Clean Cities Coalition, electric cars currently represent 1% of cars registered in Dallas. However, between December 2021 and December 2022, registered ownership of electric cars in the city increased 35%, from 7,700 to 10,347.

Although the use of e-mobility has increased, the lack of publicly accessible electric vehicle charging infrastructure has resulted in “range anxiety:” a fear of running out of charge before reaching a destination or an available charging point. The perception of EV’s having low range and the uneven distribution of charging stations deters many from considering it as a reliable form of transportation and is a hindrance to large-scale adoption. Given residents, commuters, and visitors travel to the Dallas’s business districts to live, work, and play, it is important that EV charging is available, accessible, and convenient for various charging needs.

To prepare for the increasing use of e-mobility, it is recommended the city take a proactive approach to accommodate the growing demand by working with stakeholders to develop policy/guidance to improve the city’s network of charging stations, supporting the Comprehensive Environmental & Climate Action Plan’s (CECAP) goal of increasing access to sustainable, affordable transportation options.

As EV charging infrastructure is often considered a semi-permanent use and can conflict with other curb uses, it is recommended for the city to focus EV charging infrastructure in off-street parking locations

or on corridors where transit and bike infrastructure is not prioritized, if on-street charging is preferred.

Considerations for an On-street EV Charging Policy

The following questions need to be answered to create a policy for on-street EV charging.

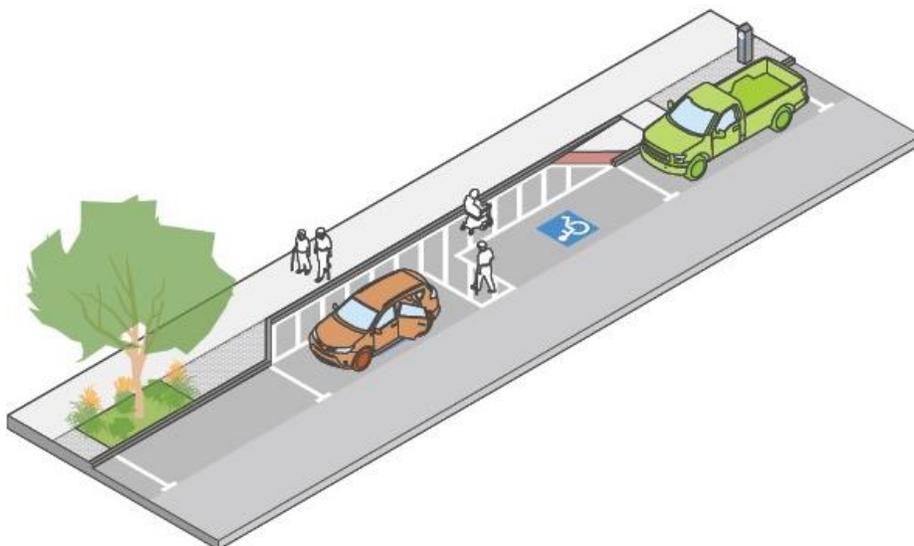
- Should the city focus on EV charging stations in off-street parking lots and garages, or allow EV charging stations to be installed for parking spaces along public streets?
- Should the city be the one to pay for, install, maintain, and operate the charging stations, or should licenses be granted to private companies to install, maintain, and operate charging stations in the public right-of-way?
- Should stations located in the public right-of-way be accessible to all members of the public and not limited to members of a provider or the owner of the charging stations?
- Should inspections be included in the permitting process to ensure chargers are in good condition?
- If the space is a metered parking space, should the meter rate be added on top of the cost to charge the vehicle?
- If the adjacent property owner is the entity that is licensed to install, operate, and maintain the charging stations, how will responsibility of the charging station be addressed if the property is sold to a new owner?
- Should there be a limit on the number of charging stations spaces allowed per block?

Handicap Parking

Providing adequate parking for persons with disabilities is important to ensure equal access to the curb for the most vulnerable curb users. Along all public streets where on-street is marked or metered and in public off-street parking lots and garages, ADA-accessible spaces should be provided based on current ADA guidelines and Public Rights-of-Way Accessibility Guidelines (PROWAG), including the guidelines below at minimum.

Guidelines

- Accessible parking spaces should be located where the street has the least crown and grade and close to key destinations.
- The following number of accessible parking spaces must be provided on a block perimeter where parking is marked or metered, based on the number of parking spaces along the block perimeter: 1 for 1 to 25 spaces, 2 for 26 to 50 spaces, 3 for 51 to 75 spaces, etc. Where parking pay stations are provided and the parking is not marked, each 20 feet of block perimeter where parking is permitted shall be counted as one parking space.
- The sidewalk adjacent to accessible parallel parking spaces should be free of signs, street furniture, and other obstructions to permit deployment of a van side-lift or ramp or the vehicle occupant to transfer to a wheelchair or scooter.
- Accessible parking spaces must be identified by signs displaying the International Symbol of Accessibility.
- Parking meters should be located at the head or foot of the parallel parking space.
- When an access aisle is not provided, the parking space shall be located at the end of the block face.
- Perpendicular or Angled Parking Spaces: An access aisle 8' wide shall be provided at street level the full length of the parking space and shall connect to a pedestrian access route. Two parking spaces may share a common access aisle.
- The driving lane shall not encroach on any required access aisle.
- For all accessible parking space requirements, including angled and perpendicular parking, see *4.3.7.3 On-Street Parking, Dallas Street Design Manual*.



Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

- | | |
|-----|---|
| 7.1 | Employee Parking: Convene a workshop with business district representatives to discuss strategies for employee parking. |
| 7.2 | Residential Parking: Prepare peer city case studies. Convene meetings with business districts and neighborhood associations. Review and update the on-street residential permit and application process. Consider replacing it with a flexible on-street parking permit program. Use parking utilization surveys as part of the warrant process to implement new permit zones.
Ensure that permit fees cover the cost of application review and program administration. Evaluate the permit requirements for their relative impacts on communities of color, low-income residents, and renters. |
| 7.3 | EV Parking: Compile research and case studies of other cities' EV charging policies, programs, and practices. Collect stakeholder and public input on the considerations for EV charging infrastructure. Present the findings and draft recommendation to the city's Environment and Sustainability Committee and the Transportation and Infrastructure Committee. Finalize the city's policy for on-street EV charging. |
| 7.4 | Handicap Parking: Determine the number of handicap parking spaces that need to be installed in MPAs to meet national accessibility guidelines. Determine where the spaces should be located and begin installation. |
| 7.5 | Handicap Parking: Update the Street Design Manual and the DDOT Sign Catalog to incorporate handicap-accessible parking standards. |
| 7.6 | Handicap Parking: Add provisions for handicap parking to the City Code, including making it a violation for vehicles not designated in accordance with provisions of Chapter 681 of the Texas Transportation Code to park in a handicap parking space. |

SIGNS AND MARKINGS

8

OBJECTIVE: Manage expectations and simplify the experience for all curb users by making it predictable and easy to understand.

The design of parking time limit signs, No Parking, and other signs communicating the use of the curb is established by the Dallas Department of Transportation's Traffic Sign Standards current edition, which defer to the Federal Highway Administration (FHWA) and the Texas Manual on Uniform Traffic Control Devices (TMUTCD). Signs for off-street parking are typically implemented by private entities, each with their own unique style. The variety of signage dilutes the overall look and feel of an area, while confusing motorists about where and when it is legal to park. Providing signage and markings that are consistent across the city minimizes confusion and reinforces curb users' expectations.

Issues and opportunities for improvement related to existing signs and markings communicating the use of the curb were identified by stakeholders and through a review of best practices they include:

1. **Lack of delineation of on-street parking spaces:** Most neighborhoods lack pavement markings to delineate the limits of individual on-street parking stalls, even if single-space meters are used. This leads to driver confusion about where parking is allowed, instances where parked vehicles are not aligned with any single parking meter, and it also

makes it difficult to enforce parking in metered parking stalls. Per Section 28-105 of the Code, "the driver of a vehicle shall park the vehicle in a metered parking stall so that the entire vehicle is within the limit lines marked on the curb or street designating the parking stall." This regulation cannot be enforced without parking stall markings.

2. **Missing curb paint / inconstant use of colors:** Curb paint is inconsistent; fire hydrant zones are often unmarked.
3. **Confusing signage.** No Parking signs using words only instead arrows confuse motorists on where along the curb it is legal to park.

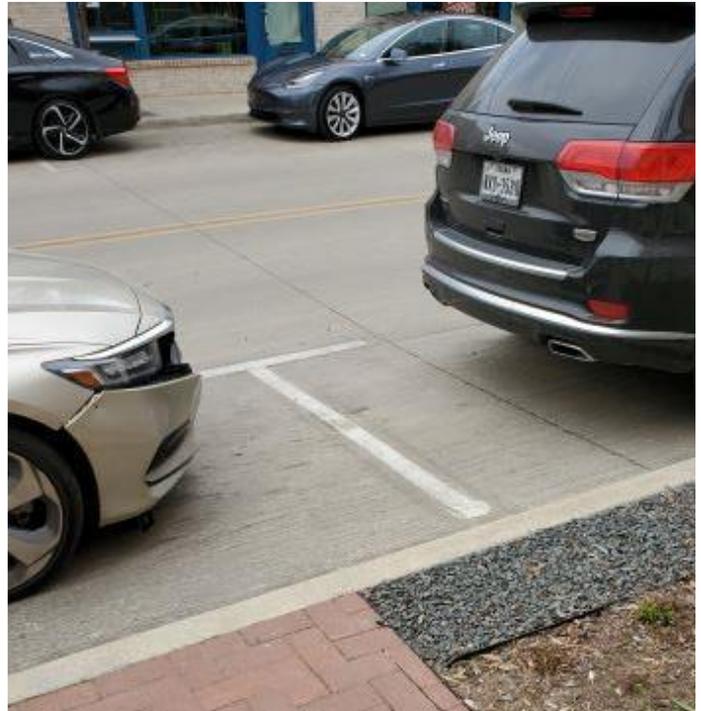


Delineate Parking Meter Stalls and Zones

Of the issues noted above, the lack of delineation for on-street metered parking is the most pervasive and would be an easy solution to implement. Striping on-street stalls would achieve the following benefits:

- It would be clear to drivers, with limited literacy or English Proficiency, where it is legal to park
- Drivers would have a clear understanding of which meter goes with which space
- Drivers may find it easier to get in and out of parallel parking during busy conditions, which would reduce traffic delays
- Safety would be improved at intersections, driveways, and pedestrian crossings by clearly delineating setbacks
- It would be easier to see and enforce when drivers park outside of legal parking areas (e.g., to close to crosswalks or fire hydrants)
- Loading zones, Street Seats, micro-mobility stations, etc. would be allocated to a defined area
- Future License Plate Recognition (LPR) and vehicle count systems could be implemented to monitor occupancy across a defined number of on-street stalls

A policy decision needs to be made about whether the city's current standard parking stall markings should also be used to delineate non-metered parking stalls, and when the use of a solid line separating the parking lane from the travel lane is appropriate.



Paint Curbs

The purpose of painting curbs is to communicate to drivers specific on-street parking rules. The use of curb paint can be used to supplement on-street signage or to reduce signage clutter by communicating the restrictions via curb color. The TMUTCD allows curb markings without signage. Painting curbs can make the curb use regulations visible from a greater distance, reduce the chance of misunderstanding, and make driver navigation easier and more predictable. This could be particularly beneficial in MPAs where there is

a high demand for the curb that often leads to sign clutter illegal parking.

It is recommended that the City of Dallas make greater use of painting curbs. Due to the additional maintenance expense this would entail, it is recommended that painting curbs be limited to MPAs as these areas have the highest demand for curb space and the greatest potential for conflicts. Because MPAs have greater regulation of the curb and require a higher number of signs, painting the curbs would likely have a negligible impact on maintenance costs if it is

accompanied by a reduced number of signs that must be maintained.

Figure 8.1 shows the curb colors that are recommended for Dallas and what they represent. These recommendations are based on a review of other cities and relevant literature and are consistent with the TMUTCD and best practices. The curb colors would need to be added to Chapter 28 of the Dallas City Code to be enforceable.

After the color curbs are added to the code to be enforceable, a phased implementation, funding, and maintenance plan should be created for implementing colored curbs and reducing sign clutter in MPA's. It is recommended that the implementation plan start with painting curbs red around fire hydrants.

Figure 8.1. Curb Use Colors

CURB COLOR	PURPOSE	DESCRIPTION	SAMPLE APPLICATIONS	ADDITIONAL SIGNS OR MARKINGS
Red	No Parking Any Time	Applied at locations with no exceptions for time of day or day of week parking, stopping, or standing.	The clear zone by a fire hydrant or crosswalk, at bus stops, or along travel lanes where parking is prohibited at all times.	Could be supplemented by No Parking signs, though this could create confusions about whether parking is prohibited when signs are not present.
No Color	Parking Allowed	The curb may be used for parking. Parking may be restricted at certain times of day or day of week, or to residents with permits.	The curb next to metered parking stalls, 15-minute parking zones, free all-day parking, and RPO zones.	Signs may be needed to indicate time-of-day or day-of-week restrictions, time restrictions, that payment is required to park, or that a permit is required to park.
Yellow	Commercial /Passenger Loading Only	The curb may only be used for passenger and/or commercial delivery loading at all times.	The curb next to freight loading zones, passenger or rideshare loading zones, valet zones, or flex loading zones.	Signs to indicate the type of loading zone and any special time limits or time-of-day restrictions.
Blue	Disabled Parking	Parking only for people with disabled placards or plates. Typically applied at all times with no exceptions for time of day or day of week.	At parking stalls designated for handicap parkin. (see additional discussion in the Special Users chapter.)	Handicap parking signs and markings, as required in TMUTCD.

Update Signage

As demands for the curb and new uses for the curb (e.g., rideshare, deliveries) have increased over the past 10 years, and as the Dallas Department of Transportation staff have come and gone, there is a need to take a fresh look at the design and placement of the signs regulating

the use of the curb. This section identifies some of the issues and opportunities that have been identified related to curb use signage, and the corresponding recommendations.

Some of the major issues and opportunities with the signage, as noted by city staff and members of the stakeholder committee, include:

- **Sign clutter:** Some neighborhoods (e.g., Deep Ellum) have an overabundance of signage; this may be confusing to visitors and lead to an increase in traffic circulation and decreased driver awareness of pedestrians, bicyclists, and scooter riders.
- **Third-party/ private signage:** There are some instances of private and third-party signage placed along the block face. These signs are inconsistent in terms of font colors and placement, and it is unclear any if of these signs are done with city approval.
- **Misalignment of signs with curb features:** In many cases, signposts are not aligned with appropriate setbacks for driveways and intersections, or signs fail to delineate the limits of the stated curb use or restriction.
- **Missing signage:** Parking stalls with paid parking regulations often lack signage indicating that motorists must pay to park and what the time limits are. No Parking signs are sometimes missing around fire hydrants.
- **Confusing signage:** The use of words rather than arrows on No Parking signs to indicate where the restriction applies has been reported to cause confusion about where it is illegal to park.

- **Unnecessary signage:** Most signs have a “towing enforced” supplemental sign, but the city rarely conducts towing.

The current standards for sign placement and messaging should be reviewed. Below, are broad recommendations for consideration:

- Provide signage and markings for curb uses that is consistent within districts and across the city and is easy to see and comprehend. This may require adding additional types of signs to the city’s traffic sign standards, such as, flex loading zone signs, parking time limit signs, and paid parking signs.
- Utilize symbols rather than, or in addition to, words whenever possible.
- Replace the No Parking signs in the current edition of the department’s Traffic Sign Standards with signs that utilize arrows.
- When arrows are used, ensure signs are installed at a 45-degree angle to the curb so it is clearer where the arrows are pointing.
- Minimize sign clutter by using strategies like painting curbs red for No Parking in MPAs.

The National Association of City Transportation Officials (NACTO) provides several guidelines for messaging and design of downtown signage given the changing requirements for curbs and on-street usage. We recommend that the city conduct a more in-depth review of signage and wayfinding to supplement the recommendations contained in this document.

Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

8.1	Stripe the limit lines of all metered parking stalls as required by section 28-105 of the code.
8.2	Develop standards for whether and how non-metered parking stalls should be marked, and when it is appropriate to stripe a solid line to separate the parking area from the travel lane.
8.3	Amend Chapter 28 of the Dallas City Code to make red and yellow curb markings enforceable.
8.4	Create standard detail for curb markings
8.5	Develop a phasing plan for implementing curb markings
8.6	Identify funding to implement painted curbs in MPAs, with the goal of completing implementation in one MPA per year, starting with the Downtown Central Business District. Painting curbs red around fire hydrants, intersections, and driveways in accordance with the No Parking regulations in the Code should be the top priority. A potential funding source could be the increased revenue from performance-based parking meter pricing.
8.7	Develop new standard for No Parking signs that use arrows and symbols rather than words to indicate where the regulation applies. Begin implementing the new standard signs as requests for new No Parking signs come in or signs need to be replaced.
8.8	Finalize the city's standard signs for passenger loading, commercial/freight loading, and flex-use zones, with input gathered from local business districts, and add to the Traffic Sign Standards as funds are available, implement this new signage in commercial and mixed-use areas in a systematic manner, completing all updates in one MPA before moving to the next.
8.9	Implement paid parking signage where absent, in accordance with TMUTCD.
8.10	Develop a sign replacement program when new types of signs are developed, to avoid confusion and provide predictability.

COMMUNICATION

4

With the implementation of curb management tools and policies, including performance-based parking pricing, it is important that meter rates, policies and curb use regulations are effectively communicated to the user to reduce confusion and frustration, and to promote a better understanding of how the curb operates. This chapter will identify specific communication strategies geared towards communicating information to the user and improving customer experience that should be implemented.

Provide Real Time Availability

Smartphone Applications

Smartphone apps provide easily accessible information and vehicle navigation to motorists. Information included in a smartphone app could include parking locations, rates, restrictions, and real-time availability (if technology permits). In many cases, cities provide their parking data in an open-source format, to allow interested smartphone app developers to incorporate the data into a larger network at no cost to the city. Such smartphone app developers include ParkMe and Parkopedia, who are more interested in creating a database of parking information on a national scale than developing individual parking apps for cities. The type of data sources that could be fed into the development of a smartphone app could include sensor data (if implemented) and meter transaction data for on and off-street facilities. At the time of this report, Google has recently implemented a parking difficulty feature in pilot communities (Atlanta, Charlotte, Tampa, Phoenix, and 20 other locations) that provides information about how challenging parking will be based on an input destination. It is envisioned that future iterations would also be able

to help determine less challenging parking within a proximate distance from the user's destination.

Provide Education

Customer outreach is an essential piece to educating the public on the goals, objectives, regulations, and practices of the city's performance parking program. The goal of outreach is to encourage understanding and compliance with the new program. The following section summarizes the different outreach efforts that could be implemented as part of an on-going outreach campaign. While the final outreach campaign will likely contain a combination of outreach efforts, it is essential that branding and messaging remain clear and consistent throughout to support customer recognition and understanding.

Website

Many times, visitors plan where they are going to park by researching parking options online. For a fully functioning performance parking and curb management programs, it is imperative that the parking rates and rate adjustments are properly communicated to the public to reduce confusion and driver frustration. In addition to communicating parking rates, the city's website provides an excellent opportunity to educate the public on the performance parking pricing program. The website should be expanded to include information on the program such as:

- A description of the program purpose and how it works
- The goals of the program
- The benefits the program provides

- Frequently asked questions
- Program contact information
- Annual data collection results
- Rate adjustment announcements
- Rate structure
- Parking maps and associated rates

Videos

Another opportunity to educate the public is to produce a short video that explains performance parking pricing program elements and the benefits it will provide. This video should be posted on the website, as well as be distributed to other media outlets and stakeholder groups to reach a wider audience.

Business Information Packet

Before the program is initiated, the city should develop a packet to be distributed to area businesses, organizations, and neighborhood groups that contains information on the new program. The packet should be

developed for electronic and print distribution and should include:

- A description of the program, including how it works and the benefits it will provide to the community
- Information on how to use the parking system
- Information on how the program is structured including the rate setting policies
- Information on how users will be notified of rate changes

Enforcement Officers

Parking enforcement officers interact with parkers daily and are a great resource to speak with the public regarding the performance parking pricing program. The parking enforcement officers should be educated on the objectives of the program and how it works so that the message of the program is communicated effectively to motorists.

Action Items

The action items in the following table are needed to realize the recommendations in this chapter.

- | | |
|-----|--|
| 9.1 | In future contract negotiations with parking meter vendors, prioritize vendors that can provide real-time data to parking apps. |
| 9.2 | Add the following information to the Parking Management Program website: <ul style="list-style-type: none"> • Information on paid parking: a map showing the location of metered parking areas, a description of parking meter rates and time limits, information on performance-based parking pricing, etc. • Information on special signs and their meanings, such as commercial loading zone signs, passenger loading zone signs, flex use loading zones, handicap parking, RPO signs, paid parking signs, etc. • A map showing the location of loading zones. • A map showing the location of RPO districts. |

IMPLEMENTATION AND PHASING

9

The implementation plan organizes critical actions with consideration of timeframe to complete the action and funding. The timeframe specifies whether the action can be implemented within the stated timeframe. Short-term refer to the actions that can be implemented within the first year following the adoption of the policy. Medium term refers to the actions that can be implemented within the first three years. Long term refers to the actions that would require a timeframe beyond three years for implementation. The cost specifies if the cost to implement the action is inexpensive (\$ = \$0-\$50k), moderately expensive (\$\$ = \$50-\$200k) or Expensive (\$\$\$ = >\$200k)

While most action items will be implemented over time as they require additional planning, funding resources, or

staff time allocation, some items can be implemented in the immediate term to build momentum and lay the groundwork for future actions. The immediate action items listed in the table below require immediate City Council action or coordination with stakeholders in order to take effect within one year. City staff has prepared a suite of ordinances to implement the most pressing policy recommendations. These will be presented for City Council consideration in parallel with the finalization and approval of the *On-Street Parking and Curb Management Policy*. Following the approval of the policy and ordinances, City Council should expect to consider subsequent ordinances and follow-up actions as city staff implement the recommendations.

Figure 9.1 Priority Action Items Immediately Following the Policy Adoption

	#	Action	Cost
Immediate Action Items	3.1	Managed Parking Areas: Amend Chapter 28 of the Dallas City Code to remove Metered Parking Areas to allow for a more comprehensive and responsive approach.	\$
	5.1	<p>Paid Parking: Modify Chapter 28 of the Dallas City Code to remove the block-specific meter zones, rates, and enforcement times, and instead provide parameters for when to utilize parking meters and adjust meter rates.</p> <p>The parameters may include:</p> <ul style="list-style-type: none"> • Guidance for when the installation or removal of paid parking spaces is appropriate. Changes to meters must be based on measured vehicle occupancy on a set of blocks, with the goal of having one or two open spaces on each block face throughout the day. • Rates can be adjusted no more frequently than once every 90 days. • Rates can only be adjusted in increments of \$0.25 to \$0.50 per hour. <p>The minimum parking meter rate is \$1.00 per hour. The maximum parking meter rate is \$6.00 per hour.</p>	\$
	5.2	Paid Parking: After amending the Code, increase all meter rates that are currently less than \$1.00 per hour to \$1.00 per hour.	\$
	5.8	Paid Parking: Identify at least one area that could be an applicable candidate for a parking benefit district and begin discussions with local stakeholders.	\$
	7.1	Employee Parking: Convene a workshop with business district representatives to discuss strategies for employee parking.	\$

Figure 9.2 Short-Term Action Items

	#	Action	Cost
Short-Term Action Items (Within 1 Year)	2.2	Prioritizing and Allocating Curb Uses: Consider creating a more detailed decision-making framework for how curb uses should be prioritized, and how to evaluate the tradeoffs that are implicit in identifying what curb uses will predominate.	\$
	5.5	Paid Parking: Conduct a parking occupancy survey of all metered parking spaces to determine if rates should be increased or decreased.	\$
	5.7	Paid Parking: Consider amending the Dallas City Code to enable the establishment of parking benefit districts to allow meter revenues in excess of those needed to fund parking system operations, maintenance, and enforcement to be allocated to improving parking and curb management signage, markings and wayfinding, assist with employee parking, or other transportation investments important to the district in areas with parking meters.	\$
	7.6	Handicap Parking: Add provisions for handicap parking to the City Code, including making it a violation for vehicles not designated in accordance with provisions of Chapter 681 of the Texas Transportation Code to park in a handicap parking space.	\$
	8.3	Signs and Markings: Amend Chapter 28 of the Dallas City Code to make red and yellow curb markings enforceable.	\$
	8.4	Signs and Markings: Create standard detail for curb markings	\$
	8.7	Signs and Markings: Develop new standard for No Parking signs that use arrows and symbols rather than words to indicate where the regulation applies. Begin implementing the new standard signs as requests for new No Parking signs come in or signs need to be replaced.	\$
	8.8	Signs and Markings: Finalize the city’s standard signs for passenger loading, commercial/freight loading, and flex-use zones, with input gathered from local business districts, and add to the Traffic Sign Standards as funds are available, implement this new signage in commercial and mixed-use areas in a systematic manner, completing all updates in one MPA before moving to the next.	\$
	8.9	Signs and Markings: Implement paid parking signage where absent, in accordance with TMUTCD.	\$\$
	9.2	Communication: Add the following information to the Parking Management Program website: <ul style="list-style-type: none"> • Information on paid parking: a map showing the location of metered parking areas, a description of parking meter rates and time limits, information on performance-based parking pricing, etc. • Information on special signs and their meanings, such as commercial loading zone signs, passenger loading zone signs, flex use loading zones, handicap parking, RPO signs, paid parking signs, etc. • A map showing the location of loading zones. • A map showing the location of RPO districts. 	\$

Figure 9.3 Medium-Term Action Items

	#	Action	Cost
Medium-Term Action Items (Within 3 Years)	2.1	Prioritizing and Allocating Curb Uses: Using the curb use inventory created for this effort as a starting point, expand and maintain an up-to-date GIS-based inventory of curb uses in central Dallas and areas that require active curb management and parking enforcement.	\$\$
	3.2	Managed Parking Areas: Identify other areas of the City that would benefit from being a MPA and meet the criteria for MPAs, such as the Bishop Arts district, and initiate conversations with the local businesses. Topics of discussion might include location of existing needs and issues, and resources to conduct a parking management study and prepare a strategy.	\$
	4.1	Parking Time Limits: Amend time restrictions when and where appropriate. To determine appropriateness, consult with businesses and residents and according to developed criteria, including measured vehicle occupancy on a set of blocks, with the goal of having one or two open spaces on each block face throughout the day, nature of nearby land uses, the availability of alternative parking options, including nighttime and weekend paid parking, and other relevant factors. Match the meter time limits with the desired duration of parking in the district.	\$
	5.3	Paid Parking: Evaluate a progressive or tiered rate structure to accommodate longer stays, allowing motorists to stay beyond the time limit if they paid for it.	\$
	5.6	Paid Parking: Identify areas to implement event parking rates and begin discussions with area stakeholders.	\$
	5.9	Paid Parking: Consider adopting a standard partnership agreement that defines City baseline services (e.g., meter installation, maintenance, standard signs and markings) and supplemental services (e.g., technology solutions, mobility pilots, pedestrian amenities) that might be provided by community partners and public improvement districts.	\$
	5.10	Paid Parking: Develop a maintenance and phasing plan to upgrade parking meter technology.	\$
	5.11	Paid Parking: Ensure parking meter payment technology is up to date with payment methods of the day by completing the upgrade of coin-operated meters with credit card-enabled smart meters, while also ensuring spaces are available for people to pay by cash. Implement smart meters where only app-based payment exists today.	\$
	5.12	Paid Parking: Expand the use of LPR technology to increase the efficiency of parking occupancy surveys and parking enforcement. Consider piloting technologies to allow for more automated occupancy surveying.	\$
	6.1	Loading Zones: Map locations of existing loading zones and post online for public viewing.	\$
	6.2	Loading Zones: Proactively identify locations for flexible loading zones.	\$
	6.3	Loading Zones: Evaluate permitting process for commercial loading and amend Chapter 28 of the Dallas City Code as needed.	\$
	6.4	Loading Zones: Modify Chapter 28 of the Dallas City Code to adjust the valet license fee structure to account for administrative and enforcement costs as well as revenue lost due to obstruction of parking spaces. Clarify enforcement procedures including violations, fees, revocations, and reinstatement of licenses	\$
	6.5	Loading Zones: Evaluate the following potential changes to Chapter 51A of the City Code to better manage loading activities:	\$

#	Action	Cost
	EV Parking: Compile research and case studies of other cities' EV charging policies, programs, and practices. Collect stakeholder and public input on the considerations for EV charging infrastructure. Present the findings and draft recommendation to the City's Environment and Sustainability Committee and the Transportation and Infrastructure Committee. Finalize the City's policy for on-street EV charging.	\$
6.4	Handicap Parking: Determine the number of handicap parking spaces that need to be installed in MPAs to meet national accessibility guidelines. Determine where the spaces should be located and begin installation.	\$\$
7.5	Handicap Parking: Update the Street Design Manual and the DDOT Sign Catalog to incorporate handicap-accessible parking standards.	\$
8.1	Signs and Markings: Stripe the limit lines of all metered parking stalls as required by section 28-105 of the code.	\$\$
8.2	Signs and Markings: Develop standards for whether and how non-metered parking stalls should be marked, and when it is appropriate to stripe a solid line to separate the parking area from the travel lane.	\$
8.5	Signs and Markings: Develop a phasing plan for implementing curb markings	\$
8.10	Signs and Markings: Develop a sign replacement program when new types of signs are developed, to avoid confusion and provide predictability.	\$

9.4 Long-Term Action Items

#	Action	Cost
3.3	Managed Parking Areas: Work with local business districts and stakeholders to create a parking management strategy for one or more existing or candidate MPAs.	\$\$\$
5.4	Paid Parking: Evaluate the minimum and maximum rates every five years and amend Chapter 28 as needed.	\$
7.2	Residential Parking: Prepare peer city case studies. Convene meetings with business districts and neighborhood associations. Review and update the on-street residential permit and application process. Consider replacing it with a flexible on-street parking permit program. Use parking utilization surveys as part of the warrant process to implement new permit zones.	\$
8.6	Signs and Markings: Identify funding to implement painted curbs in MPAs, with the goal of completing implementation in one MPA per year, starting with the Downtown Central Business District. Painting curbs red around fire hydrants, intersections, and driveways in accordance with the No Parking regulations in the Code should be the top priority. A potential funding source could be the increased revenue from performance-based parking meter pricing.	\$\$\$
9.1	Communication: In future contract negotiations with parking meter vendors, prioritize vendors that can provide real-time data to parking apps.	\$

Long-Term Action Items (3-5 Year)

APPENDIX

Parking Meter Technology Pros-Cons

The following summary of pros and cons of parking meter technology options is based on the Federal Highway Administration's 2020 publication, "Contemporary Approaches to Parking Pricing: A Primer."

Technology Option	How Users Pay	How Enforcement Works	Pros	Cons	Other Notes
1. Single-Space Coin-Operated Meters	Users pay at the meter next to their car, either with coins or through the app (after scanning the QR code on the meter).	Enforcement officers must visually inspect the meter to see if it is expired-- and, if there is also a Pay-by-Phone option, check an additional database-- before issuing a parking citation.	<ol style="list-style-type: none"> 1. User convenience to pay at the space rather than at a central payment location. 2. Provide a visual reminder to users (i.e., the meter itself) that they must pay to park. 3. Meter failures affect only one parking space rather than an entire block face. 4. No wireless technology costs. 	<ol style="list-style-type: none"> 1. Limited payment options accepted (only coin and pay-by-phone). 2. Challenging to adjust prices, report revenue collected, and monitor utilization. 3. No automatic alerts to operations about system failures. (Requires users to report or regular inspections, decreasing the revenue that could be collected. 4. Enforcement is more time-consuming and labor-intensive. 5. More infrastructure to maintain than multi-space meters or Pay-by-Phone only. 6. More sidewalk clutter than multi-space meters or app only. 7. Enforcement officers must visually inspect every parking meter, making enforcement less efficient. 	
2. Single-Space "Smart" Meters	Users pay at the meter next to their car, either with coins, cash, credit card, or through the app (after scanning the QR code on the meter).	Enforcement officers utilize wireless devices to check the status of each space.	<ol style="list-style-type: none"> 1. User convenience to pay at the space rather than at a central payment location. 2. Provide a visual reminder to users (i.e., the meter itself) that they must pay to park. 3. Meter failures affect only one parking space rather than an entire block face. 4. Many payment options accepted (coins, bills, card, pay-by-phone). 5. The meters are wirelessly networked to allow real-time reporting, automatically report system failures, and support dynamic pricing. 6. Can also integrate with pay-by-phone (app) systems, improving enforcement. 	<ol style="list-style-type: none"> 1. More infrastructure to maintain than multi-space meters or Pay-by-Phone only. 2. More sidewalk clutter than multi-space meters or Pay-by-Phone only. 3. If time is left on a meter, it could be used by a new vehicle, rather than the new vehicle having to start the clock over. In addition to impacting revenue, this could also make it challenging to accurately collect data on user behaviors like average time parked (which can inform what time limits are set). 	If Pay-by-Phone is available, it must be integrated with meters and LRP technology for enforcement to be efficient. Otherwise, Enforcement Officers must check multiple databases before issuing a parking citation.

Technology Option	How Users Pay	How Enforcement Works	Pros	Cons	Other Notes
3. Multi-Space Pay-And-Display	Users to walk to a central pay station, make their payment, and place a receipt on their vehicle's dashboard.	Enforcement officers must visually inspect the receipt on each vehicle dashboard to determine if the vehicle has paid and that they have not violated time limits.	<ol style="list-style-type: none"> 1. Many payment options accepted (coins, bills, card, pay-by-phone). 2. The meters are wirelessly networked to allow real-time reporting, automatically report system failures, and support dynamic pricing. 3. Can also integrate with pay-by-phone (app) systems, improving enforcement 4. Less infrastructure to maintain than single-space meters. 5. Less sidewalk clutter than single-space meters. 	<ol style="list-style-type: none"> 1. Greater user inconvenience than single-space meters, as user must walk to a central kiosk to pay. 2. Greater user inconvenience than other multi-space and Pay-by-Phone Only options, as user must walk to kiosk to pay and back to their car again to display receipt. 3. If the meter fails, it effects all spaces on the entire block face. 4. Enforcement officers must visually inspect the receipt on every vehicle's dashboard, making enforcement less efficient. 5. More infrastructure to maintain than Pay-by-Phone Only. 	The kiosk should be centralized on the block and there should be signs indicating users must pay at the kiosk, to avoid contested tickets from people claiming they did not realize they had to pay to park.
Multi-Space Pay-by-Plate	Users input their license plate number when making payment at the multi-space meter or in the Pay-by-Phone system (if available).	Enforcement officers will scan your license plate number with their handheld ticketing device to verify your payment. For enforcement to be most efficient, officers would only get out of their car to issue tickets if there is a block with many cars that in violation, allowing them to focus their energy on the blocks with the greatest number of violators in the least amount of time.	<ol style="list-style-type: none"> 1. Many payment options accepted (coins, bills, card, pay-by-phone). 2. The meters are wirelessly networked to allow real-time reporting, automatically report system failures, and support dynamic pricing. 3. Can also integrate with pay-by-phone (app) systems, improving enforcement. 4. Less infrastructure to maintain than single-space meters. 5. Less sidewalk clutter than single-space meters. 6. If the meter fails, customers can pay for parking at any multi-space meter kiosk so long as the customer properly enters their license plate number and the zone number in which they parked. 	<ol style="list-style-type: none"> 1. Greater user inconvenience than single-space meters, as user must walk to a central kiosk to pay. 2. More meter infrastructure to maintain than Pay-by-Phone Only. 	The kiosk should be centralized on the block, with signs indicating users must pay at the kiosk, to avoid contested tickets from people claiming they did not realize they had to pay to park. If Pay-by-Phone is available, it must be integrated with meters and LRP technology for enforcement to be efficient. Otherwise, enforcement officers must check multiple databases before issuing a parking citation.

Technology Option	How Users Pay	How Enforcement Works	Pros	Cons	Other Notes
4. Multi-Space Pay-by-Space	Similar to Pay-by-Plate, but instead users enter a space number associated with their parking space when they pay at the multi-space meter.	Enforcement officers use wireless devices to check the status of each space. For enforcement to be most efficient, officers would only get out of their car to issue tickets if there was a block with many cars in violation, allowing them to enforce the greatest number of violators in the least amount of time.	<ol style="list-style-type: none"> 1. Many payment options accepted (coins, bills, card, pay-by-phone). 2. The meters are wirelessly networked to allow real-time reporting, automatically report system failures, and support dynamic pricing. 3. Can also integrate with pay-by-phone (app) systems, improving enforcement. 4. Less infrastructure to maintain than single-space meters. 5. Less sidewalk clutter than single-space meters. 	<ol style="list-style-type: none"> 1. Greater user inconvenience than single-space meters, as user must walk to a central kiosk to pay. 2. If the meter fails, it effects all spaces on the entire block face. 3. More meter infrastructure to maintain than Pay-by-Phone Only. 4. Requires signing or striping of each individual space number. 5. Integration with Pay-by-App may be more challenging, unless every parking space in the system is assigned a unique number. That would make making changes to parking spaces more challenging. 	
5. Pay-by-Phone Only	Pay-by-phone technology allows users to pay for parking by phone, text message, or a smart phone application.	The systems can integrate with "smart" single-space and multi-space meters and LPR technology. The integration with LPR means enforcement officers using that technology can be automatically notified of time violations. If not integrated with meters or LPR, pay-by-phone systems require enforcement officers to check an additional database before issuing a parking citation.	<ol style="list-style-type: none"> 1. Allows for real-time reporting and support dynamic pricing (if there are separate QR or ID codes for each block). 2. More efficient enforcement - occurs similarly to Pay-by-Plate. Enforcement Officers can check the payment status of each vehicle by scanning their license plate using a wireless device. 3. No meter infrastructure to maintain. 4. No way to meters to fail and impact revenue (unless the pay-by-phone system fails). 5. Less sidewalk clutter than single-space meters. 	<ol style="list-style-type: none"> 1. Limited payment options accepted (only credit card). Person must have a working phone to park. May pose barriers for low-income, handicap, or disabled people. 2. Users are typically required to download an app, pre-register and provide a credit card number. Infrequent visitors may be reluctant to download an app, and the amount of time it takes to install the app and create an account can be significant when compared to simply entering a credit card into a machine. 3. Greater user inconvenience than single-space meters, as user must walk to a sign to read or scan the code to pay. 	There are two ways in which this system charges for parking. Option 1 ("start duration"): user arrives at parking location, enters or scans a code associated with the location, and selects the amount of time they would like to park. Option 2 ("start stop"): requires parkers to contact the system when they first park and when ready to leave.