Deep Ellum Parking Study

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Deep Ellum Parking Study

March 2024

North Central Texas Council of Governments

What is NCTCOG?

The **North Central Texas Council of Governments** (NCTCOG) is a voluntary association of, by, and for **local governments** within the 16-county North Central Texas Region. The agency was established by state enabling legislation in 1966 to assist local governments in **planning** for common needs, **cooperating** for mutual benefit, and **coordinating** for sound regional development. Its purpose is to strengthen both the individual and collective power of local governments, and to help them recognize regional opportunities, resolve regional problems, eliminate unnecessary duplication, and make joint regional decisions – as well as to develop the means to implement those decisions.

North Central Texas is a 16-county **metropolitan region** centered around Dallas and Fort Worth. The region has a population of more than 7 million (which is larger than 38 states), and an area of approximately 12,800 square miles (which is larger than nine states). NCTCOG has 228 member governments, including all 16 counties, 169 cities, 19 independent school districts, and 24 special districts.

NCTCOG's **structure** is relatively simple. An elected or appointed public official from each member government makes up the **General Assembly** which annually elects NCTCOG's **Executive Board**. The Executive Board is composed of 17 locally elected officials and one ex-officio non-voting member of the legislature. The Executive Board is the policy-making body for all activities undertaken by NCTCOG, including program activities and decisions, regional plans, and fiscal and budgetary policies. The Board is supported by policy development, technical advisory and study **committees** – and a professional staff led by **R. Michael Eastland**, Executive Director.

NCTCOG's offices are located in Arlington in the Centerpoint Two Building at 616 Six Flags Drive (approximately one-half mile south of the main entrance to Six Flags Over Texas).

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NCTCOG's Department of Transportation

Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG's Department of Transportation is responsible for the regional planning process for all modes of transportation. The department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition, the department provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

Prepared in cooperation with the Federal Highway Administration, US Department of Transportation, and the Texas Department of Transportation.

The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, the Federal Transit Administration, or the Texas Department of Transportation.

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- LAZ Parking
- ACE Parking

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Introduction

Background

The vision for Deep Ellum is a convenient way to navigate a walkable community with multiple modes of transportation connecting it to downtown Dallas and surrounding communities. Along with this vision, the Deep Ellum Foundation (DEF) in its 2019 Strategic Plan identifies a need to plan for parking management. While parking is not what makes Deep Ellum a unique and vibrant place, a lack of strategic parking action can challenge the neighborhood's continued success.

Starting in 2019 the North Central Texas Council of Governments (NCTCOG) staff became engaged in evaluating district transportation needs for Deep Ellum. After a multi-year process of evaluating priority transportation needs related to a major employer relocation to the district, NCTCOG allocated federal funding in 2021 for pedestrian improvements, rideshare facilities, and parking in Deep Ellum. Out of those discussions NCTCOG also agreed to continue the conversation with the district on parking management.

In 2022 NCTCOG used a regional parking management federal planning grant available to study and assist local governments on the issue. At no direct cost to the City of Dallas or the DEF, NCTCOG committed to study the parking challenges and possible district management as part of its larger regional effort to advance the state of parking management practices in North Texas.

Goals and Study Scope

In coordination with the City of Dallas and DEF, NCTCOG staff identified three goals for a parking management plan:

1. Increase the efficiency of the current parking supply, meeting demand without building excessive supply.
2. Advance parking management practices which will help facilitate other safe modes of travel for access to and through the district.
3. Reduce the excessive circulation and congestion of vehicle travel within the district.

To gather the information needed for a parking district plan it was proposed that NCTCOG would conduct several planning tasks including:

- Engage district key stakeholders on parking needs and issues.
- Study existing conditions including parking occupancy, public survey, and other observations.
- Create a district management framework-based parking policy and management best practices.

Final Report Context

This final report includes the findings of data collection and engagement in the Deep Ellum district as well as a broad literature review of parking management practices locally and nationally. The final section of the report includes eight recommendations for the City of Dallas, DEF, private parties, Dallas Area Rapid Transit (DART), and NCTCOG to use in advancing implementation of better parking management. While no entity is required to follow NCTCOG's recommendations, it's hoped these will provide valuable insight on how the district can be a regional leader in parking management for better transportation and community development.

Stakeholder Engagement
Meetings and Interviews

Engagement with organizations, property owners, and business stakeholders in the Deep Ellum district was used to frame the scope of work and understand needs and issues related to parking in the area. A series of conversations and meetings were held that included the following:

- May 23, 2022 – Initial scope meeting and feedback with group
- May through October 2022 – Individual meetings with five business manager/ property stakeholders
- August 11, 2022 – Coordination meeting with City of Dallas and DART
- October 4, 2022 – Detailed data collection plan meeting and feedback with group

Throughout these conversations, stakeholders were asked generally about what they perceived to be the biggest issue with parking in Deep Ellum. Business managers were also asked for examples of employees' transportation use and how they managed parking on their property, if applicable. Over two dozen individuals provided feedback via group meetings and individual conversations. Main themes emerged from the insights and opinions shared including:

Availability: Perception that there is not enough parking. Concern that high-priced parking lots drive people to look for on-street parking. Large events at venues add additional strain to parking supply. Many are concerned with affordable parking.

Wayfinding/Awareness: Generally, many visitors are not aware of all parking options. Pricing is often unclear. There's a lack of clear and comprehensive information about where and how to park.

Employee parking: Stakeholders say there are too few options for employee parking. Employees must arrive early to find street parking. The cost of parking may be too high for most Deep Ellum employees.

Safety: Lack of street lighting is a concern. There's also a concern that leaving vehicles in some locations may result in break-ins. Employees may have to walk long distances in poor lighting to vehicles. Many employees may also be carrying cash tips. With the lack of public lighting, some businesses provide outdoor lighting on their buildings.

Zoning: Requiring parking in a built-out district leaves few options. Prospective businesses may not locate in Deep Ellum because of cost/challenges meeting zoning requirements. Private paid parking lots may not currently be eligible to meet the minimum requirements.

On-street Enforcement and Management: Too often, drivers are circling looking for on-street parking which always seems to be full and does not turn over often. The general concern is there is not enough enforcement of parking meters and loading zones and other violations. Some patrons are avoiding paying for meters if more vehicles fit on curb than there are meters.

Street Congestion and traffic issues: Numerous people cruise down streets (not always looking for parking) mixed in with many who are circling for parking. Delivery drivers will often stop in the street since curb spaces are not available. Some individuals drive recklessly in competition for on-

street spots. Supply chain issues and delayed deliveries result in stopping in travel lanes when street parking is unavailable in evenings.

Other issues: Concern over loss of parking if Interstate Highway (IH) 345 is sunk/reconstructed. It seems very unlikely patrons to Deep Ellum would cross from IH 345 to downtown. There is some support for shuttles from the more remote lots to the core of the district. Most employees drive, a few use DART, or walk/bike.

Public Survey Summary and Findings

NCTCOG staff conducted a survey of the public to ask about their parking behavior and perceptions. The survey findings can be paired with the observational occupancy data collected by NCTCOG. The survey was launched online and shared via email, social media, and paper flyers posted at various locations in the district. Deep Ellum Foundation staff supported distribution via their newsletter and social media channels. Between May 4-July 25, 2023, the survey collected a total of 152 responses (151 English responses and 1 Spanish response).

Each participant had a high response rate by completing all questions and approximately half of all respondents provided an open-ended comment. A little more than half of all respondents either live or work in the district, indicating a high level of familiarity with Deep Ellum. With the responses received, the following key insights have been found:

- Most respondents drive to Deep Ellum and look for on-street parking spaces.
- Most respondents arrive in the district ready to cruise around looking for a spot rather than go to a particular parking facility.
- Concern over the safety of where they park and walking to and from their vehicle is more of a concern than the price of parking.
- Patrons of Deep Ellum clearly express concern over safety, particularly at night and on weekends, which will change parking priorities for some.
- The price of parking is still very significant, and many want free or cheap parking.
- Variable lower prices for short visits may not be available or may not be signed clearly.
- Many are interested in using parking garages as a solution but may not be aware of all existing garages, or do not want to pay current rates.
- A substantial minority of respondents (approximately 38 percent) have walked, used DART, or rideshare to get to the district, and support encouraging other forms of transportation over issues of parking vehicles.
- Many expressed frustrations with unclear signage or lack of consistent information online.

Results Summary

The summary below provides a brief overview of the findings per survey question. Full responses, detailed counts, and the survey template of questions are available in **Appendix A**.

Section 1. Respondent's Relationship to Deep Ellum

The first question asked if respondents were workers, residents, or visitors. Respondents could choose multiple categories. NCTCOG staff analyzed the responses (raw totals are available in **Appendix A**) to show the following breakout of the 152 responses:

- 25 live in Deep Ellum (but do not work there)
- 14 live and work in Deep Ellum
- 41 work in Deep Ellum (but do not live there)
- 72 are visitors (neither live nor work in Deep Ellum)

Section 2. Travel Days and Times

Participants were asked when they most frequently travel to places in Deep Ellum (see full response breakdown in **Section 2/Appendix A**). The total percentages of responses do not add up

to 100 percent due to respondents having the option to select multiple choices that best corresponded to their travel days and times. Most visitors (non-employee and non-resident respondents) responding to this survey visit Deep Ellum during the day on weekends (before 5:00 PM) (46 counts, 64 percent of visitors), closely followed by weekend evenings/nights (after 5:00 PM) (45 counts, 63 percent of visitors). Frequent visitors are more likely to visit Deep Ellum on weekends and weekdays after 5:00 PM.

Section 3. Mode of Travel

Next, respondents were asked about their typical mode of transportation to reach destinations in Deep Ellum (see complete responses in **Section 3/Appendix A**). The total percentage of responses do not sum to 100 percent due to respondents having the option to select multiple travel modes. One hundred thirty-three respondents (88 percent of respondents) indicated that they "frequently" or "sometimes" rely on driving a vehicle. This was the most popular choice among Deep Ellum visitors (non-employee and non-resident) at 66 counts (92 percent of visitor respondents). Despite the prevalent vehicle dependency, walking ranked as the second most popular choice with 57 counts (frequent and occasional users, 38 percent of respondents), and is especially popular among Deep Ellum residents (frequent and occasional users, 90 percent of Deep Ellum residents). Additionally, 42 respondents reported using DART (frequent and occasional users, 28 percent of respondents), and an equal percentage opted for taxi/rideshare, followed by 41 counts of carpool users (frequent and occasional users, 27 percent of respondents).

Section 4. Re-parking Behavior

Deep Ellum respondents were asked if they ever move their vehicle and re-park when visiting different places within the district (see full responses in **Section 4/Appendix A**). Most individuals who park their vehicles in Deep Ellum do not move them (125 counts, 83 percent rarely or never engage in re-parking). This suggests that Deep Ellum visitors are most likely parking only once per visit.

Section 5. Type of Parking

Survey participants indicated how often they use different parking types (refer to **Section 5/Appendix A** for full list and responses). The total percentage of responses does not sum to 100 percent due to respondents having the option to select multiple types of parking. The most-used type of parking was on-street/curb parking with 117 responses indicating they use this type of parking "sometimes" or "frequently" (77 percent of respondents). This aligns with onsite observations that revealed high occupancy of on-street parking within the district's center. Paid parking lots ranked second (90 counts, 59 percent of respondents), and free lots/garages (e.g., employee only, or resident parking) followed closely at 72 counts (47 percent of respondents). Parking garages were the least used choice, with only 34 respondents opting for them (22 percent of respondents).

Section 6. Parking Search Method

The survey also inquired about the frequency of using different methods to search for parking in Deep Ellum (See **Section 6/Appendix A** for full responses). The total percentage of responses do not sum to 100 percent due to respondents having the option to select multiple methods. The most prevalent method, combining response rate of 'sometimes' and 'frequently,' was driving to their first destination and looking for any open spaces (121 counts, 80 percent of respondents).

The second most common approach was searching for parking on the street/curb for a while first (111 counts, 73 percent of respondents). The least utilized method involved using an app or website to reserve parking in advance at 17 counts (11 percent of respondents).

Section 7. Factors when Parking

Respondents were also asked to prioritize the factors that matter most to them when parking in Deep Ellum (See **Section 7/Appendix A** for full responses). Notably, the top-ranking factor was security and safety of where the respondents park their vehicle, such as concerns about potential break-ins (51 percent of respondents). Following closely in importance was the factor of safety while walking from their vehicle to their destination (49 percent), with the factor of cost of parking ranking third (35 percent).

Do the factors listed above vary in importance depending on the time of day?

Forty-eight respondents answered "yes" to the question above, and 47 of the responses provided explanations for this variation, particularly citing difference during nighttime, daytime, weekends, and other factors influencing variations. Please note, some responses overlap/repeat as they may contain information across various categories. For full responses, please refer to **Appendix B**.

Nighttime (30 responses): Respondents prioritize safety at night due to concerns about rowdiness, break-ins, and discomfort with parking far from destination, while considering cost as a secondary factor, emphasizing the importance of parking near their destination.

Daytime (10 responses): Daytime parking factors highlight the preference for parking near destinations (e.g., lunchtime or work-related activities). Additionally, concerns about parking costs for short durations play a significant role in influencing an individual's willingness to frequent Deep Ellum during the daytime.

Other (9 responses): Non-time/non-day specific responses emphasize safety concerns, difficulties finding parking, and parking costs.

Weekends (6 responses): On weekends there is a notable increase in traffic; respondents expressed difficulties finding parking. Respondents prioritize close and safe parking over affordability, with safety concerns being higher on weekend nights.

Section 8. Other comments or ideas on improving parking in Deep Ellum

The last survey question received a total of 75 responses, including comments and ideas on improving parking in Deep Ellum. Please note, some responses overlap/repeat as they may contain information across various categories. Survey responses were grouped into the following suggestions/concerns:

Garages (11 counts): Respondents emphasized the need for more, affordable, and conveniently located parking garages.

Safety/Security (10 counts): Participants expressed concerns about safety and security, citing incidents of vehicle break-ins, vandalism, assault, and the need for improved lighting and security measures.

Active Transportation (9 counts): Survey participants advocated for improving active transportation options in Deep Ellum including the development of protected bike lanes, walkable neighborhoods, discouragement of vehicle use, and enhanced pedestrian pathways.

Public Transit (9 counts): Respondents emphasized the importance of investing in and promoting public transportation to address the parking challenges in Deep Ellum.

Signage (7 counts): Respondents highlighted the need for improved wayfinding, suggesting clearer and standardized signage for parking availability, pricing, and restrictions to enhance safety.

Variable Demand Pricing (7 counts): Respondents shared varied opinions on parking pricing in Deep Ellum, with some advocating for lower or free daytime rates to attract visitors and others supporting dynamic pricing based on demand to ensure efficient parking availability.

Website/Apps (6 counts): Participants offered various suggestions for more website and mobile applications including parking information and user-friendly payment options with standardized practices, and improved connectivity between parking facilities (meters/lots) and their respective mobile apps.

Pedestrian-Only Streets (5 counts): Respondents expressed mixed opinions about pedestrian-only streets in Deep Ellum, with some advocating for such closures on Main and Elm streets to enhance the pedestrian experience and reduce traffic, while others raised concerns about the negative impacts on businesses and traffic flow.

Employee Parking (4 counts): Respondents working in Deep Ellum expressed the need for employee-designated parking spaces.

Maintenance (4 counts): Survey participants raised concerns about maintenance issues related to parking infrastructure in Deep Ellum, including broken entry gates in parking garages affecting security, malfunctioning parking meters, safety issues regarding insufficient lighting, potholes, and steep curb cuts for some parking lots.

LU Mix (4 counts): Some respondents raised the issue of the current land use in Deep Ellum, with concerns about an overabundance of bars and restaurants which lead to a lack of daytime business. Other suggestions include developing high-density mixed-use buildings to balance the area's character and reduce reliance on parking lots.

Other (5 counts): Other comments and suggestions included supporting business/patron validation (one response); keeping a cash option as a form of parking payment (one response); introducing resident-only permits (one response); encouraging rideshare to reduce drunk driving (one response); and only permitting valet services for clubs instead of public parking (one response).

Existing Conditions and Data Findings

Parking Occupancy Counts

To evaluate Deep Ellum parking demand, parking occupancy counts were conducted by NCTCOG on three occasions: November 5, 2022; June 14, 2023; and June 17, 2023, documenting point-in-time conditions in the district. Stakeholders indicated Saturday evenings as the highest demand time for activity in the district. Parking counts were collected twice for each Saturday on November 5, 2022, and June 17, 2023 at 6:00 PM and 10:00 PM.

Due to street congestion, closed streets, and variable parking conditions, NCTCOG used manual vehicle counts of both on-street and off-street parking spaces. Operators of paid off-street parking lots shared data with NCTCOG but it was determined manual observation was needed to ensure accuracy.

The study area, seen in **Figure 1**, focused on the core area of district activity. This study attempted to inventory the total supply but focuses primarily on public parking spaces in this area.

Figure 1: Deep Ellum Parking Study Boundary

Total Conditions

At the latest count in June of 2023, it was estimated the district has over 5,700 parking spaces (this may not include all private parking spaces, especially in apartment buildings). Approximately 4,040 of those are available as off-street public parking on a Saturday evening. Additionally, there are about 861 on-street spaces in the study area, totaling approximately 4,901 public parking spaces in Deep Ellum. Public parking included private paid lots, a few free lots, garages, and on-street parking. Additionally, NCTCOG staff counted the number of vehicles parked in non-approved locations (illegal parking) to capture total demand. Occupancy findings will only include public parking that was accessible during this study. It should also be noted that some lots have old or ambiguous striping of spaces which made determining exact inventory difficult and it appears drivers will attempt to park in undefined spaces to avoid paying, further distorting exact inventory and counts.

During this study, between November 2022 and June 2023, around 1,600 new parking spaces were added by new developments, notably from the Epic mixed-use site and a few additional surface lots from building teardowns. Also, some inventories were updated due to incorrect digital information initially provided. The on-street curb parking remained the same for all counts, however since not all on-street spaces are striped per stall, there is flexibility in maximum occupancy of parked vehicles on-street at any given time. **Table 1** summarizes the inventory of spaces available by count date. **Table 2** details inventories changed due to new lots/garage or corrected information.

Saturday, November 5, 2022, Conditions

- Approximate count times: 6:00 PM and 10:00 PM (This represents the peak demand period as indicated by stakeholders.)
- A total of 3,127 public parking spaces (861 on-street and 2,266 off-street) were observed.
- The Epic and The Stack parking garages are not included in this round of parking counts due to errors in using digitally collected data from payment systems.

Wednesday, June 14, 2023, Conditions

- Approximate count times: 10:00 AM and 12:00 PM
- A total of 4,705 public parking spaces (861 on-street and 3,844 off-street) were observed.
- Luna Uplift Preparatory school lots were excluded from this count as they are utilized by the school during daytime hours of operation.

Saturday, June 17, 2023, Conditions

- Approximate count times: 6:00 PM and 10:00 PM (This represents the peak demand period as indicated by stakeholders.)
- A total of 4,901 public parking spaces (861 on-street and 4,040 off-street) were observed.
- Parking lots and on-street parking along Main Street, Elm Street and Crowdus Street were closed due to Deep Ellum's Juneteenth Celebration.

Table 1: Deep Ellum Parking Inventory

Deep Ellum Parking Inventory			
Parking Space Types	**Parking Count Dates**		
	11/5/2022	6/14/2023	6/17/2023
All off-street spaces*	3,025	4,801+	4,837
On-street spaces	861	861	861
Total Spaces	**3,886**	**5,662**	**5,698**
Public off-street	2,266#	3,844^	4,040#
Total Public (on- and off-street)	3,127	4,745	4,901

**Data on residential multi-family parking is included in this total and approximated.*
#Including space in Luna Uplift Lot managed by Trees on nights/weekends.
+Excludes parking lot at 2809 Canton St. as it was discovered to be a new addition during the time of data collection.
^Excluding including space in Luna Uplift Lot during day.

Table 2: New Parking Facility and Data Error Changes

Facility	November 2022	June 2023	Notes
The Stack garage	464	638	Inventory data error
Epic I garage	192	472	Inventory data error
Epic II garage	0	873	New garage
2424 Swiss Ave. lot	0	162	New parking lot
2513 Main St. lot	0	64	New parking lot
2809 Canton St. lot	0	36	New parking lot (found on Wednesday 6/14, only in 6/17 data)
2516 Miranda St. lot	80	124	Inventory data error
Total	**736**	**2,369**	**Difference: 1,633**

Occupancy Findings

On Saturday, November 5, 2022, at 6:00 PM, a total of 1,741 vehicles were parked in the Deep Ellum study area. Of these, 807 vehicles utilized on-street parking, while 934 utilized off-street parking. During the 10:00 PM parking counts, Deep Ellum reached its peak use of 72 percent as nightlife activity began with a total of 2,238 parked vehicles. Of these, 890 vehicles were utilizing on-street parking while 1,348 vehicles were parked in off-street spaces. Tables and maps displaying the data findings can be found in **Appendix B**.

Wednesday, June 14, 2023, counts showed lower overall parking demand during the day in Deep Ellum. At 10:00 AM a total of 989 vehicles were parked in the study area with 454 on-street parking and 535 parked in an off-street facility. During the 12:00 PM study, an increase in parking demand was observed, likely attributed to lunchtime activity. A total of 1,256 vehicles were parked in the study area, with 573 vehicles parked on-street and 686 parked in an off-street facility.

During the 6:00 PM count on Saturday, June 17, 2023, there was a total of 2,175 parked vehicles, with 785 of them on-street and 1,390 utilizing off-street parking as seen in **Table 3.** During the 10:00 PM parking counts the district reached peak use at 51 percent, with a total of 2,501 parked vehicles as seen in **Figure 2**, including 842 in on-street parking and 1,659 using off-street parking. This mirrors the use pattern seen in the November 2022 counts, but it should be noted the total supply in June 2023 increased by over 1,600 spaces.

Note on Over 100 Percent Occupancy

For some on-street parking locations with an occupancy rate exceeding 100 percent, this is because of vehicles double-parking or squeezing more vehicles than anticipated as spaces are not delineated with curb stalls. Off-street parking lots with an occupancy rate exceeding 100 percent are usually the result of vehicles parking in non-delineated spaces or unpaved areas. Several locations in the data exceed 100 percent as one or two additional vehicles beyond the anticipated inventory were not uncommon.

Figure 2: Saturday 10 PM 06/17/2023 Deep Ellum Occupancy Counts

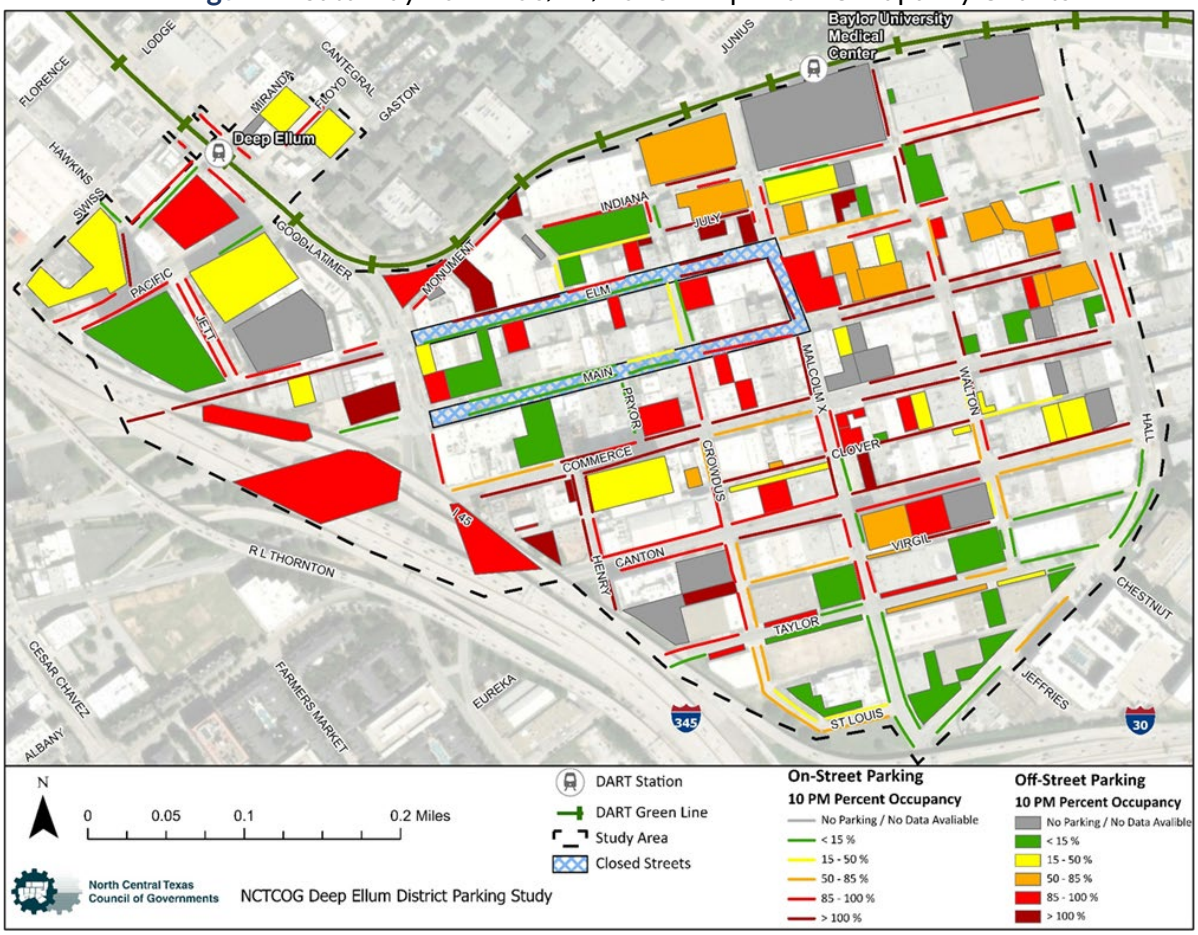


Table 3: 2022 and 2023 Deep Ellum Public Parking Utilization Summary

Saturday, November 5, 2022 *				
Time	**Type of Parking**	**Number Of Spaces**	**Number of Parked Vehicles**	**Occupancy Percent**
6 PM	**Off- Street Parking****	2,266	934	41%
	On-Street Parking	861	807	94%
	Unfilled		1,386	
	Total	**3,127**	**1,740**	**56%**
10 PM	**Off-Street Parking****	2,226	1,348	59%
	On-Street Parking	861	890	103%
	Unfilled		889	
	Total	**3,127**	**2,238**	**72%**

Wednesday, June 14, 2023 *				
Time	**Type of Parking**	**Number Of Spaces**	**Number of Parked Vehicles**	**Occupancy Percent**
10 AM	**Off-Street Parking**	3,844	535	14%
	On-Street Parking	861	454	53%
	Unfilled		3,716	
	Total	**4,705**	**989**	**21%**
12 PM	**Off-Street Parking**	3,844	686	18%
	On-Street Parking	861	573	67%
	Unfilled		3,446	
	Total	**4,705**	**1,259**	**27%**

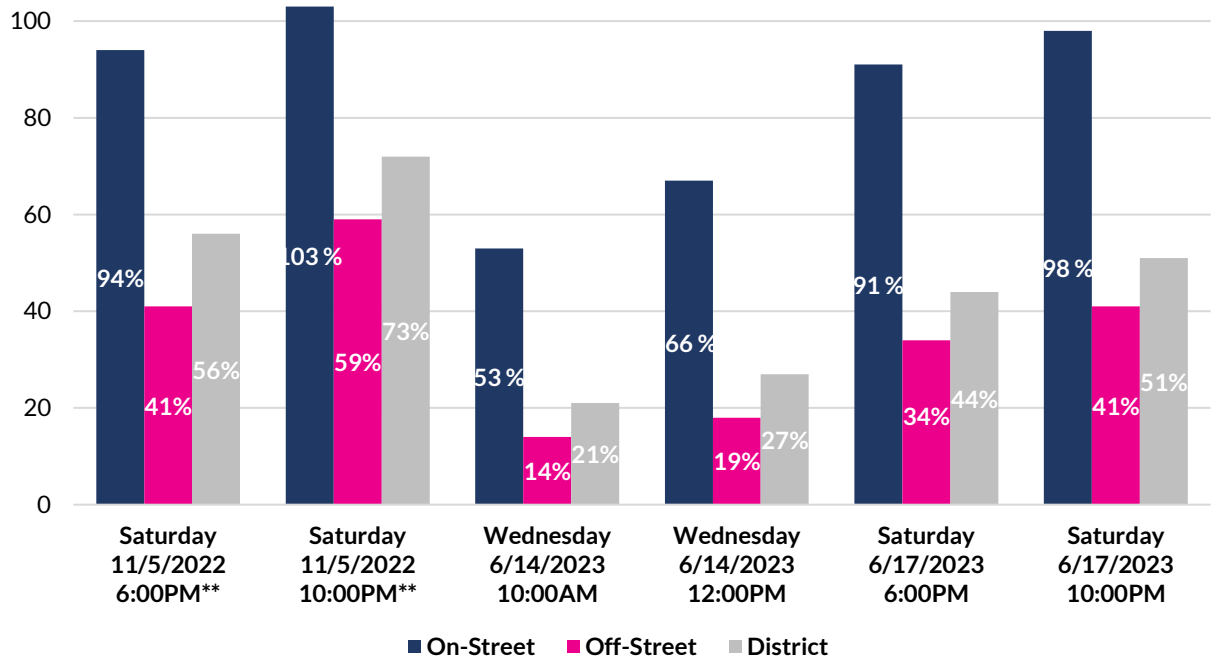
Saturday, June 17, 2023*				
Time	**Type of Parking**	**Number Of Spaces**	**Number of Parked Vehicles**	**Occupancy Percent**
6 PM	**Off-Street Parking**	4,040	1,390	34%
	On-Street Parking	861	795	92%
	Unfilled		2,726	
	Total	**4,901**	**2,175**	**44%**
10 PM	**Off-Street Parking**	4,040	1,659	41%
	On-Street Parking	861	842	98%
	Unfilled		2,400	
	Total	**4,901**	**2,501**	**51%**

**Public Parking Only*
***The Stack and The Epic II Garages were not included.*

Within the three data collection surveys, it was observed that on-street parking has the highest occupancy rate in the Deep Ellum district, averaging 84 percent overall. Its highest occupancy rate was recorded on Saturday, November 5, 2022, at 10:00 PM, reaching 103 percent, while the lowest rate, 53 percent, occurred on Wednesday, June 14, 2023, at 10:00 AM. Despite the

variation in on-street occupancy in Deep Ellum throughout the day, as depicted in **Figure 3**, it remains the preferred choice for drivers storing their vehicles while visiting at any time.

Figure 3 Deep Ellum Public Parking Occupancy Trends For all Study Periods

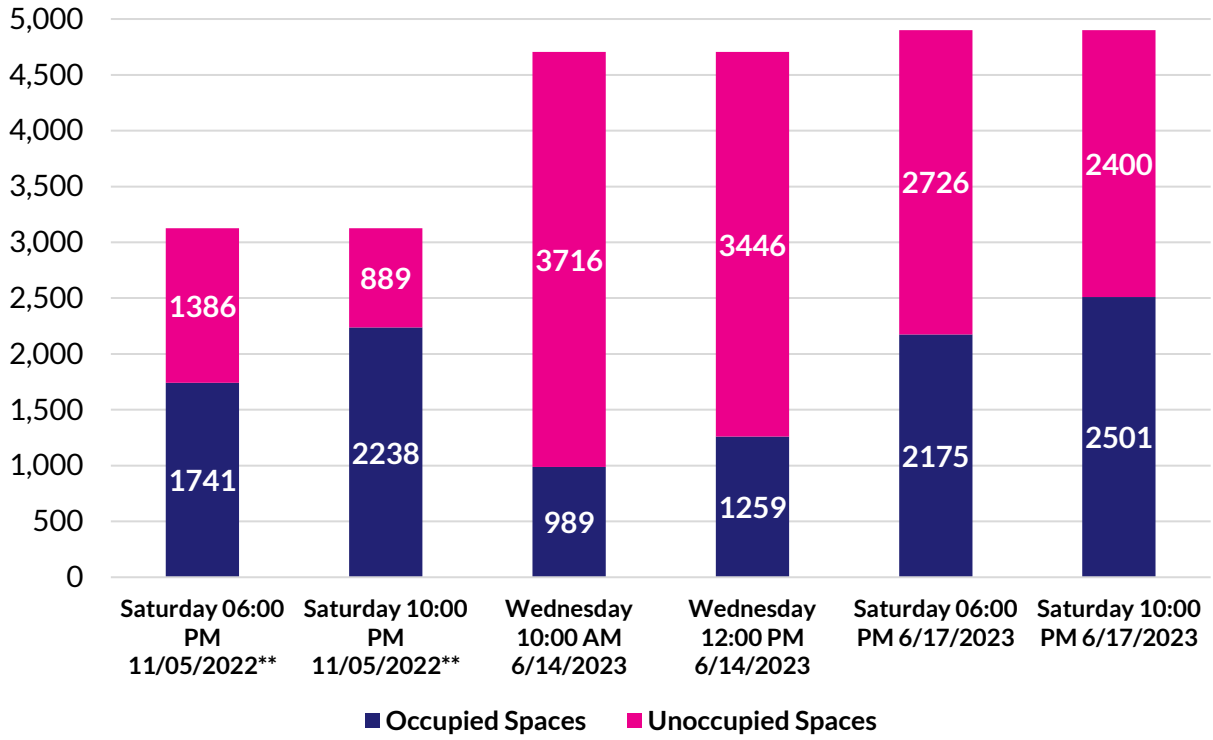


***The Stack and The Epic II garages are not included at these times.*

In contrast, off-street parking exhibits a lower occupancy rate, averaging 34.5 percent over all time periods. The lowest rate, 14 percent, was recorded on Wednesday, June 14, 2023, at 10:00 AM, while the highest occupancy rate, 59 percent, occurred on November 5, 2022. As mentioned earlier the November to June variation comes from the addition of new off-street parking such as The Epic II public garage and new surface lots. On Saturday, June 17, 2023, there were more vehicles parked in Deep Ellum than in November, however because of the over 1,300 new parking spaces, only 51 percent of parking was used meaning there is adequate parking supply.

Even with the addition of new parking spaces in Deep Ellum, the survey data and stakeholder conversations revealed the common concern that there is not enough parking within the district. However, data observed by NCTCOG would suggest availability is not the problem. As noted in **Figure 4**, even without The Stack and The Epic II included in the November counts, 889 public parking spaces were unoccupied at peak demand time of 10:00 PM. With the new parking garages and other off-street lots, there was a 2,000-space surplus at the Saturday evening peak in June 2023. This suggests issues around wayfinding (navigating to available spaces) and that prices might play a large role in influencing public perception of parking supply.

Figure 4: Deep Ellum Public Parking Total Utilization per Time Period



***The Stack and The Epic II garages are not included at these times.*

June Peak Pricing Sample

NCTCOG staff collected the posted price of parking at various paid off-street lots on Saturday, June 17, 2023. The price of on-street metered parking was verified via City of Dallas documents. On-street parking is managed by the City of Dallas and, per ordinance, curb price rate ranges from $.10 -$.50 an hour. The most expensive on-street curb parking in Deep Ellum is $0.50 per hour plus a $0.35 transaction fee when using the ParkMobile app. See **Table 4**.

Table 4: Deep Ellum On-Street Parking Rates from City of Dallas' On-Street and Curb Management Draft Policy

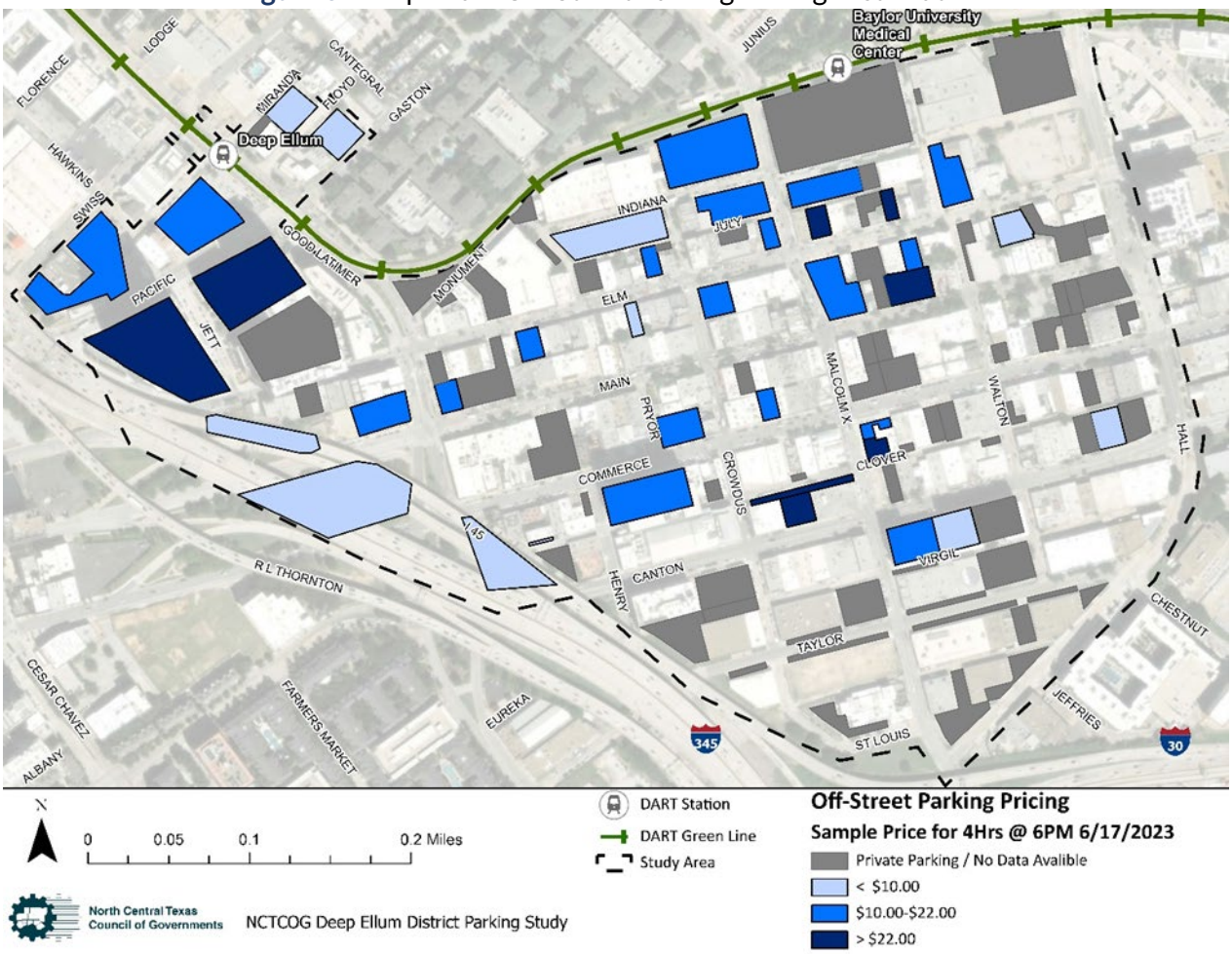
Hourly Rates (varies by block)	Times when Meters are Active (varies by block)	Split Rates: Location, Rates, and Applicable Times
$0.50	6pm-12am	None
$0.30	7am-12am	
$0.25	7am-6pm	
$0.10		

In comparison, off-street parking often varies in pricing depending on the type of lot, location, occupancy, and management. During the June 17 survey parking lot prices were recorded via a wide sample and it was revealed that the average price for parking in the district for a four-hour stay at 6:00 PM averages at $17.05 with the lowest rate of $5.35 to $34 as seen in **Table 5**. In comparison the maximum on-street cost for a four-hour stay is $2.35. The measure of a "four-hour stay" is used for comparison purposes because of the variation in which parking lots display prices. Some will post it hourly, or for three hours, nine hours, or one rate for all night. Many lots required the scanning of a QR code after parking to know the price, rather than having a price posted on signs visible before parking. This may mean prices at those lots are variable with time of day/day of week. **Figure 5** shows a map of sampled facility prices categorized by low (less than $10 for four-hour stay), to medium ($10 to $22), and to high (over $22).

Table 5: Sample Pricing of Public Off-Street Parking Summary Statistics

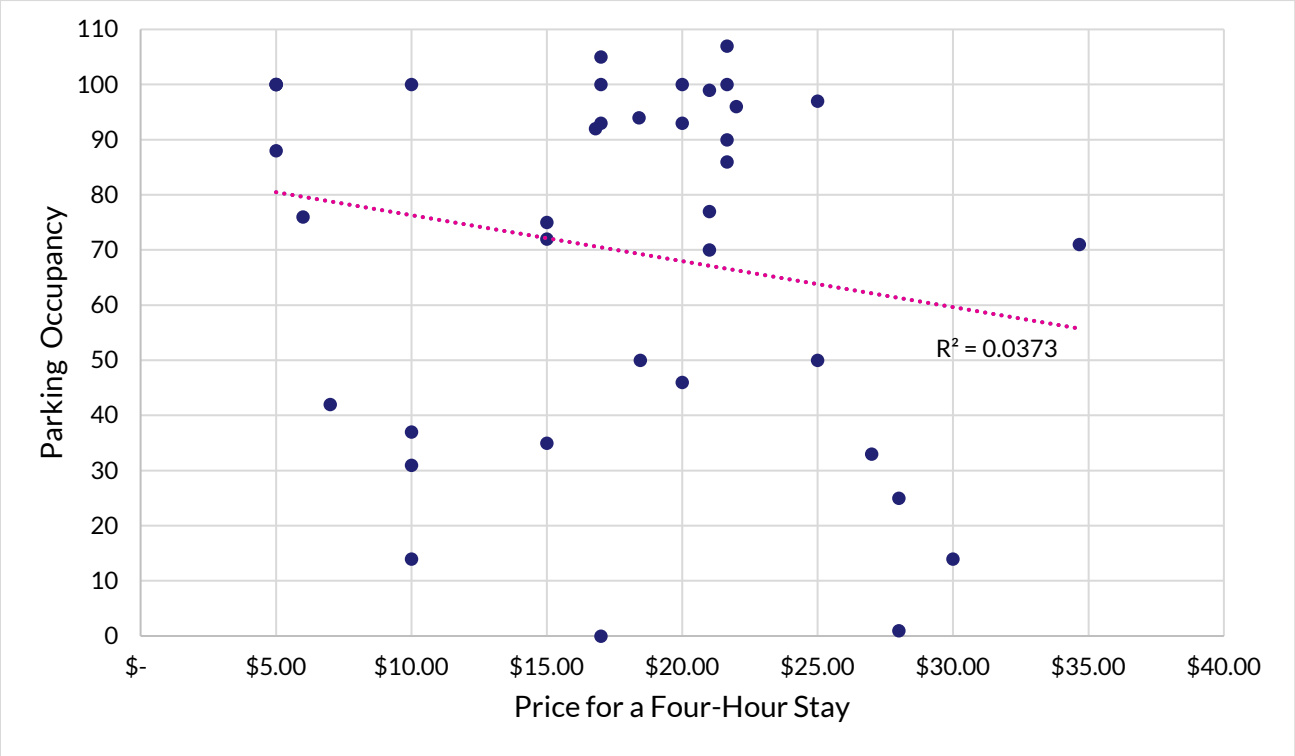
Highest Off-Street Parking Price	$ 34.00 / 4 Hrs.
Lowest Off-Street Parking Price	$5.00 / 4 Hrs.
Average Off-Street Parking Price	$17.15 / 4 Hrs.
Maximum On-Street Price	$2.35 / 4Hrs.

Figure 5: Deep Ellum Off-Street Parking Pricing Distribution



In examination of the wide price variation of off-street parking prices, it is unclear how much price alone influences parking demand per facility. When analyzing trends in Deep Ellum, as illustrated in **Figure 6,** the relative demand versus price analysis for the 10:00 PM peak demand on June 17, 2023, shows a Microsoft Excel trendline R^2 value of 0.03. Since this R^2 value is between zero and 0.09 (or between zero percent to nine percent) it is too low to conclude a strong relationship between price and use. Other factors such as distance from their location, safety, awareness of/ finding the parking facility, and duration of stay may also strongly influence the choice of off-street parking lot. Sources for Interpreting the R^2 values: https://mpra.ub.uni-muenchen.de/115769/1/MPRA_paper_115769.pdf

Figure 6: Deep Ellum Parking Price Relative to Demand - 6/17/2023 - 10 PM



Signage, Wayfinding, and Communication Existing Conditions

How drivers navigate to and find parking is not only important to the customer experience but also to the overall efficient use of parking. The information public and private entities provide on parking includes signage, wayfinding, and communications in Deep Ellum. This section will cover their existing conditions.

Signage

With the rising demand for curb space in Deep Ellum it is important to make sure parking regulations and information signage is clear and enforceable. Some of the major issues with signage noted by City of Dallas and NCTCOG staff as well as stakeholder and community members include:

- ***Sign Clutter:*** Deep Ellum has an abundance of signage on private property as seen in **Figure 7**.[1, 2] It has frequently been noted that in both on-street and off-street parking, this may be confusing to visitors and lead to an increase in traffic circulation and driver distraction.

Figure 7: Sign Clutter in Deep Ellum

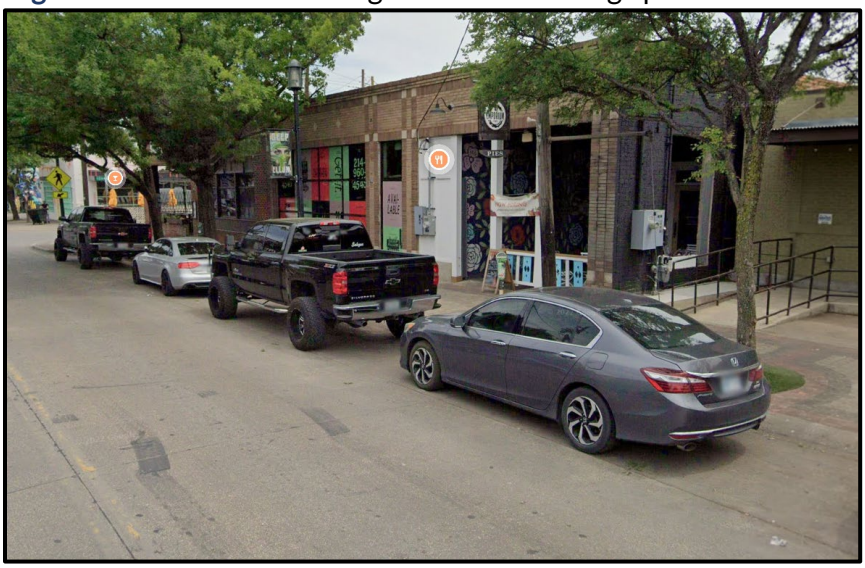
- ***Off-Street Sign Standard Absence:*** In Deep Ellum, signs lack standardization in terms of design and placement. Private lots are also inconsistent in the information provided regarding time limits and prices. Off-street parking as seen in **Figure 7** may struggle to communicate dynamic rules.

- ***Missing On-Street Parking Space Delineation:*** Deep Ellum lacks pavement marking to delineate the limits of on-street metered parking stalls as seen in **Figure 8**,[3] often due to faded markings such as on Main and Elm Streets. Others like Malcom X Boulevard and

[1] *Google Street View*
[2] *NCTCOG*
[3] *Google Street View*

Canton Street are technically travel lanes at peak times and cannot be marked. This leads to instances where parked vehicles are not aligned with any single meter (double parking) and makes it difficult to enforce parking in metered parking stalls.

Figure 8: Main Street Missing On-Street Parking Space Delineation

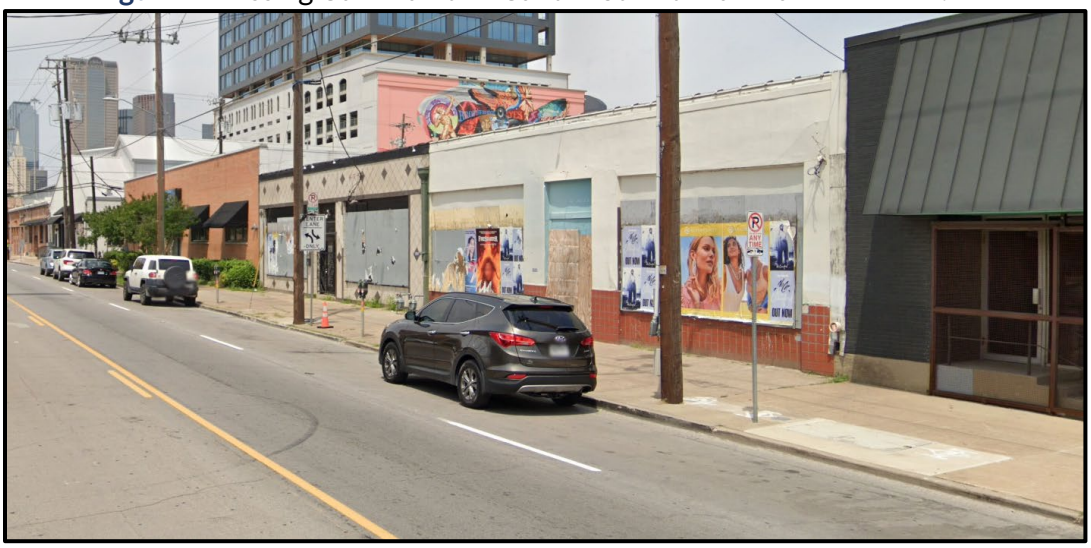


- ***Confusing On-Street Signage:*** Stakeholders have presented the concern of the lack of clear signage in Deep Ellum, confusing motorists where and when it's legal to park. This primarily applies to on-street "No Parking" signs which rely on different printed text with messages such as "Here to Curb" or "This Side of Sign".

- ***Inconsistent Curb Paint:*** Curb painting is not currently in city code and not consistently used in Deep Ellum as seen in **Figure 9.**[4] Painted curbs can more clearly indicate "No Parking" zones than signage alone.

[4] *Google Street View*

Figure 9: Missing Curb Paint on Canton Street near Malcom X Blvd.



The City of Dallas' draft *On-Street Parking and Curb Management Policy* (OSPCMP) document includes further description of these citywide issues which also apply to Deep Ellum.

Wayfinding

Based on NCTCOG observed data, certain off-street parking options consistently experience low utilization. This is particularly true for The Epic I and The Epic II garages, which are newly opened and are less visible to the public. Navigating to specific parking options can be challenging, especially for newcomers to the district. Since most parking facilities are privately owned and operated, each entity uses a different style and sign type. As depicted in **Figure 10**[5] each entity has their own wayfinding elements and signs that are not only inconsistent but also may be ineffective due to their tendency to blend into other non-parking directional signage details.

[5] *Google Street View*

Figure 10: Examples of Wayfinding in Deep Ellum

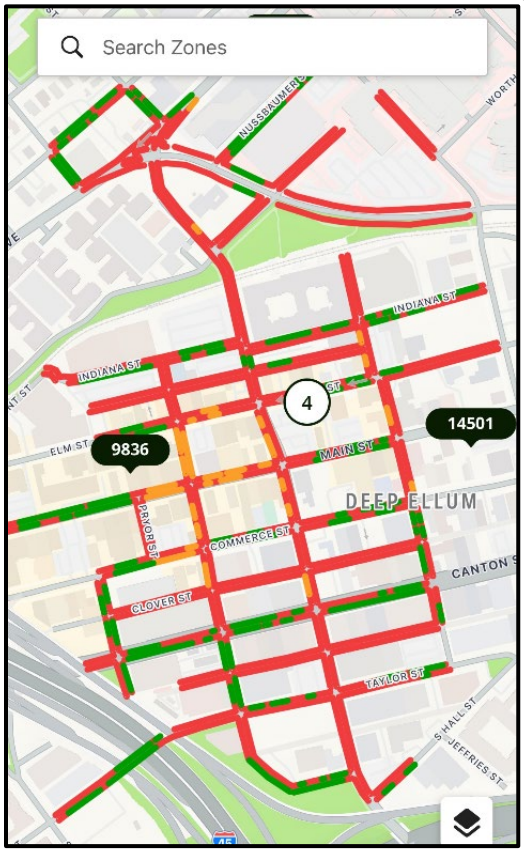
Most importantly, existing signage for most parking lots and garages in Deep Ellum as those observed in **Figure 10** only become noticeable once individuals have already reached their intended parking destination. There is no "breadcrumb" or “trailblazing” wayfinding signage along main thoroughfares to navigate to these parking options other than circling the blocks. In this context, wayfinding refers to the in-person physical signage that aids drivers in navigating once they arrive. Deep Ellum patrons can use digital communication via mobile applications and websites to navigate as well.

Communication

In an ideal setting, drivers could access information on parking in the district ahead of time through websites or via mobile applications. Today there are a few publicly sponsored and numerous third-party digital applications and websites. NCTCOG staff found that many of these services may not be effective, as they often lack updated parking inventories or regulatory information. Furthermore, NCTCOG’s public survey findings suggest that it is unlikely that many drivers use these resources.

Currently, ParkMobile is the City of Dallas' parking payment vendor. It is likely the parking application with the most public awareness, however it does not offer wayfinding/navigation services. It has the capability to show real time on-street demand parking as shown in **Figure 11.**[6]

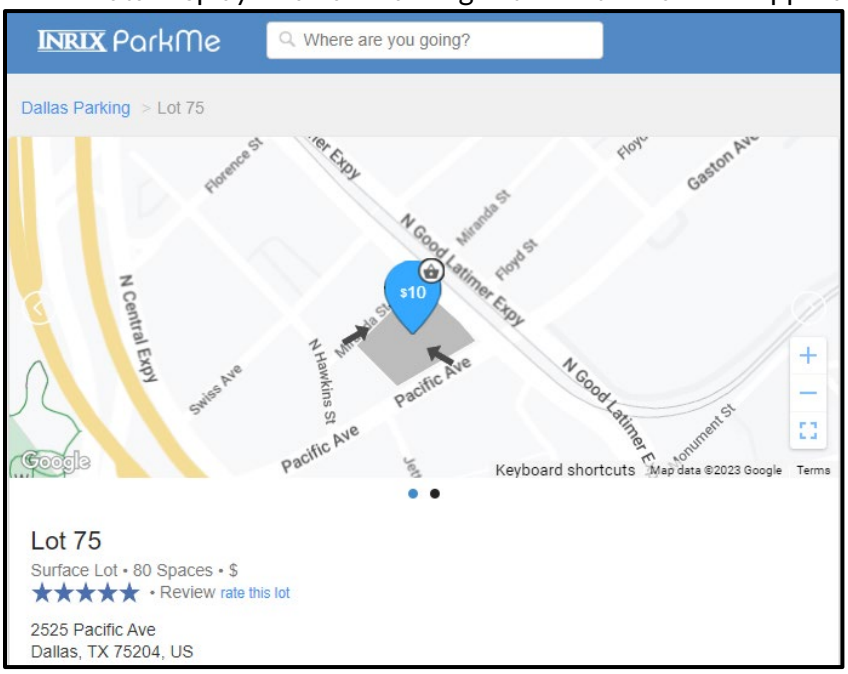
Figure 11: ParkMobile On-Street Real Time Parking Demand



Numerous other mobile applications claim to offer data on Deep Ellum such as ParkMe, Parkopedia, and ParkWhiz. These third-party apps can be utilized for finding private off-street parking facilities. In some cases, payment or reservations can be made as well. There appears to be inconsistency and accuracy issues between the private lots and the apps. It is unclear how data from privately managed lots is shared with privately run mobile applications and websites. However, the third-party process may be prone to errors as shown in **Figure 12**[7] below:

[6] *ParkMobile*
[7] *ParkMe*

Figure 12: Data Display on a Paid Parking Lot from the ParkMe Application

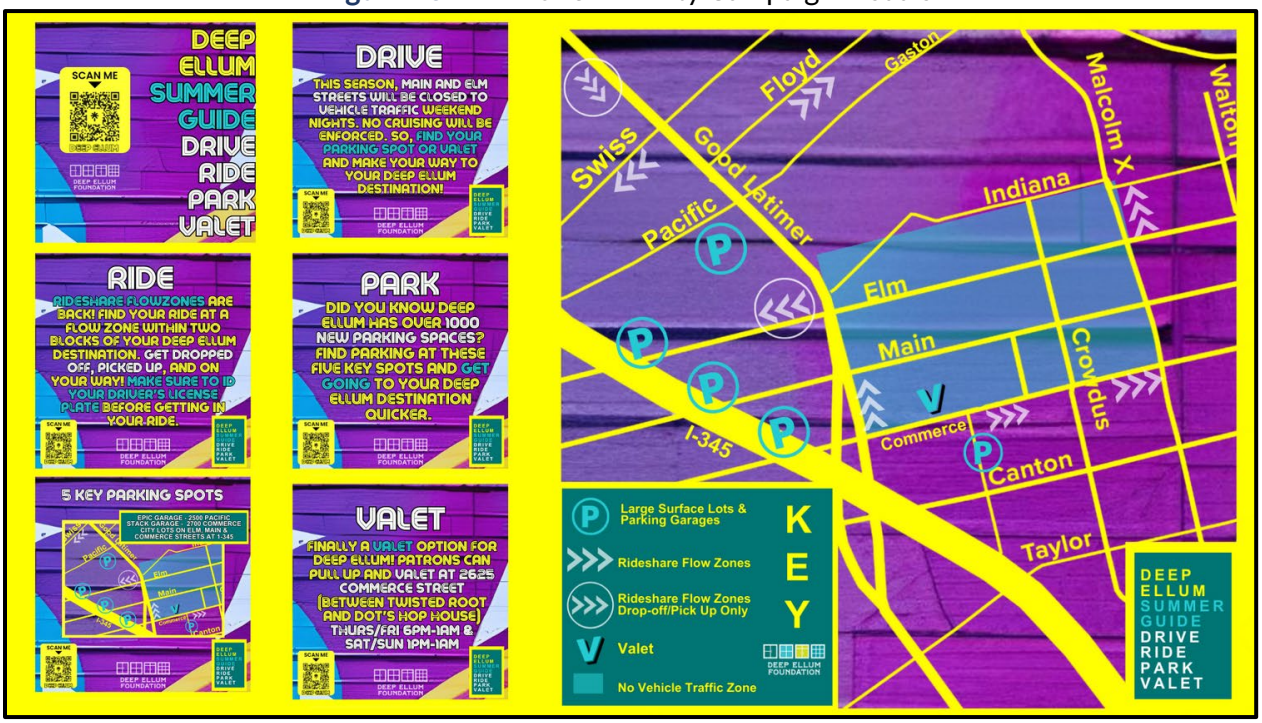


In the image above, INRIX's ParkMe application reports that the parking lot at Good-Latimer Expressway and Pacific Avenue only has 80 parking spaces. However, this is not accurate. An in-person verification count inventoried 124 parking spaces at this lot. Multiple similar examples can also be found in other online sources. This is not unique to Deep Ellum or Dallas. Other cities across the nation have also noticed inconsistency with third-party mobile apps and on-ground observed conditions such as Spokane, WA in 2019 - https://my.spokanecity.org/parking/downtown-parking-study/.

The "Getting Here" web page by the DEF currently offers information on transportation options and notes on parking in the district: https://www.deepellumtexas.com/map-transport/. In its current form the map does not provide information on how much parking is at each lot or information like the address of the lot entrance. The web page does provide some indication of general district pricing.

In the spring of 2023, the DEF also launched a campaign to encourage multiple modes of travel and new parking options: Get Around Deep Ellum — Deep Ellum Foundation (deepellum-foundation.com) as seen in **Figure 13**. It features five key parking locations and information on new valet service along with district rideshare flow zones. Content from this parking and mobility information campaign was still available on the DEF website as of October 2023.

Figure 13: DEF 2023 Mobility Campaign Visuals



Summary

The current state of signage, wayfinding, and communications in Deep Ellum parking presents several challenges. This includes sign clutter, the lack of clear sign standards, a lack of delineation for on-street parking spaces, confusing signage, and unapplied curb paint as pointed out by the City of Dallas in citywide trends for the draft *On-Street Parking and Curb Management Policy*. Additionally, various private entities use their own onsite wayfinding/signage elements which may not be effective on their own without broader wayfinding elements.

While there are digital communication options and numerous third-party digital applications, they may not have the needed features and may contain some inaccurate data. Deep Ellum Foundation websites provide some helpful information but it is split among two web pages and navigational details are limited. Survey findings from this study suggest that only around 11 percent of the public utilizes these resources. DEF is working to increase public awareness with social media and website campaigns.

Finally, stakeholders engaged during this study have indicated that information about parking in the district is not optimal. This study will focus on options and recommendations of physical and digital elements of signage, wayfinding, and general parking communication in Deep Ellum.

Policy Context

Dallas On-Street Parking and Curb Management Policy Draft

The City of Dallas has drafted an *On-Street Parking and Curb Management Policy* (OSPCMP). It was presented in the summer of 2023 for public review and comment: https://dallascityhall.com/departments/transportation/Pages/curb-management.aspx. This review section has been updated to reflect a revised draft released by the City of Dallas in 2024. It should be noted that the Dallas OSPCMP is only a draft and must be adopted by the City Council before taking effect. Minor adjustments are expected before final adoption. The draft is highlighted here to acknowledge the city's awareness of the issues and for its outline of solutions.

The City of Dallas is the owner of the on-street curb space in Deep Ellum and will need to be the implementation entity of changes to on-street parking. This review of the Dallas OSPCMP draft will focus on its recommendations that apply to on-street parking issues identified by the NCTCOG study. The focus areas on the list from the Dallas OSPCMP is generally as follows:

- Prioritizing and Allocating Curb Space
- Creating Local Parking and Curb Management Plans
- Parking Time Limits
- Paid Parking
- Loading Zone
- Parking for Special Users
- Signage and Markings
- Communication

Most of these apply directly to challenges identified by existing data and stakeholder input gathered in Deep Ellum.

Prioritizing and Allocating Curb Space

Determining which activities are permitted on a specific street curb is the fundamental aspect of curb management. The City of Dallas is proposing the establishment of a structured framework for assessing how curb spaces should be assigned and utilized. The draft OSPCMP identifies five broad categories for the prioritization of curb use: mobility, accessibility, activation, greenery, and storage. All of these are relevant to Deep Ellum as it would benefit the district from a general discussion on re-prioritizing its curb from being majority storage (parking for several hours) to the dynamic uses by a mixed-use district, thereby facilitating the safe and efficient flow of both people and goods.

Creating Local Parking and Curb Management Plans

The Dallas OSPCMP establishes a framework for parking and curb management plans as a first step for Dallas neighborhoods looking to enhance their parking management. This study meets several of the objectives listed in that recommendation as of 2024.

Parking Time Limits

The City of Dallas currently does not use parking benefit districts (PBD). The OSPCMP proposes the establishment of a PBD as a win-win solution for customers, business owners, and other stakeholders when parking meter price increases are used. The additional revenue from metered

parking can fund additional public services within the district. By introducing a PBD in Deep Ellum, it would possibly smooth the impact of meter price increases and allow for the funding of services and improvements such as:

- Sidewalk widening or repairs
- Lighting
- Public safety
- Bicycle infrastructure and amenities
- Transit amenities and passes for employees
- Wayfinding

Paid Parking

Adjusting Meter Rates

The City of Dallas currently has some of the cheapest metered parking for large cities in the country. They are proposing that the OSPCMP allow staff to adjust meter rates to achieve curb parking turnover for greater access and availability and reduce road congestion from drivers searching for on-street parking. Performance-based meter prices should be based on regularly collected occupancy data to determine the adequate price that allows one to two spaces to be available per block. This would be significant for Deep Ellum given the current disparity between on-street parking which are many times cheaper than the average off-street parking lot. This may also relieve some traffic congestion in Deep Ellum as currently underpriced street parking incentivizes drivers' circulation for on-street parking often not available.

Establishing Event Parking Rates

The OSPCMP proposes increasing street meter rates in response to events with over 10,000 attendees. The document specifically suggests this would impact locations such as American Airlines Center, Cotton Bowl/Fair Park, and the Dallas Convention Center. For context, The Factory in Deep Ellum lists its max capacity at 4,300 people. This strategy may not apply to Deep Ellum.

Loading Zones

The OSPCMP proposes the introduction of flexible loading zones to address the expanding loading needs and proactively manage both loading requirements and the demand for on-street parking, particularly in new developments within commercial and mixed-use districts. Zones should be closely monitored to ensure effective enforcement. The OSPCMP provides a general example of zones that may flex throughout the day but does not clearly define the process for implementing them. Introducing Flex Loading Zones in Deep Ellum could be used to optimize limited curb space, more effectively accommodating loading dynamically throughout the day.

Parking for Special Users

Curb space should be equitably available to serve the needs of both employees and the best interests of a neighborhood. Proactive planning and allocation of curb spaces for employees should ensure access to their workplaces while also ensuring that access for neighborhood businesses and residents is not disproportionately affected by the demands placed on the curb by external users. The OSPCMP proposes that workshops be convened with business districts and stakeholders with the City of Dallas to discuss strategies such as:

- **Shared parking arrangements with private property owners:** Off-street locations that can be shared with private entities at different times of day ensuring that valuable short-term on-street parking is available for patrons.
- **Parking permits for underutilized streets:** Allow employees to park on lower demand streets, thereby leaving spaces in high demand areas for visitors and customers.
- **Travel demand management (TDM):** Incentives or programs that encourage employees to use other modes of transportation to reduce employee parking demand.

Employee parking challenges have been highlighted in Deep Ellum as a major concern. A district solution should follow the process outlined in the OSPCMP.

Signs and Marking

Various types of signs using text rather than symbols, without accompanying curb paint, can confuse drivers about where and when it is legal to park. The OSPCMP recommends making signage and markings consistent across the city to minimize confusion and improve expectations by:

Delineating Parking Meter Stalls and Other Zones: The absence of clear paint delineations for on-street metered parking is a prevalent issue. Clearly marking each metered space could improve the efficiency of street parking. This would enhance safety at intersections, driveways, and pedestrian crossings by establishing clear setbacks, and make it easier to enforce violations when drivers park outside of designated legal parking areas.

Painting Curbs: The OSPCMP recommends that the City of Dallas makes greater use of painting curbs in metered parking areas as these areas have the highest demand for curb space and the greatest potential for conflict. If implemented in Deep Ellum, this will help communicate to drivers specific on-street parking rules and be a supplement to on-street signage or to reduce signage clutter by communicating the restrictions via curb color.

Updating Signage: As demand from existing and new curb use has increased over the past decade, so has the need to update signage regulating curb use. The OSPCMP recommends:

- Provide signage and markings for curb uses that are consistent within districts and across the city and are easy to see and comprehend.
- Utilize symbols rather than words.
- Update No Parking signs for clarity as new standards are adopted.

To enhance the experience for all curb users and provide clarity in Deep Ellum, the need to implement consistent signage, clear markings, and effective wayfinding is recommended not only to manage expectations but also simplifies the experience, making it more predictable and user-friendly on when and where its legal to park.

Communication

The OSPCMP encourages outreach as essential for educating the public about the city's and district's goals, objectives, regulations, and practices related to its parking programs. To effectively implement curb management tools and policies, it is crucial to ensure clear communication with users to minimize confusion and frustration while promoting a better understanding of curb

operations. This outreach can take various forms, including websites, videos, informational packets, or engagement with parking enforcement officers.

Additionally, the OSPCMP recommends the provision of real-time availability information through smartphone applications, offering accessible details on parking locations, rates, restrictions, and current availability. This could allow users to find available parking faster and make informed decisions on where and when they should park, which can reduce congestion associated with the search for parking.

Summary

- Prioritizing and Allocating Curb Space: Frame conversations in re-prioritizing curb space from a majority focus on vehicle storage (several hours of parking) to other needed uses such as access and mobility.
- Creating Local Parking and Curb Management Plans: Various parking management strategies **can** promote access to businesses in the area with adequate turnover of on-street parking.
- Parking Time Limits: Time limits and restrictions encourage parking turnover and enhance exposure for nearby businesses throughout the day.
- Paid Parking: Modifying parking meter rates, implementing event-specific parking rates, and creating a Parking Benefit District can enhance on-street parking turnover, improve business accessibility, alleviate road congestion resulting from the search for street parking, and encourage the use of alternative transportation modes.
- Loading Zones: Flexible loading zones allow for the expanding loading needs and proactively manage both loading requirements and the demand for on-street parking.
- Parking for Special Users: Overseeing workshops for businesses and stakeholders alike with the City of Dallas to plan curb space allocation for employees without disproportionately impacting local access.
- Signs and Markings: Signs and markings should be consistent across the city to minimize confusion and reinforce curb user expectations by delineating parking meter stalls and other zones, painting curbs and updating signage.
- Communication: Engaging in outreach efforts to inform the public about the City of Dallas' and the district's goals, objectives, regulations, and practices related to parking programs.

Dallas Zoning in Deep Ellum

The Deep Ellum District Parking Study area is located primarily within Planned Development (PD) District 269, also known as the Deep Ellum/Near East Side District. It additionally overlaps sections of Central Area (CA) district 2(A), and PD 298 (specifically PD 298 Subarea 5) also known as the Bryan Area Special Purpose District.

Planned Development District 269 – Parking Requirements

The zoning of PD 269 is geared towards a pedestrian-oriented district with relatively low off-street parking requirements and more reductions compared to most of the City of Dallas. For example, the City of Dallas mandates one parking space per bedroom for multi-family, whereas in PD 269, structures built after 1984 only require one parking space per dwelling unit. Other uses with lower off-street parking requirements in PD 269 than the rest of the city include microbreweries, microdistilleries, or wineries; personal service; and library, art gallery, or museum uses.

PD 269 also exempts the first 2,500 to 5,000 square feet of commercial use in structures built before 1984 (also called original building as prescribed in Chapter 51A of Dallas city code) from required off-street parking. Some of these uses include bars, lounges, taverns, private clubs, restaurants, commercial amusement, microbrewery, micro distillery or wineries, professional service, and custom crafts. Additionally, there is a parking reduction for users located in proximity to DART stations. Off-street parking requirements for uses located within a quarter mile of a DART light rail station may be reduced by 10 percent.

However, there are some uses where parking minimums are higher in Deep Ellum including office establishments, retail establishments, drive-in restaurants, and skate parks.

Central Area-2(A) – Parking Requirements

This zoning district is provided to accommodate existing development in the central area of the city, to encourage the most appropriate use of land, and to prevent the increase of street congestion (Section 51A-4.14(B)1). This zoning applies to a small area north of Pacific Ave. within the context of this study area. Off-street parking is not required for buildings with 5,000 square feet or less of floor area. Multi-family parking is generally lower at one parking spot for 2,000 square feet. However, all other uses require one space per 2,000 square feet, which may be higher than other areas.

<u>Additional Parking Management Items</u>

PD 269 also offers a cash-in-lieu of parking option for new development that allows properties unable to meet the mandatory parking requirements to pay the city the cash value of those spaces not built. The purpose of these contributions is to facilitate parking improvements within the area, including projects such as constructing parking garages or implementing other upgrades benefiting properties in that specific zone. However, in discussions with the city it was determined there is currently no established process for the utilization of these cash-in-lieu funds within the district.

Additionally, Deep Ellum's Planned Development District is one of only several in the city where paid off-street parking is allowed, so that City of Dallas code, Section 51A-4.301(a)(8) does not apply in this district. This has allowed, for example, the large garages in the district to offer significant volumes of managed public parking that would not otherwise occur in districts throughout the city.

Parking Management Best Practices

This section will summarize the findings of a strategic parking management literature review and implementation case studies done by NCTCOG staff. The three best practice areas include parking management district case studies, examples of performance meter pricing, and wayfinding/ communication. This builds on existing subject area knowledge summarized at www.NCTCOG.org/parking. Listed below are brief summaries with the main findings. Full details and source links for all three are available in **Appendix C**.

Parking Management District Case Studies

A parking management district is typically a geographic area with a mix of land uses that offers a substantial pool of public or shared parking spaces. Districts usually function to help meet parking demand for many properties at the district level rather than every property supplying its own parking onsite. In many cases these districts also employ various management strategies in combination with the shared spaces to optimize the efficiency of parking and transportation access to the district.[8]

The parking management district case studies presented in **Appendix C** come from various cities in the United States strategically managing their parking assets effectively and efficiently. No parking management districts fitting the definition above were identified in North Texas. The national case studies are summarized here to inform the evaluation of strategies that can be implemented in Deep Ellum. Further details on each can be found in **Appendix C**.

Summary – Parking Management District Case Studies Best Practices

Across the six cases studied, a trend of five common strategies was identified. These practices typically revolve around strategic pricing.

Parking Benefit District

This is a parking management tool where rates are set at a "right price" to promote parking turnover and a portion of or all metered revenue is reinvested for public services. Five of the six districts used this as part of parking meter implementation or pricing. This enhances the overall function of mobility and enforcement in the district.

Metered/Priced Parking

Every case studied implemented metered parking to discourage excessive stays, reduce the amount of circling for free parking, promote alternative transportation modes, encourage carpooling, and increase parking turnover to improve access. Only one of the six, Boulder, CO, is planning on using dynamic pricing. The other districts either just recently added meters or extended payment to evenings. A separate section of this report goes into specific examples of dynamic pricing.

[8] *Parking manage definitions:* Parking and Transportation Management District | AustinTexas.gov; *and* Parking Management Districts | ParkingToolBoxNTX (nctcog.org)

Parking Permits

Parking permits are a strategy used to prevent the overflow of parking into non-commercial areas. Various types of parking permits such as resident or employee permits have restrictions on where, when, and how long a user may park.

Alternative Transportation and Employee Programs

Most of the districts highlighted a challenge of affordable employee parking. Some locations tried a shuttle bus to transport workers from underutilized parking. Or they provide incentives, passes, or permits to use alternative modes of transportation to reach the district. In most cases these mobility services were either provided by the city or the district using parking benefit district funds.

Incorporating Technology

Often the districts used well-designed mobile applications and websites to provide the public with parking information including locations/maps, regulations, fees and in some cases showing live parking occupancies. Some also used these to promote other modes of transportation to their districts. Payment by mobile application is nearly universal to many locations.

Key Takeaways

Based on this sample of public parking management districts, strategies often center around the pricing of on-street parking. Parking at the curb is often the most desirable parking and most underpriced, creating the biggest impact on business access and congestion. The strategic pricing of curb space is often best paired with parking benefit districts to turn what may be perceived as a negative price increase into an opportunity for positive improvements. Meter revenues via a parking benefit district can be used to support more transportation options and employee mobility needs. New technology has also allowed cities to implement management strategies and communicate parking options more easily. This, along with increasing density, has spurred more management districts in the last decade.

All cases either rely on or have on-street parking, which play a significant role in management. City governments are the primary actors in implementing the management actions of that on-street parking. Two of the cases, Midtown Houston and Short North, Columbus, OH, had a business district like a public improvement district take a leading role in implementing parking management with their city. A summary table of strategies used by each management district type is found in **Table 6**.

Table 6: Parking Management Districts by Common Strategies

	South Side Flats, Pittsburgh, PA	Midtown, Houston, TX	Uptown/ Kern, El Paso, TX	Downtown Boulder, CO	Short North, Columbus, OH	Friendship Heights, Montgomery, MD
Management Type	Parking Benefit District	Parking Benefit District	Parking Benefit District	Parking Benefit District	Parking Benefit District	Transportation Management District
Location Context	Urban Neighborhood	Urban Neighborhood	Historic Neighborhood	Historic Downtown	Urban Neighborhood	Transit-Oriented Development
Parking Type	On-Street	On-Street	On-Street	Garages Surface Lots On-Street	Garages Surface Lots On-Street	On-Street
Management Strategies						
Metered Parking	x	x	x	x	x	x
Parking Permits	x	x	x	x	x	
Transportation Services and Programs	x			x	x	x
Incorporating Technology			x		x	
Dedicated Enforcement				x		
Shared Parking				x		

Performance Pricing for On-Street Case Studies

Performance pricing or demand-based parking is a management tool that sets meter rates based on demand to achieve a target occupancy rate. Typically, the goal is to achieve a 10 to 20 percent vacancy rate or one or two available spaces on any block to ensure that drivers can usually find a space, mitigating their need to circle the block searching for parking and reducing traffic congestion. The City of Dallas has proposed exploring the implementation of a performance-based parking pricing program in their draft *On-Street Parking and Curb Management Policy*. **Appendix C** contains the review of performance pricing efforts in Washington, D.C., Boston, and San Francisco. The findings from these studies can serve as a guide for potential implementation strategies in the Deep Ellum area.

Key Insights on Performance Pricing for On-Street Parking

- Using demand based/performance pricing can increase the turnover of vehicles at the curb and increase visitors/access to the applicable streets.

- Demand-based pricing can reduce the time drivers spend searching for parking with increased space availability. This may also reduce street congestion.

- Communication and awareness of the prices are important to change public behavior. Public education campaigns and consistent, easily accessible sources of information are helpful in implementation.

- Data collection resources, especially up-to-date technology, are needed to effectively implement demand-based performance pricing.

- Zone-based pricing, that is, pricing all meters on a street or zoned area of streets the same, is easier for the public to anticipate and may influence behavior more than pricing each street differently.

Wayfinding, Signage, and Communication

Wayfinding refers to the tools and techniques used to orient and navigate users within an environment. Wayfinding includes both physical forms such as paint, static and dynamic signage, and digital tools such as applications, websites, social media, and other communication channels. These strategies play an important role in parking and transportation within a district for visitors and residents to understand rules, navigate efficiently, and minimize congestion. **Appendix C** covers physical and digital wayfinding best practices from studies and implemented examples both locally in North Texas and around the United States.

Conclusions

- A combination of curb paint and well-designed signage is important to managing street parking.
- Static signage that is consistently branded for a district may help drivers find parking faster and reduce congestion. Additionally, signage that is used to lead drivers to parking ("trailblazing" or "breadcrumb") is commonly implemented in districts for public parking.
- Real-time dynamic signage is more expensive than static signage and has a mixed record for districts with some cities removing it from their public districts. Numerous private garages in North Texas use dynamic availability displays and equipment.
- A growing trend is the use of website/mobile applications to communicate with the public on parking.

Recommendations

Following engagement with stakeholders, observed data collection on parking use, and research of national best practices in parking management, NCTCOG has eight recommended actions. This section provides details as needed to clarify the recommendations and who should execute each action. Through the recommendations, NCTCOG is suggesting a path forward that the City of Dallas and Deep Ellum Foundation may choose to follow in whole or in part to address their parking challenges.

List of recommendations:

1. Adopt the *On-Street Parking and Curb Management Policy*
2. Demand-Based Curb Parking Pricing
3. Parking Benefit District
4. Employee Programs
5. Signage and Markings Update
6. Wayfinding and Communication
7. Alternative Transportation
8. Curb Prioritization

Following the recommendation is an “implementation scenario" section. This reflects the different timing options and conditions that may impact the ability for each party to implement the recommendations. While it primarily focuses on the City of Dallas and DEF, private parking facility operators play an important role in several recommendations.

Recommendation 1 – Adopt an On-Street Parking and Curb Management Policy

The City of Dallas should adopt a new *On-Street Parking and Curb Management Policy* following the concepts listed in its February 2024 draft.

In July of 2023 the City of Dallas published a draft OSPCMP. It was further refined in February of 2024. It's based on a curb study and parking research following the *Connect Dallas Strategic Mobility Plan*. The proposed policy provides necessary updates and the new regulatory framework needed to authorize parking management best practices in Dallas City Code.

The current City of Dallas' Code limits on-street parking management authority. For example, meter prices are specifically by council action, district by district. There is also no current standard for painting curbs or consistently implementing curb management. The proposed OSPCMP establishes many of the processes needed to improve parking management in Deep Ellum.

Cities around the United States from Seattle to Washington, D.C. have used strategic on-street parking management to improve transportation and parking conditions. The Dallas City Council is likely to consider adopting the policy in 2024. Their approval of this policy is the essential first step to City of Dallas staff advancing essential parking management actions. NCTCOG recognizes the exact policy language may change from its draft version. NCTCOG supports the core management concepts as indicated by the policy in this Deep Ellum plan's recommendations.

Recommendation 2 – Demand-Based Curb Parking Pricing

Adjust on-street meter rates based on parking demand to maintain about one to two available spaces on each block. It's recommended this be implemented following the process in the City of Dallas' *On-Street Parking and Curb Management Policy*. This should be closely coordinated with the Parking Benefit District and Employee Programs recommendations.

Background

Demand-based curb parking pricing (DBCPP) is a parking management tool that finds the lowest price where on-street meter rates will maintain approximately a 10-30 percent vacancy rate or one to two available spaces on each block for increased destination access. Deep Ellum's on-street parking is currently not priced before 6:00 PM and only $0.50 per hour after that. Compared to an average price around $17 for a few hours parking in off-street lots, drivers are currently economically incentivized to circle the blocks of Deep Ellum, clogging streets, in search of underpriced on-street parking. DBCPP would increase the on-street parking prices incrementally to manage the high demand.

Data from this study shows at peak times on-street parking in the district is over 90 percent full, compared to off-street parking at 41 percent. Even at its lowest morning weekday time, on-street parking is still 53 percent occupied. This shows a strong demand for on-street parking where the price may not reflect its value. This results in low turnover, where drivers park for long stretches of time on-street. This challenges visitors with short stays, e.g. less than one hour, who have a difficult time finding parking close to businesses. This also incentivizes drivers who slowly cruise district streets and sometimes act irresponsibly in search of the cheapest parking.

Benefits of Demand-Based Curb Parking Pricing

- **More availability:** Higher prices during peak demand periods incentivizes more time-conscious parking use, leading to increased turnover. This benefits Deep Ellum businesses with increased access for quick trips, likely resulting in more customers.

- **Reduces parking search time and congestion:** Demand-based pricing not only increases parking availability but also encourages drivers to park elsewhere or for a shorter duration, which can reduce the time spent circulating to find parking, thereby alleviating congestion in Deep Ellum.

- **Better use of underutilized off-street parking:** Demand-based pricing levels the price disparity between on- and off-street parking. Drivers will be more economically incentivized to park in off-street lots and garages when the curb parking is less extremely underpriced.

- **Promote alternative modes of transportation:** Demand-based pricing often incentivizes people to consider alternative modes of transportation such as ridesharing, walking, biking, public transit, and micro-mobility.

Case Study: The City of Boston – Performance Parking Pilot

In 2017, the City of Boston, MA, implemented a performance parking pilot in the Back Bay to test the impacts of demand-based meter rates on congestion, use of other transportation modes and parking in underutilized on- and off-street parking. Their objectives were to ensure one to two open street spaces per block, decrease illegal double parking and reduce cruising for street parking. After implementation the neighborhood saw a 14 percent decrease in illegal double parking and a 33 percent decrease in illegal loading zones parking. It also increased turnover, decreasing the average parking stay by 14 minutes, achieving the goal of having one to two spaces open per block. The City of Boston also tested pricing adjusted differently block by block but found zone-based price (same rate for multiple streets) was most effective.

https://www.boston.gov/sites/default/files/embed/p/performance_parking_final_report_-_web_1.pdf

Implementation

The City of Dallas' OSPCMP offers a process and guide for implementing demand-based meter rates within an area. The policy document also discusses technology for better parking occupancy data. Identifying a method for efficient counting of on-street occupancy may still need to be refined by the city for this to advance.

A key factor to address with implementation is that underpriced on-street parking is currently heavily used by Deep Ellum service sector employees. Many have no other option than driving to work in the district and are dependent on this parking. Implementation of performance pricing for parking will need to be timed in coordination with plans by the Deep Ellum Foundation to address employee parking needs. *** See implementation Recommendation 4: Employee Programs.

The City of Dallas' OSPCMP recommends using zone-based pricing. This is consistent with best practices. The policy also recommends reviewing occupancy after price adjustments at least once a year.

Responsible Parties and Actions

Case Study	Case Study
City of Dallas	▪ City Council to approve *On-Street Parking and Curb Management Policy*. ▪ City staff need to implement performance pricing to determine method/technology necessary to study occupancy (and other performance metrics in their policy). ▪ Validate on-street occupancy rates in Deep Ellum and determine initial price increase. ▪ Confirm Deep Ellum Foundation coordination on employee issues. ▪ Perform customer outreach to educate the public on the goals, objectives, regulations, and practices of the city's Demand-Based Curb Parking Pricing in Deep Ellum. ▪ Test new meter rates approximately six months to one-year post-implementation (should capture summer peak). ▪ Reevaluate meter rates and performance metrics at least annually.
Deep Ellum Foundation	▪ Assist with public meeting(s) as needed and recommended by the Dallas OSPCMP. ▪ Coordinate with City on employee parking options as needed.

Timing Considerations

- Dallas City Council approval of the Dallas OSPCMP is needed for this strategy to be used. Likely to occur in 2024.

- Deep Ellum Foundation should pursue discussions of employee parking options starting in 2024 as the City Council considers the new policy and City of Dallas staff prepare for implementation. *** See implementation Recommendation 4: Employee Programs.

- City of Dallas staff will need to determine data collection methods before/during piloting implementation. May require new equipment or staffing. This could take a year or more following City Council adoption of on-street policy.

- Engagement and piloting of new rates are likely to also take approximately six months to one year. Parking and transportation impacts may not be seen until months or years following final implementation.

- Assuming implementation of new rates within two years of 2024, an ongoing annual review of on-street occupancy should be conducted to evaluate the program's effectiveness and possible need for rate adjustments.

Recommendation 3 – Parking Benefit Districts

Consider establishing a parking benefit district (PBD) to use increased parking meter revenue to fund public improvements. Create an advisory committee to oversee funds and recommended projects. Consider integrating other parking revenue such as cash-in-lieu funds from development projects. Follow process described in the Dallas OSPCMP.

Parking Benefit District Defined

Parking Benefit Districts are a defined area or district where a portion of the net public parking revenue is reinvested back into the district as public improvement projects. Using demand-responsive, or increased meter rates, is the common method of funding a PBD. They may also include other public parking revenue like permits or lot fees. The typical model nationally is to have a public-private board or committee with neighborhood representatives review parking revenue and recommend public improvement projects. The Dallas OSPCMP includes further information on parking benefit districts.

Why should it be implemented?

The advantage of a Parking Benefit District is that it rewards the community for using pricing to manage parking with public improvement funding. Charging a demand-responsive market rate price for on-street spots ensures there will almost always be an open spot. With a PBD it also contributes to the enhancement of the district by funding items identified in the City of Dallas' OSPCMP such as:

- Sidewalk or bicycle improvements
- Lighting/public safety programs
- Wayfinding/communications efforts
- Tree planting and landscape
- Employee transit passes

Case Study: Midtown, Houston, TX

In 2022, the City of Houston established the Midtown Parking Benefit District to address the increasing on-street parking demand and traffic congestion of the area's growing club, bar, and restaurant scene. Metered parking was extended to include 6:00 PM to midnight on Midtown's most popular streets. Their goal was to reduce excess traffic and promote carpooling and other modes of transportation. The district also implemented a Community Parking Program where residents can purchase annual permits allowing them to park on metered residential streets. To oversee benefit district funds and select improvement projects, the City of Houston, and Midtown Municipal Management District (like a PID) created the Midtown PBD Advisory committee. The Midtown PBD uses both resident permit revenue and 60 percent of meter revenue after 6:00 PM to fund quality of life, walkability, and alternative transportation improvements.

https://www.houstontx.gov/parking/midtown.html

Implementation Process

The City of Dallas' OSPCMP outlines a step-by-step implementation process that serves as a guide for establishing a parking benefit district. It's important to note that under the city policy proposal, local stakeholders, like the Deep Ellum Foundation, must make the request for the establishment of a PBD. This study can be used to help frame that request through the provided case studies and mapped data on parking demand. It's also important to consider that the OSPCMP currently recommends Dallas City Council approve an ordinance establishing each PBD.

Meter Rate Adjustment and Parking Benefit District Revenue

As indicated above, implementing a PBD in Deep Ellum typically means adjusting the meter rates as part of performance pricing. Deep Ellum on-street parking currently ranges from $.10 - $.50 an hour. The city policy proposes gradual increases of no more than $0.50 per period if the district has over 97 percent parking occupancy. Consequently, the revenue generated from the PBD may not accumulate quickly enough to fund large projects until multiple meter rates increase. A rough estimate of PBD revenue is provided below based on the following assumptions:

- There are approximately 454 active on-street parking meters in Deep Ellum. It's assumed this remains constant over time. In this calculation it's assumed there will be at least 85 percent of spaces occupied so 386 will be used to calculate revenue.
- Only five hours are used to capture the maximum price and assumption that not all meters will be occupied all the time or have 100 percent payment rate.
- The city policy suggests a maximum price of $6.00 per hour for on-street meters. The first-year maximum will be $1.00 since the current price is $0.50 per hour.
- The cost to operate the meters per day is $0.88.
- If implemented the PBD would take 60 percent of the net revenue on meters in the district (per the City of Dallas' OSPCMP).
- Meters will operate 354 days of the year (excluding the 11 City of Dallas recognized holidays).

The formula to estimate PBD revenue is as follows:

*([(Number of meters * Rate * 5 Hours) – Operation cost per meter] * 60 percent) *354*

Table 7: Estimated Parking Benefit District Revenue at Various Meter Rates

Number of meters	Meter Rate	hours	Operations Cost Per Meter	% to PBD	Daily PBD Revenue	Annual PBD Revenue
386	$0.50	5	$ 339.68	0.6	$375.19	$132,817.97
386	$1.00	5	$ 339.68	0.6	$954.19	$337,783.97
386	$3.00	5	$ 339.68	0.6	$3,270.19	$1,157,647.97
386	$6.00	5	$ 339.68	0.6	$6,744.19	$2,387,443.97

The numbers in **Table 7** above are only a rough estimate based on variable assumptions. They do, however, illustrate the potential opportunity for public improvement funds along with better

parking management. More analysis will be needed to verify estimates above as the City and DEF evaluate implementation.

Integrate the Cash-in-Lieu Parking Funds from PD 269 into the PBD

The City of Dallas offers a cash-in-lieu program where developers have the option to a pay a fee-in-lieu of providing a portion of the number of parking spaces ordinarily required by the zoning ordinance. Currently there is not a direct process for using collected cash-in-lieu of spaces from Deep Ellum development. It is recommended that cash-in-lieu parking funds from development under PD 269 should be integrated into a PBD as another relevant source of parking revenue. More internal discussion within the City of Dallas is needed to confirm this possible action.

Responsible Parties and Actions

Entity	Action
City of Dallas	▪ Coordinate with Deep Ellum Foundation on establishing the PBD in a reasonable timeframe when adjusting parking meter rates. ▪ Discuss with relevant department assigning cash-in-lieu of spaces from PD 269 into a PBD. ▪ City staff will draft the ordinance to legally establish the PBD.
Deep Ellum Foundation	▪ The Deep Ellum Foundation will need to request the establishment of a Parking Benefit District. ▪ Follow *On-Street Parking and Curb Management Policy* steps to set up PBD including defining area, gathering information, setting up an advisory committee, identify project spending list, and holding community meetings.

Timing Considerations

- The Dallas City Council must adopt the *On-Street Parking and Curb Management Policy* to authorize parking meter changes and the formation of a PBD.
- A criterion to initiate PBD process is the district must generate enough revenue for meaningful programs or improvements once all annual expenses are paid. May need to evaluate timing of request if meters at time of request do not generate enough revenue.
- Following adoption of Dallas' "On-Street Parking and Management Curb Policy", the Deep Ellum Foundation may make a request to establish the PBD.
    - This can happen even before the City increases meter rates.
    - It's recommended DEF and City staff coordinate so the PBD complements the public engagement on changing meter rates for performance pricing.
- Per the City of Dallas' "On-Street Parking and Management Curb Policy" the process to set up a PBD includes the following which may take six to 10 months:
    - Pre-application meeting requirements (one to two months)
    - Submit application (one to two months)
    - Hold community meeting (two to three months)
    - City staff draft ordinance and take to council (two to three months)
- Estimate a PBD could be established by 2025 at the earliest. However, this may want to be timed until meter rates can increase to ensure sufficient revenue to cover expenses.

Recommendation 4 – Employee Programs

Coordinate with public and private stakeholders on options encouraging employees to park in underused off-street spaces. Consider using Parking Benefit District funds to facilitate employee transit passes and other travel demand management options. Follow recommendations in the Dallas *On-Street Parking and Curb Management Policy*.

Background

Deep Ellum's primary business sector is food/beverage and entertainment. As a result, the district has many service employees who work shifts at late hours and weekends. This creates distinct parking and transportation challenges. Employees may not be able to live close by or have schedules that work with DART transit options. As many businesses also do not have onsite parking, employees are often dependent on on-street parking for low-cost parking throughout the day.

As demonstrated by data collected in this study, on-street parking (after 6:00 PM) is on average six times cheaper than paid off-street parking for a four-hour stay. Better management of on-street parking, which will have an impact on street congestion and allow other highly needed curb uses, will likely require Deep Ellum employees to shift their parking from the curb to off-street or use other travel modes.

Private Sector Coordination

During the study, excess parking capacity at The Stack, Epic I, and Epic II garages was identified, with the highest Saturday evening occupancy at any garage being 35 percent. At that occupancy rate, it may be beneficial to fill empty spaces with district employees at a negotiated rate. A group like DEF would need to discuss with garage operators the possibility of offering discounted employee evening parking permits. This approach is how the City of Austin and their Downtown Austin Alliance offer an affordable parking program for service employees. It's an opportunity for the private garages to benefit from guaranteed revenue and employees to benefit with more affordable off-street parking (see Downtown Austin case study next page). The garages in Deep Ellum are also privately owned and the employees work for private businesses. The draft Dallas OSPCMP notes that as of 2022 the Dallas City Council did not support subsidizing employee parking for private businesses. They do, however, recommend district representatives meet with the city on employee parking strategies.

Public Parking Options

NCTCOG has allocated federal funding for the creation of additional public parking under IH 345 on TxDOT right-of-way. As of December 2023, the timeline for this parking implementation is undetermined as an agreement between City of Dallas and TxDOT is pending. It's possible that some of this new parking could be made available to employees at a subsidized rate but this would require City of Dallas approval.

In the City of Dallas' OSPCMP draft, it is also suggested that permits for underutilized street parking may be offered to employees that would allow them to park all day in those spaces. However, based on this study's occupancy data, at the Saturday evening peak there are few if any

unused on-street spaces west of Hall Street and north of Taylor Street (the core area of Deep Ellum). Further study of use throughout the full day and week is needed if on-street permits are desired.

Travel Demand Management Options

Reducing the cost of commuting and parking for employees should also include enhancing other travel options. As proposed in the City of Dallas' OSPCMP, if a PBD is established those funds could be used to provide discounted transit passes to employees. In one management district case study in Short North – Columbus, OH, discounted on-demand transportation funded passes (e.g. bike share, scooter, Lyft) were provided. In two parking management case studies, districts first attempted to provide an employee shuttle to remote lots/garage, but this has since been cancelled. Boulder, CO, still offers a remote garage for employees but it's on a city bus route and is walking distance to the main area. Travel demand management options that reduce single occupant vehicle travel are encouraged in the City of Dallas' OSPCMP, Connect Dallas, and other city plans.

Benefits

Managing employee parking is important to district parking for multiple reasons:

- Encouraging employees to park off-street or use alternative commutes frees up high demand for on-street parking spaces and can reduce vehicle congestion at peak times.
- Creating agreements or programs for dedicated employee parking provides affordable options for service industry workers that can help the district remain competitive in hiring.
- Encouraging employees to use other modes of transportation rather than driving alone can help the city achieve reduced congestion and improved air quality goals.
- Private sector lots/garages can also benefit from a more secure revenue stream if agreements for employee parking are established.

Case Study: Downtown Austin Affordable Parking Program

As mentioned in the City of Dallas' *On-Street Parking and Curb Management Policy*, the City of Austin, TX, has partnered with their Downtown Austin Alliance to encourage service/ entertainment industry employees to park in off-street garages. Currently over 20 garages owned and managed by a variety of operators participate in offering employee passes for $35 to $75 per month. Private garages are not subsidized by public funds and set their own rate and agreement forms. The City of Austin does offer two downtown garages it owns as part of this program and facilitates the website listing the participating garages. The program has been described as a win-win for employees with more access to affordable parking and operators of private garages which are generating more revenue in previously low use times.
https://www.austintexas.gov/page/affordable-parking-program

Responsible Parties and Actions

Entity	Action
City of Dallas	▪ Engage with district stakeholders and Deep Ellum Foundation to discuss employee options before increasing on-street parking meter prices. ▪ Evaluate possibility of dedicating future Parking Benefit District revenue under meter price increase scenario to employee TDM actions and incentives. ▪ When agreements on parking under IH 345 are settled, explore option of dedicating a portion of the parking to district employees.
Deep Ellum Foundation	▪ Coordinate with private garage operators to discuss options for facilitating service employee parking. o Include impacted businesses on employee parking needs and encourage their participation. o Consider facilitating a web page for employees to sign up at private garages. ▪ Coordinate with City of Dallas on employee permits and TDM options when *On-Street Parking and Curb Management Policy* is adopted.
Private Garage Operators	▪ Review occupancy data and options for affordable employee parking. ▪ Coordinate with Deep Ellum Foundation as needed.

Timing Considerations

- Deep Ellum Foundation may want to begin discussions with operators of The Stack and Epic garages as soon as possible, in advance of the City of Dallas' *On-Street Parking and Curb Management Policy* implementation.

- Changes to on-street parking prices would follow adoption of the City of Dallas' *On-Street Parking and Curb Management Policy*. Estimated there would be at least one year of public engagement on this change with additional identification of implementation methods. Full on-street change likely after 2025.

- The timing of parking under IH 345 implementation is unknown. Assume at this point it will be at least two years away from 2024.

Recommendation 5 – Signage and Markings Update

Develop clear signage and markings for on-street parking following the process outlined in City of Dallas' draft *On-Street Parking and Curb Management Policy*. This includes three key strategies to improve and manage curb use:

Delineating Parking Meter Stalls

As mentioned in the Signage, Wayfinding, and Communication Existing Conditions, Deep Ellum lacks pavement marking on some streets while others require updated paint to delineate metered parking stalls. This often leads to double parking and difficult enforcement of rules. This may not be possible on roadways like Canton Street and Malcom X Boulevard where the parking lane is also a travel lane at certain times of the day.

Painting Curbs

Vertical signage alone may not be effective at managing the curb space. Painting the curbs allows for clearer communication with the driver on specific on-street parking rules as a supplement to or replacement for on-street signposts. As in the City of Dallas' draft OSPCMP, the curb colors shown in **Table 8** are recommended.

Table 8: Curb Colors Recommended in Daft Dallas City Policy

Red	No Color	Yellow	Blue
No Parking Any Time	Parking Allowed	Loading Only	Accessible Parking

Updating Signage

It's been noted in Deep Ellum some signs are confusing, especially some restricting parking use on certain sections of the curb. The City's draft OSPCMP focuses on making signage for curb uses that is consistent across the City of Dallas and is easy to see and comprehend. Especially for "no parking" areas it recommends using symbols rather than words to replace "No Parking" signs for improved clarity.

Benefits

Updating signs and markings in Deep Ellum will help address the current confusion that drivers may have about where and when it is legal to park due to unclear signage. **Figure 14**[9] is an example of a clearly marked space on a Fort Worth street. This can help drivers get to spaces faster and avoid clogging streets. Drivers will also spend less time trying to determine the legality of parking on highly desired street spaces.

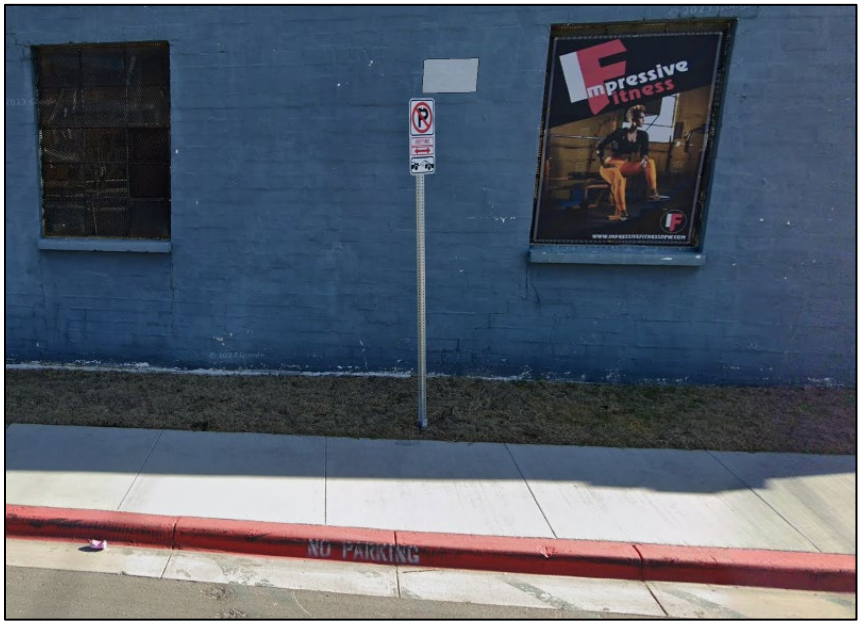
It will also assist the city with enforcement and can enhance intersection safety with clearer setbacks, so drivers have better visibility of pedestrians. Lastly, improved markings and signs can reduce the potential conflicts between other curb uses and other modes of transportation.

[9] *Google Street View*

Signage and Markings Update Implementation

The City of Dallas' *On-Street Parking and Curb Management Policy* outlines a comprehensive action item list that serves as a guide that is needed to realize the update and installation of new signs and markings in Deep Ellum.

Figure 14: Signs Combined with Curb Paint Clearly Mark "No Parking" Zones in Fort Worth



Responsible Parties and Actions

Entity	Action
City of Dallas	▪ Amend and/or update any city codes and ordinances that will be required to allow any update or addition of signs or markings in Deep Ellum. ▪ Establish updated citywide standards for street marking and signs. ▪ Develop a phasing plan for implementation of new signs and markings in Deep Ellum. ▪ Ongoing evaluation where signs and markings need to be replaced and/or updated.

Timing Considerations

- The City of Dallas can proceed with delineating a metered parking stall assuming funding is available (based on City of Dallas' OSPCMP draft document). Updating faded markings on Elm and Main Streets may be a priority location to start.

- Changes to Commerce Street with a complete redesign will likely totally address needs on that street. The project will likely proceed to construction in two to three years of 2024.

- Painting curbs and updating signs requires the City of Dallas' OSPCMP to be passed by the City Council.

- Additional time may be needed for City staff to further refine standards for non-metered parking areas and clearer "No Parking" signage citywide.

Recommendation 6 – Wayfinding and Communication

Update websites and continue awareness campaigns on parking with a focus on improving awareness of large garage facilities. Partner with private parking facilities to develop integrated wayfinding signage. Consider developing a Deep Ellum parking "brand" for consistent signage and wayfinding.

Background

Directional signage and visual cues are important to getting drivers into parking spaces and off the street. Information provided digitally or as signage is also important to communicate parking locations and availability. Stakeholders and survey comments indicated signage for private lots are often not clear with quick observation. It was also observed during data collection that many private lots do not post prices.

The largest parking facilities in the district, The Stack and Epic I and II garages offer over 1,000 parking spaces combined but had some of the lowest occupancy during the study data collection period. While they are more expensive than the average lot, they are not the most expensive, and even had lower use than the more expensive lots. This could be due to lack of communication and awareness of the garages, or a general preference North Texans have for conveniently located surface parking.

Better Wayfinding and Communication Strategies

Communications Platforms: Online maps and mobile applications offer the option of making drivers aware of parking options. These already exist in various forms for Deep Ellum but may not be widely used by patrons. The best practices in digital communication would have parking maps showing parking locations, total parking spaces, list payment platforms, parking cost, valet locations, etc.

If possible, integrate real-time parking availability for key facilities. Numerous third-party applications offer this at various levels. Private websites and services may also be paying search engines like Google to have their result optimized for the public to find. Currently the ParkMobile app used for payment is the most visible public application connected to City of Dallas parking management.

Complementing updated communication platforms with marketing and social media campaigns can improve their use and public effectiveness. Public websites may also need to focus on increasing search engine optimization to compete with private sites. This is also an opportunity to connect and guide patrons to use other transportation options like bikes, scooters, and DART.

Trailblazer Signage: Wayfinding trailblazer or breadcrumb signage guide users to key locations, like large parking facilities. This could be placed at key district entryway intersections guiding drivers to highest capacity parking locations such as The Stack or Epic garages. Note that public right-of-way may not be available if the signage is for private parking.

Consistent Parking Signage: Creating consistent parking identification, informational, regulatory, and directional signs for all lots, public and private, can reduce navigation difficulties. Signage

could incorporate uniform lettering size, internationally recognized symbols like "P", clear pricing visibility, standardized setbacks, and a cohesive design approach. This could follow a concept proposed by the City of Alexandria, VA. This should be closely coordinated with private operators to integrate with their branding.

Dynamic Parking Signage: Private garages could use dynamic parking signage equipped with sensors and communication technology for real-time parking availability. Dynamic signage would display occupancy information through loop detector/parking counter systems. This information could be integrated with mobile apps or websites, allowing users to check availability before arriving in the district. This may be most useful in attracting drivers to large garages. There are numerous technical challenges to achieve this at the district level that may require incentive funding. See "Wayfinding, Signage, and Communication" in the best practices research section of this study.

Benefits

The results of combined communication platforms and improved private signage can include:

- Reduce visual clutter, enhanced navigation, and easier experience for the driver searching for parking.
- Improve use of underused lots and garages with increased awareness.
- Reduce congestion by getting drivers off the road and into parking spaces sooner.
- Encourage other modes of transportation and reduce congestion with information on websites, apps, and through education campaigns.

Case Study: City of Alexandria, VA – Consistent Signage Branding

As discussed in this study's best practice research section, the City of Alexandria, VA, developed its Wayfinding System Design Guidelines Manual in 2010. This initiative aimed to create a comprehensive sign system to reduce visual clutter, ensuring consistency in signage, and aligning with American's with Disabilities Act guidelines. The guidelines resulted from collaboration among various city departments and community outreach efforts. The city's Department of Transportation and Environmental Services (TES) leads the implementation efforts with input, while maintenance falls under the TES's scope. While designs for private facilities are provided in the manual, it is the responsibility of the facility owners to supply power for lighting and install signage. The Alexandria guide creates a balance between developing a unified appearance of wayfinding signage across all facilities while respecting the brand identity of private entities. https://www.alexandriava.gov/Wayfinding

Responsible Parties and Actions

Entity	Action
City of Dallas	▪ Evaluate options for increasing parking availability information in the ParkMobile app. ▪ Coordinate with Deep Ellum Foundation on the possibility of implementing a district-level consistent parking signage brand, especially if sign regulation updates are needed. See the City of Alexandria example in the Wayfinding, Signage, and Communication Best Practices. ▪ As new parking facilities such as lots under IH 345 are added, explore usage of dynamic parking availability signage.
Deep Ellum Foundation	▪ Update the Deep Ellum *Explore the Map* (or create a new application) to show total number of parking spaces and location of entrance to key locations. Prioritize promoting facilities with over 300 spaces. Add cost and rules such as time limits. Plan regular quarterly updates on website through outreach to private operators to ensure any updates to parking facilities. ▪ Continue offering alternative transportation information on https://www.deepellumtexas.com/map-transport/ and add transit station locations to the map. Add key bike connections to the map. ▪ Continue educational campaigns through social media on parking maps and share alternative transportation maps and guides. ▪ Consider search engine optimization for parking/transportation website to ensure patrons find accurate information. ▪ Evaluate coordination with private operators on the possibility of implementing a district-level consistent parking signage brand. Prioritize wayfinding to large parking garages that are currently underutilized.
Private Operators	▪ Collaborate with Deep Ellum Foundation for data sharing in updating a district parking map. ▪ Explore usage of dynamic parking signage with real-time parking availability in front of parking facilities.
NCTCOG	▪ Sharing parking count data from parking counts to the Deep Ellum Foundation collected during Deep Ellum District Parking Study counts that can be used to update a digital parking map with information.

Timing Considerations

- Improvements to the Deep Ellum Foundation parking and transportation web page can begin immediately without City of Dallas policy changes.
- If a Parking Benefit District can be established following the adoption of the Dallas *On-Street Parking and Curb Management Policy*, the Deep Ellum Foundation should explore which public signage options may be implemented with PBD funding.
- The timing of parking under IH 345 implementation is unknown. Assume at this point it will be at least two years away from 2024.

Recommendation 7 – Alternative Transportation

Continue promoting rideshare, walking, biking, public transit, and micro-mobility as alternatives to driving and parking in Deep Ellum. Coordinate advancement of alternative transportation with curb management and prioritization (see Recommendation 8: Curb Management and Prioritization).

Alternative Transportation Options

Many transportations option for the district are available but may require coordination citywide and beyond. Some strategies that may already be in progress or new to the district include:

Park and Ride Circulator Shuttle: A shuttle service connecting remote parking and DART stations to key district destinations to circulate in the district, targeting peak demand hours such as weekend evenings.

Employee Travel Demand Management passes: As illustrated in the employee programs recommendation, funds could be used for DART passes or transportation vouchers to motivate a shift in commuting modes among Deep Ellum employees.

Bicycle/pedestrian connectivity and facilities in the district: Connected and improved active transportation infrastructure, with well-lit pathways and facilities to support pedestrians, cyclists, and scooter users across the district, to transit stations, and to other parts of the city can help reduce parking demand.

Communicating alternative mobility options: Marketing campaigns promoting alternative modes of transportation including transit services, walking, cycling, and carpooling to the district can increase their use. See also Recommendation 6: Wayfinding and Communication.

Benefits

- Reduces demand for parking.
- Reduced traffic congestion on area district streets.
- Can offer more affordable travel options.
- May be cheaper than subsidizing or constructing additional parking spaces.
- Alternative transportation can be healthier for individuals and improve area air quality.

Case Study: Short North C-pass Program

Funded by the Short North Parking Benefit District, the Central Ohio Transit Authority extends a valuable perk to Short North Arts District residents and workers: unlimited, free rides on fixed-route bus services. Initially introduced as a pilot initiative from May to October of 2022, the program gained significant success with 640 participants completing over 15,000 transit rides.[10] Following the achievement of the pilot project, the program relaunched in May of 2023. This program not only offers flexible and affordable transportation options for employees and residents but also empowers users to reduce their carbon footprint by decreasing single occupancy vehicle trips in the district.[11]
https://shortnorth.org/shortnorthparking/

Responsible Parties and Actions

Entity	Action
City of Dallas	▪ Continue advancing and planning for bicycle connectivity and facilities in the district through planning efforts such as the Dallas Bike Plan. ▪ Continue coordinating the implementation of alternative mode improvements. ▪ Continue regular lighting assessments with the City of Dallas' Office of Integrated Public Safety Solutions and Department of Transportation in coordination with the Deep Ellum Foundation. ▪ Identify areas in need of pedestrian improvements for safe connection to remote lots (such as IH 345 funded lots D and E) and connections to transit stations. ▪ Study the feasibility and interest in establishing remote parking/transit circulator shuttle service in partnership with the Deep Ellum Foundation and DART.
Deep Ellum Foundation	▪ Continue coordinating with City of Dallas on plans for increased bicycle facilities connecting Deep Ellum to other parts of the city. ▪ Continue regular lighting assessments with the City of Dallas' Office of Integrated Public Safety Solutions and Department of Transportation and working to identify lighting needs and pedestrian improvements.

[10] *Carey, L. (2023, June 16). Short North C-pass program brings back free COTA rides for locals in 2023. The Columbus Dispatch. https://www.dispatch.com/story/business/transportation/2023/06/16/short-north-c-pass-program-brings-free-cota-rides-for-locals-in-2023/70327314007/*
[11] *Short North Alliance Employee Mobility Benefits Program. (2023). Short North Arts District. https://shortnorth.org/wp-content/uploads/2023/05/2023-Employee-Mobility-Menu_5.4.pdf*

	▪ Coordinate with City of Dallas and DART on a feasibility and interest study of parking/transit circulator shuttle service.
DART	• Coordinate with City of Dallas and DEF on a feasibility and interest study of parking/transit circulator shuttle service.
NCTCOG	• Continue planning with City of Dallas and DEF for increased bike connectivity to the district. • Continue working with the City of Dallas, DEF, and DART to implement federally funded multi-modal improvements in the district.

Timing Considerations

- Study and planning for improved bike facilities are in progress. Possible recommendations on a major connected bicycle facility through the district and nearby neighborhoods could be available by late 2024 or early 2025.
- Improvements to the lighting and sidewalk facilities are funded and should be in progress soon using federal funds. Approval of the City of Dallas' 2024 bond proposal in May or November of 2024 by voters will also refine the list of infrastructure items in Deep Ellum still needing funding.
- If items can be funded by a Parking Benefit District, funding may not be available until after 2025 or 2026 (see recommendations for a PBD).
- The study of feasibility for a circulator shuttle service can begin immediately but may be most relevant once an agreement for parking lots D and E under IH 345 is reached between City of Dallas and TxDOT Dallas District. There is no firm timeline for when this may happen.

Recommendation 8 – Curb Management and Prioritization

Initiate discussions to reprioritize the use of curb spaces from vehicle storage to higher priorities such as mobility and access based on City of Dallas plans. Follow the framework for curb prioritization laid out in the City of Dallas' *On-Street Parking and Curb Management Policy*. Consider doing a loading and delivery study for advancing improved curb access for businesses.

Curb Management Significance

Deep Ellum needs continued tools and options for supporting travel by other modes. This may take the form of safer places for transit, scooters, or bikes. This may mean more curb spaces for quick delivery vehicles or rideshare. Each of these would benefit from dedicated space at the curb currently occupied by parking. Storage of vehicles is the dominant use of the curb in Deep Ellum today, but mobility and access may provide the most opportunity to address transportation challenges. The City of Dallas' *On-Street Parking and Curb Management Policy* proposes curb prioritization as a key part of determining if parking should be the primary use of a street and transition to other uses.

Benefits

Using a curb management process can lead to improved use of street right-of-way which can have the following benefits:

- Lower demand for parking through increased convenience and comfort of other modes (transit, bikes, scooters) that have more dedicated street spaces.
- More access to local businesses with increased spaces for delivery and pick ups/drop offs.
- Less traffic congestion from drivers cruising for parking on streets that re-prioritize curb parking to other uses.
- Improved safety with managed intersection and mitigating conflict zones with vehicles and other road users.

Implementation

The City of Dallas' "On-Street Parking and Management Curb Policy" outlines a high-level framework guiding curb prioritization. Per the draft policy, an initial step in determining curb prioritization should also first look at adopted city plans and priorities related to street right-of-way. This may include but is not limited to plans such as:

- Vision Zero Action Plan (2022)
- Connect Dallas Strategic Mobility Plan (2021)
- Complete Streets Design Manual (2016)
- Thoroughfare Plan (1993)
- Dallas Bike Plan (update in progress as of 2023)
- Dallas Street Design Manual (2021)

These plans guide mobility network decisions which should factor into the conversation of transition curb space away from storage to mobility. Implementing these plans may also be a

catalyst for change. For example, conversations about safer bikeways connecting Deep Ellum are currently progressing and may necessitate a change in curb use.

In addition to using curb space for mobility, access and loading are increasingly important. Deep Ellum has historically been an entertainment and food/beverage destination. Delivery and loading needs continue to be important. However, following the COVID-19 pandemic, e-commerce has greatly increased the number of vehicles needing short stays at the curb for pick up and drop off. Without such space, these drivers may stop in the street or wherever they can find space.

This parking study did not take a close look at the needs and behaviors related to loading and delivery in Deep Ellum, but it has been indicated as a growing concern by stakeholders. It was beyond the scope of this study to make the longitudinal observations of vehicles engaged in loading in Deep Ellum. It's recommended that the City of Dallas and Deep Ellum Foundation consider supporting such a study.

Responsible Parties and Actions

Entity	Action Item
City of Dallas	▪ Review existing plans to identify city mobility priorities on Deep Ellum streets. ▪ Consider funding a loading and delivery study for Deep Ellum that would inventory the curb and its uses for areas of Deep Ellum in this Study. ▪ Pass the *On-Street Parking and Curb Management Policy* to establish curb management priorities and refine as needed. ▪ Coordinate with the Deep Ellum Foundation to host workshops and meetings regarding updates or changes coming to any curbs in Deep Ellum.
Deep Ellum Foundation	▪ Involve stakeholders in gathering feedback on their preferences for alterations to curb utilization, especially to support enhanced mobility. ▪ Coordinate with the City of Dallas to host workshops and meetings regarding updates or changes coming to any curbs in Deep Ellum.

Timing Considerations:

- Review of city plans with mobility recommendations can begin immediately and is ongoing regarding bicycling options.
- Passing the City of Dallas' *On-Street Parking and Curb Management Policy* will officially establish mobility and safety as priorities. May need this policy to support further engagement on curb changes. This is also needed to establish curb painting standards which can play an important role in implementing curb management.
- Loading and delivery study recommended within one to two years.
- Changes to curbs requiring significant reconstruction will take additional funding plus engineering design (e.g. City bond funds, annual city capital budget funds, federal funds) which may take one to four years at a minimum to implement.

Recommendation Summary Table

Recommendation	Responsibility	Key Action Summary	Timing
Adopt the OSPCMP	City of Dallas	Pass *On-Street Parking and Curb Management Policy*.	~2024
Demand-Based Curb Parking Pricing	City of Dallas	Leads meter pricing implementation.	After OSPCMP adoption
	Deep Ellum Foundation	Coordinates with City on Dallas OSPCMP required public meeting(s) and employee parking.	
Parking Benefit District	City of Dallas	Coordinates with meter price changes. Evaluates use of cash-in-lieu. Formally adopts with ordinance.	After OSPCMP adoption
	Deep Ellum Foundation	Leads with request to initiate and create advisory committee.	
Employee Programs	Deep Ellum Foundation	Leads in coordination with private garages and businesses. Leverage TDM option if benefit district available.	2024
	Private Garage Operators	Coordinate with DEF on use of surplus spaces, especially large garages.	
	City of Dallas	Coordinate with DEF before increasing meter prices. Evaluate use of benefit district revenue for TDM. Confirm agreement on IH 345 parking.	
Signage and Markings Update	City of Dallas	Update meter striping where needed, update vertical signs, paint curbs as needed.	After OSPCMP adoption
Wayfinding and Communication	Deep Ellum Foundation	Update website maps and info with more detail. Continue education campaigns. Evaluate possible unified signage.	2024 - 2026
	City of Dallas	Evaluate option of more information in ParkMobile application.	
	Private Operators	Coordinate with DEF on regular information sharing. Explore addition of dynamic signage.	
	NCTCOG	Share study data as needed for better maps.	
Alternative Transportation	City of Dallas	Lead in continued planning and funding of multi-modal options.	Ongoing
	Deep Ellum Foundation	Continue coordination with the City on planning and implementation.	
	DART	Coordinate with DEF and the City as needed.	
	NCTCOG	Continue coordination with the City on transportation projects.	
Curb Prioritization	City of Dallas	Lead with review of plans and identify priority streets. Evaluate conducting a loading and delivery study.	Ongoing
	Deep Ellum Foundation	Coordinate with City on priorities and stakeholder engagement.	

Implementation Scenarios

The recommendations of this study have some flexibility in how they may be implemented both throughout time and by different entities. The City of Dallas and the Deep Ellum Foundation are the primary interested parties who have a role in parking management. This section will explore a few different paths forward that present better parking management options in Deep Ellum.

Conditions assumed in all scenarios:

- The City of Dallas updates striping for metered parking spaces where applicable (such as Main and Elm Streets).
- DEF and City of Dallas continue to identify projects and opportunities to support alternative modes to single occupancy driving.
- DEF updates digital content on parking on their website and discusses unified signage opportunities with private lot/garage owners and operators.
- Plans and priorities for curb/on-street parking reprioritization conversations continue for streets in Deep Ellum.

Scenarios

1. Demand-Based Curb Pricing

This scenario assumes that Dallas City Council adopts the *On-Street Parking and Curb Management Policy* authorizing city staff to update parking meter prices. City staff proceed with an approximately year long process of implementing performance pricing for meter spaces. No additional parking is added under IH 345 in the first two years.

In this case DEF and the City would want to coordinate on setting up a Parking Benefit District to direct future revenues as soon as possible.

DEF would also begin coordinating with garage operators as soon as possible to secure affordable employee parking. They could also discuss on-street permits for employees. Transit passes and TDM options funded by the PBD should also be discussed with the City of Dallas.

City staff would begin evaluating signage and curb painting updates.

City staff monitor parking occupancy and coordinate with curb prioritization for other mobility and access needs.

2. Deep Ellum Foundation without a PBD

This scenario assumes that City of Dallas staff do not proceed with updating meter pricing and the *On-Street Parking and Curb Management Policy* was not adopted. No additional parking is added under IH 345 in the first two years. DEF would assume the role of parking management under its existing resources for the district.

DEF would begin coordinating with garage operators as soon as possible to secure affordable employee parking.

The foundation could place added emphasis on digital content communicating parking options and supporting unified signage options with private operators.

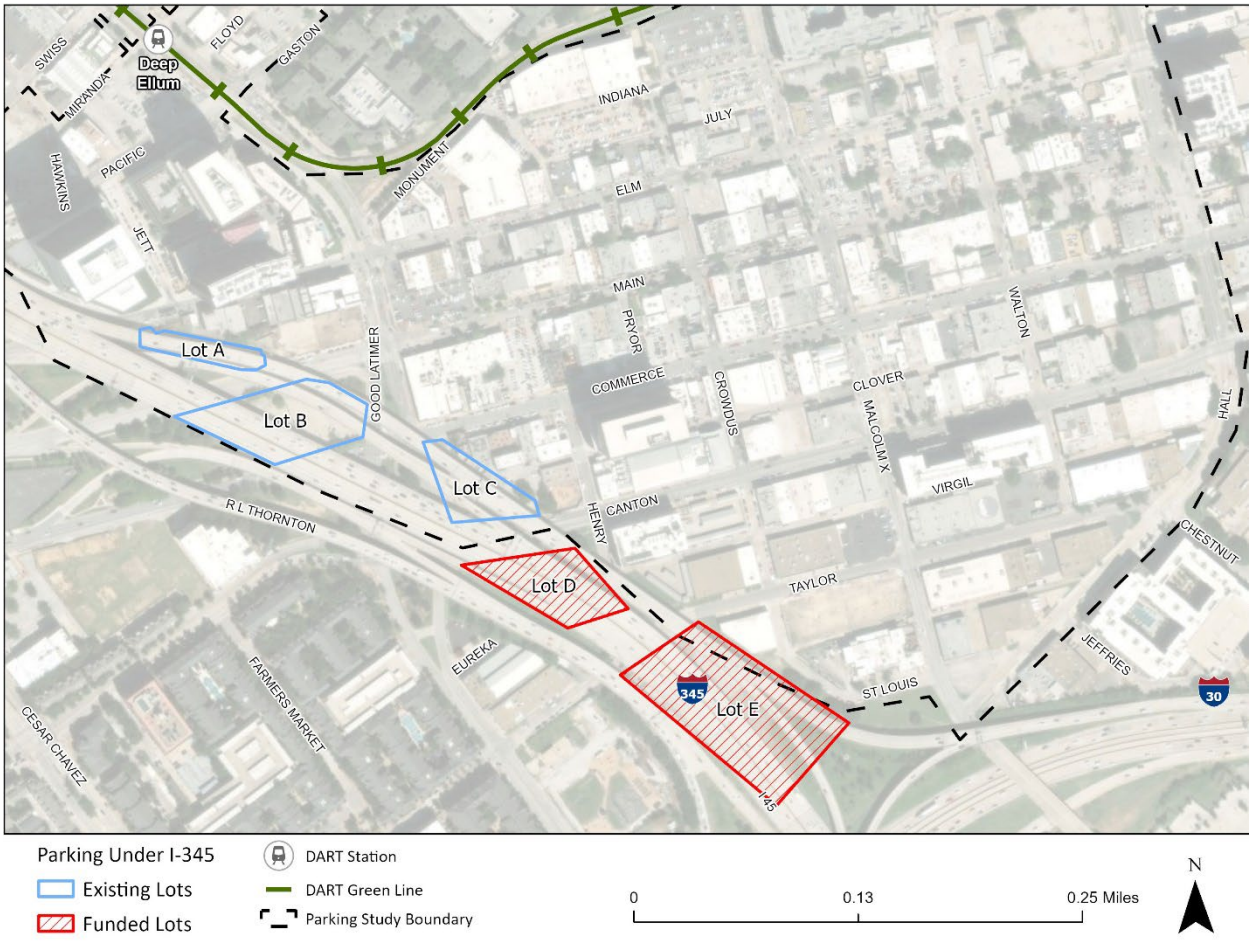
3. Parking Under IH 345 Proceeds

NCTCOG has funded the construction of approximately 600 spaces on TxDOT right-of-way under IH 345 south of Canton Street in what would be future lots D and E (**Figure 15**). These spaces are subject to a use agreement between the City of Dallas and TxDOT's Dallas district office. While NCTCOG's funding was approved in 2021, the City of Dallas and TxDOT have not yet reached a use agreement as it is connected to a proposal for a unified agreement for all TxDOT right-of-way in Dallas underneath an elevated roadway.

Assuming an agreement is reached in 2024, this would open a significant supply of publicly managed parking spaces. This could happen in conjunction with either Scenario 1 or 2. In either scenario:

- The City of Dallas and DEF could coordinate on an affordable employee permit program for the new lots under IH 345.
- Being that the new lots under IH 345 would still be further away than the Stack and Epic I and II garages, the City and DEF should look at improving pedestrian connections and micro-mobility options from the lots to areas like Main and Elm Streets.

Figure 15: Existing and Funded Parking Lots in TxDOT Right-of-Way under IH 345



Conclusion

Scenario 1 (demand-based curb pricing) combined with Scenario 3 (a parking benefit district with lots under IH 345) provides the most resources for managing parking in the district to advance multi-modal transportation. However, Scenario 1 requires City Council approval of the draft policy and requires the most negotiation and engagement. In Scenario 2 with the Deep Ellum Foundation as the lead of parking management, fewer tools are at their disposal. The primary capacity would be enhanced communication efforts and bringing private owners/operators along with them in efforts to facilitate better use of existing parking.

Deep Ellum should continue to be a successful walkable neighborhood with multiple transportation options. While the current parking situation is challenging, there are more than enough parking spaces in the core of the district. Strategic price setting, coordinating among owners, and improved public information are all relatively low cost compared to construction of new parking facilities. The City of Dallas and the Deep Ellum Foundation working together with the other stakeholders using the recommendations here can achieve better parking management for the district.

Appendix A: Deep Ellum Parking Study Survey Results

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENT

Section 1: About you

Select all that apply to you*:

Table 1-1: Total Counts as selected by Respondents.

Deep Ellum Engagement	Count
Work in Deep Ellum	55
Live in Deep Ellum	39
Visit Deep Ellum Often	64
Visit Deep Ellum Sometimes	33

Table 1-2: Responses sorted to show target Groups

Deep Ellum Engagement	Count
Live in Deep Ellum (may also visit, non-employee)	25
Live and Work in Deep Ellum	14
Work in Deep Ellum (may also visit, non-resident)	41
Visit Deep Ellum often (non-resident, non-employee)	42
Visit Deep Ellum Sometimes (non-Resident, non-Employee)	30
Total:	152

**Respondents could choose multiple categories; counts will sum beyond total responses. For this question additional analysis was done to identify exclusive categories for those who visit but do not live or work in the district and vice versa. Further analysis of responses was done to determine the mutually exclusive category of who lives and works in the district even if they also responded with "visit often" or "visit sometimes."*

Section 2: Travel Days/Times

When do you typically travel to places in Deep Ellum? (choose all that apply*).

Figure 2-1: Visitor Travel Days/Times

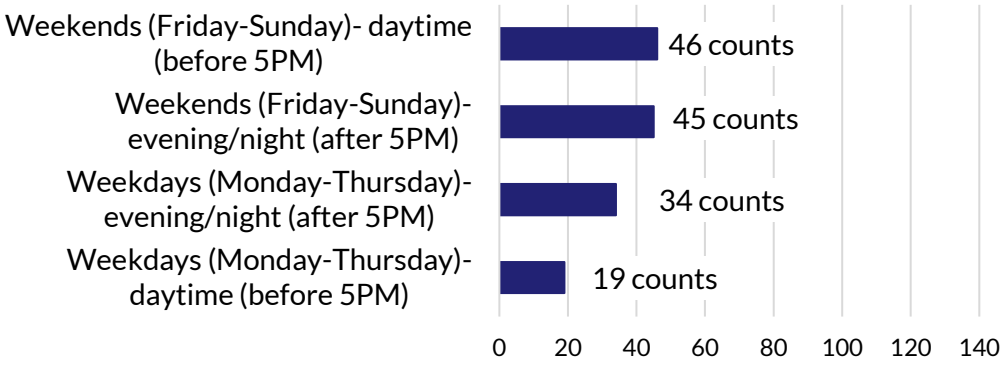


Table 2-1: Breakdown of Travel Days/Times Profile Breakdown

Profile	Percentage of each Profile and Total Counts							
	Weekdays daytime		Weekdays evening/night		Weekends daytime		Weekends evening/Night	
Live in Deep Ellum	30	77%	28	72%	32	82%	27	69%
Work in Deep Ellum	48	87%	32	58%	40	73%	31	56%
Frequent Visitor (Non-Resident, Non-Employee)	11	37%	27	90%	30	100%	25	83%
Occasional Visitor (Non-Resident, Non-Employee)	8	19%	7	17%	16	38%	20	48%
Visitor (Combined)	19	26%	34	47%	46	64%	45	63%

**Total percentages of responses do not sum to 100 percent due to respondents having the option to select multiple choices that best corresponded to their travel days and times.*

Section 3: How do you typically travel to places in Deep Elum?

Figure 3-1: Mode of Travel Frequency

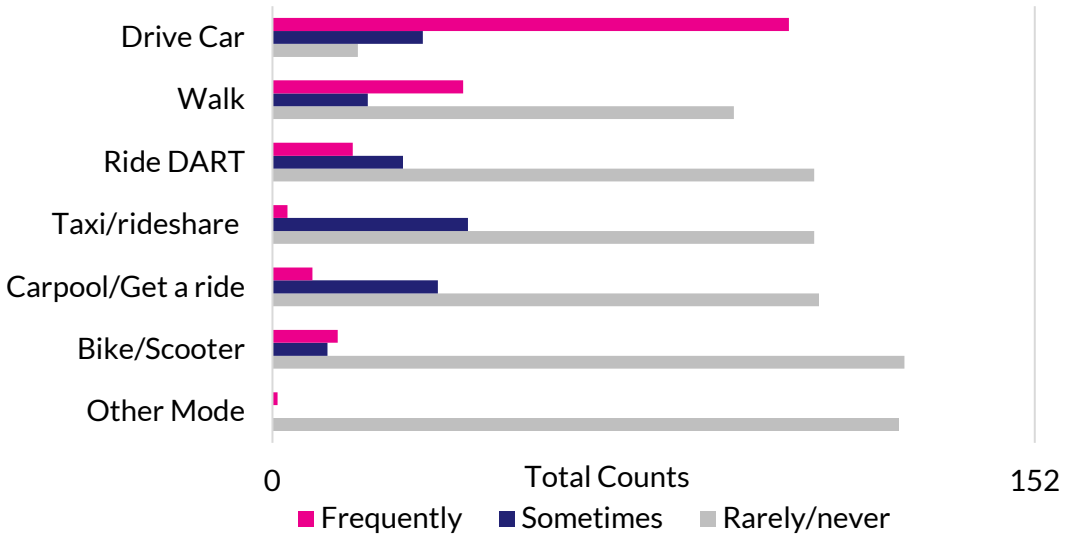


Figure 3-2: Mode of Travel (Sometimes and Frequently Combined)

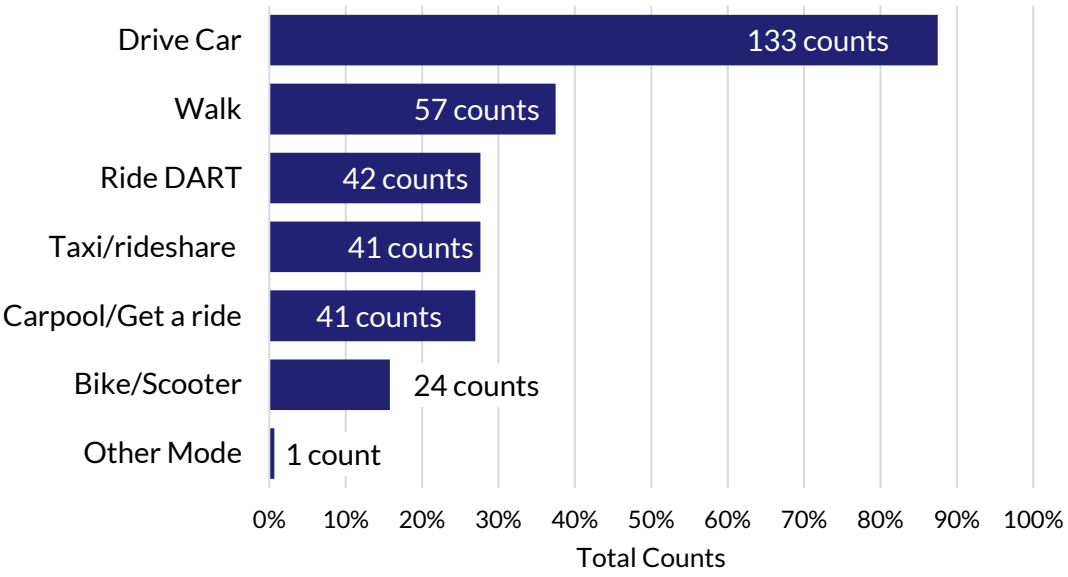


Table 3-1: Frequency of Travel Mode Use

Mode of Travel	Rarely/never	Sometimes	Frequently	Sometimes and Frequently
Drive	17	30	103	88%
Walk	92	19	38	38%
Taxi/Rideshare	108	39	3	28%
Ride DART	108	26	16	28%
Carpool/Get a ride	109	33	8	27%
Bike/Scooter	126	11	13	16%
Other Mode	125	0	1	1%

Table 3-2: Breakdown of Travel Modes among Profiles

Profile	Percentage of each Profile and "Sometimes" and "Frequently" Counts Combined													
	Taxi/ rideshare		Drive Car		Carpool/ get a ride		Walk		Bike/ Scooter		Ride DART		Other Mode	
Live in Deep Ellum	33%	13	72%	28	28%	11	90%	35	26%	10	38%	15	0%	0
Work in Deep Ellum	22%	12	87%	48	20%	11	35%	19	18%	10	25%	14	0%	0
Visitor sometimes (non-resident, non-employee)	30%	9	90%	27	23%	7	7%	2	3%	1	23%	7	3%	1
Visitor often (non-resident, non-employee).	36%	15	93%	39	38%	16	29%	12	17%	7	31%	13	0%	0
Visitor Combined (non-resident, non-employee)	33%	24	92%	66	32%	23	19%	14	11%	8	28%	20	1%	1

**Total percentage of responses do not sum to 100% due to respondents having the option to select multiple travel modes.*

Section 4: How do you park when you drive to Deep Ellum?

If you go to more than one place in Deep Ellum (e.g. from a restaurant to a bar) do you move your car and re-park?

Figure 4-1: Re-Parking Behavior

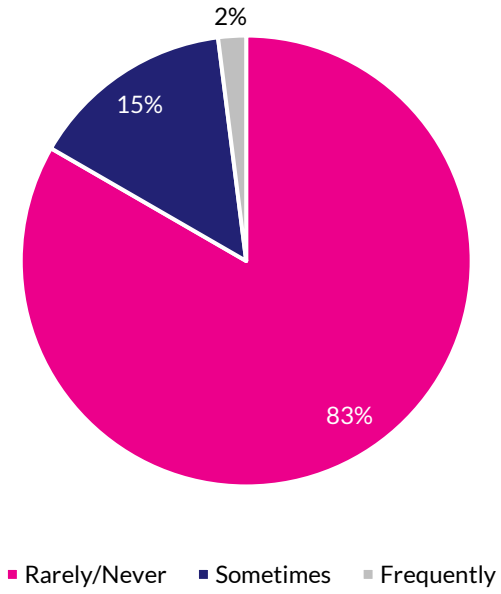


Table 4-1: Re-Parking Behavior

Frequency	Total Count	Percentage
Rarely/Never	125	83%
Sometimes	22	15%
Frequently	3	2%

Section 5: What type of parking do you typically use?

Figure 5-1: Type of Parking

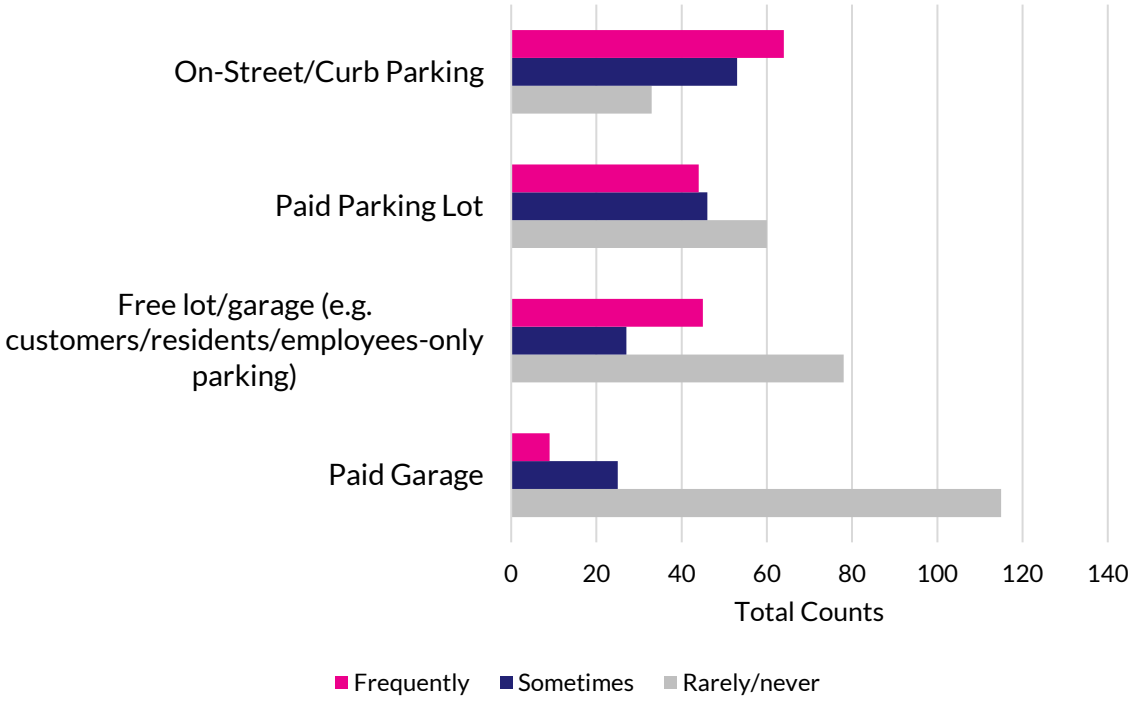


Figure 5-2: Most-used Parking Type

(Sometimes and Frequently Combined)

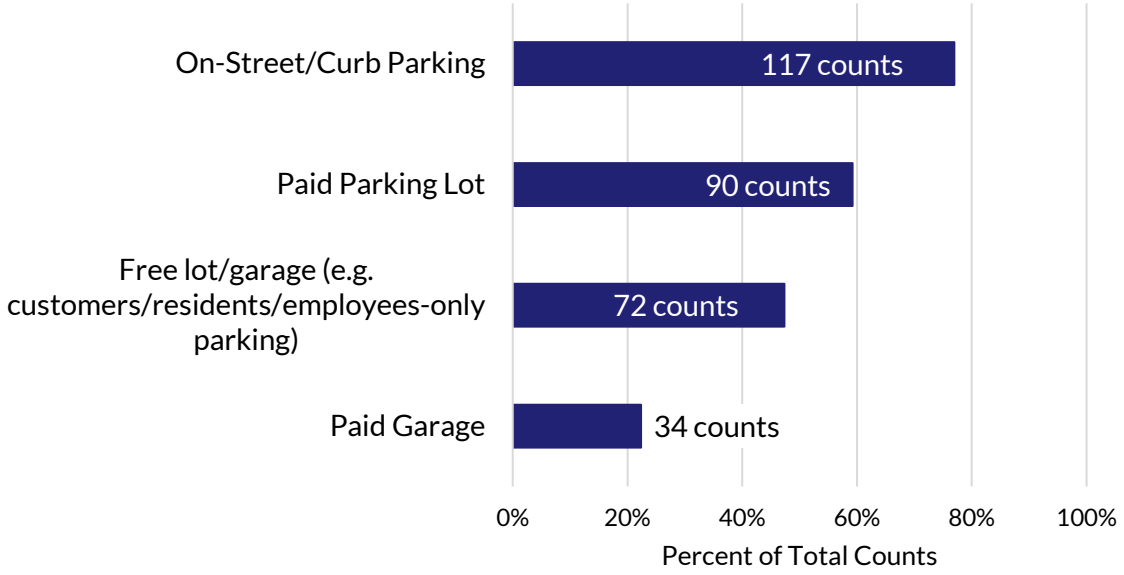


Table 5-1: Type of Parking

Type of Parking	Rarely/never	Sometimes	Frequently	Sometimes and Frequently Combined	
On-Street/Curb Parking	33	53	64	117	77%
Paid Parking Lot	60	46	44	90	59%
Free lot/garage (e.g. customers/residents/employees-only parking)	78	27	45	72	47%
Paid Garage	115	25	9	34	22%

**Total percentage of responses do not sum to 100 percent due to respondents having the option to select multiple types of parking.*

Section 6: How frequently do you use these methods when searching for parking in Deep Ellum?

Figure 6-1: Parking Methods

(Sometimes and Frequently Combined

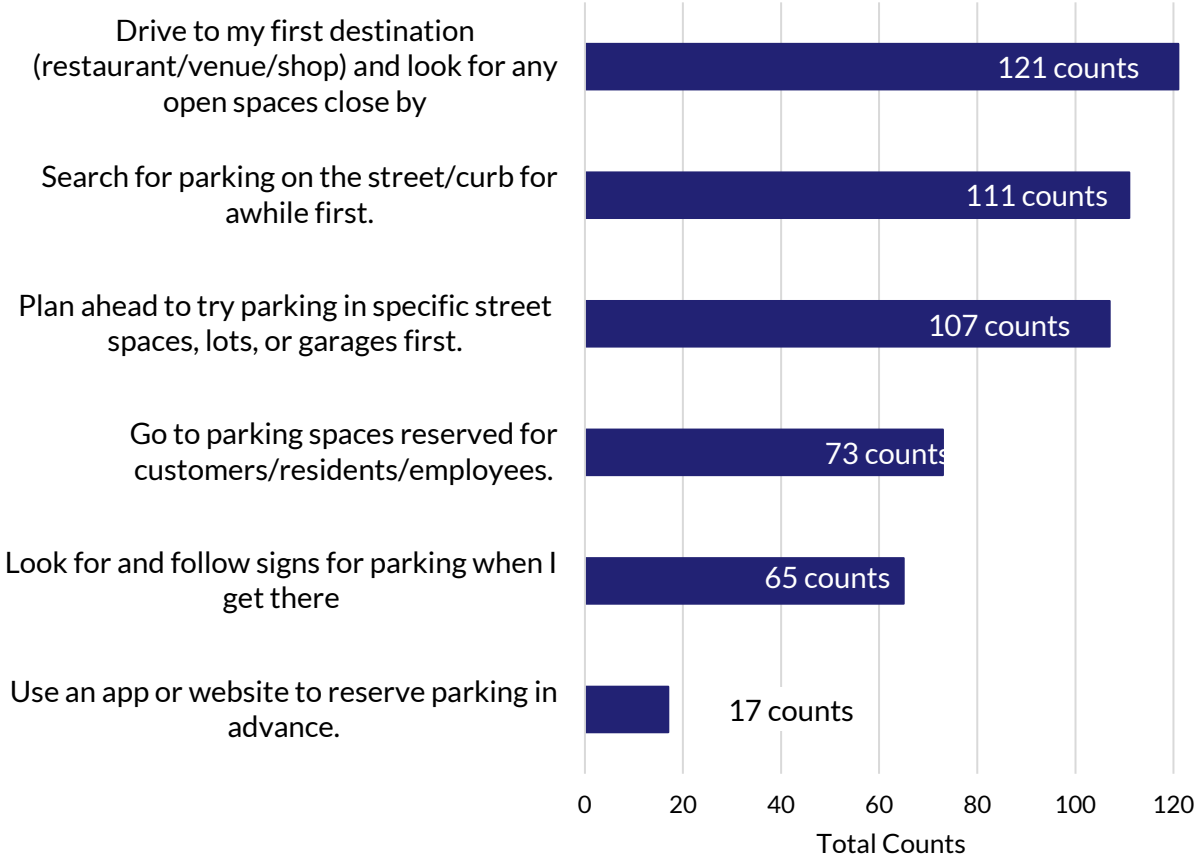


Table 6-1: Parking Methods

Method	Rarely/never	Sometimes	Frequently	Sometimes and Frequently Combined
Drive to my first destination (restaurant/venue/shop) and look for any open spaces close by	29	39	82	80%
Search for parking on the street/curb for a while first.	39	55	56	73%
Plan ahead to try parking in specific street spaces, lots, or garages first.	43	47	60	70%
Go to parking spaces reserved for customers/residents/employees.	76	35	38	48%
Look for and follow signs for parking when I get there	85	44	21	43%
Use an app or website to reserve parking in advance.	132	14	3	11%

**Total percentage of responses do not sum to 100 percent due to respondents having the option to select multiple parking methods.*

Go to open spots based on another method.

Table 6-2: Other Parking Methods

Count	Responses
1	*Private parking garage at my resident building*
2	*I do not know of parking spots for employees*
3	*Used to know where all the free parking was and parked there. That parking was taken away to build stuff. Sucks.*
4	*I don't need a spot because I take transit*
Total Count: 4	2.6% of responses

Section 7: What factors are most important to you when parking in Deep Ellum?

Figure 7-1: Parking Preferences Factors

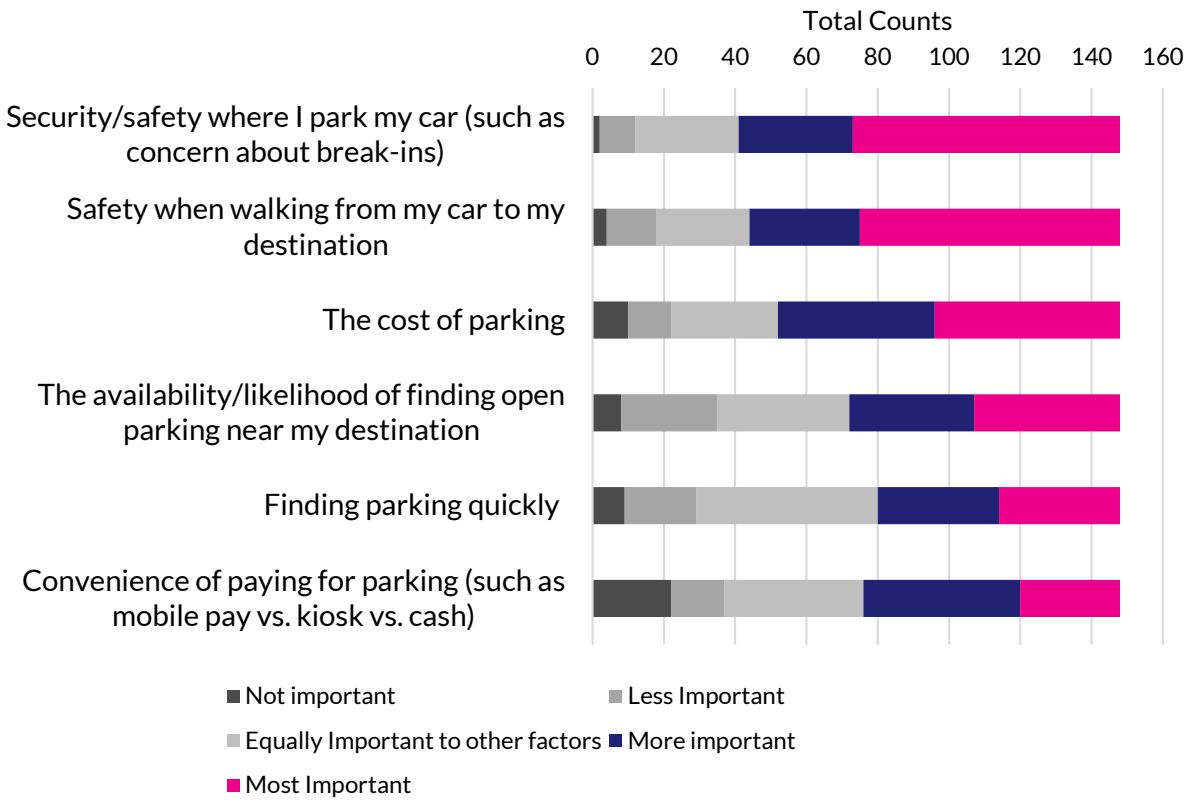


Table 7-1: Parking Preferences Factors

Factors	Percentage and Total Counts of each Factor									
	Not important		Less Important		Equally Important to other Factors		More Important		Most Important	
Security/safety where I park my car (such as concern about break-ins)	2	1.4%	10	6.8%	29	19.6%	32	21.6%	75	50.7%
Safety when walking from my car to my destination	4	2.7%	14	9.5%	26	17.6%	31	20.9%	73	49.3%
The cost of parking	10	6.8%	12	8.1%	30	20.3%	44	29.7%	52	35.1%
The availability/likelihood of finding open parking near my destination	8	5.4%	27	18.2%	37	25%	35	23.6%	41	27.7%
Finding parking quickly	9	6.1%	20	13.5%	51	34.5%	34	23%	34	23%
Convenience of paying for parking (such as mobile pay vs. kiosk vs. cash)	22	14.9%	15	10.1%	39	26.4%	44	29.7%	28	18.9%

Do the factors listed above vary in importance depending on the time of the day? If yes, please explain.

Please note, some responses overlap/repeat as they may contain information across various categories. Survey responses are grouped into the following suggestions/concerns:

Table 7-2: Nighttime/Evening

Count	Responses	Factors
1	*Evenings are a bit too rowdy sometimes*	Safety
2	*At night especially safety is a concern but during the day/evening when coming up dinner it's hard to find a spot just to run in and grad the food.*	Safety
3	*At night it is more important for safety reasons.*	Safety
4	*Yes, night is dangerous*	Safety
5	*Safety is more of a factor at night.*	Safety
6	*yes, weekend nights I'm scared of parking far due to safety of myself and my car.*	Safety
7	*Safety and vandalism/theft are more important in evening/night*	Safety
8	*at night, safety is a major concern*	Safety
9	*I don't drive there at night due to safety*	Safety
10	*Yes. Safety concerns become more important at night and cost becomes less important at night (I'm likely there for a specific event that I'm already paying for.)*	Safety
11	*Yes after 7 I don't like going to my car alone*	Safety
12	*Yes, It is less safe at night*	Safety
13	*Yes break-ins at night are frequent and common in free/ unmonitored street parking and makes me uncomfortable leaving my car in deep ellum. The paid private lots are all too expensive and the payment methods are too complicated.*	Safety; Cost of Parking
14	*Yes, everyone is heavily intoxicated at night. During the day, the traffic is too chaotic for find a spot because you can't just slow down to get your bearings.*	Safety
15	*Interested in finding close and safe parking near my destination over affordable parking during high risk times, such as at night or on weekends*	Safety; Availability of finding open parking near my destination
16	*Yes, dont want to walk far at night but also dont want to be trafficked jam when trying to get home*	Availability of finding open parking near my destination
17	*Not going to look for nearby street parking on a weekend night*	Availability of finding open parking near my destination
18	*After dark, I need to be parked close to my destination unless I'm walking with a group*	Availability of finding open parking near my destination

19	*If night time I like to park close to my destination*	Availability of finding open parking near my destination
20	*Do not want to walk far in the dark.*	Availability of finding open parking near my destination
21	*Nighttime will pay more to park closer*	Availability of finding open parking near my destination
22	*At night I want to park closer*	Availability of finding open parking near my destination
23	*Daytime, definitely try to park close to destination because I can. Nighttime, give more lenience because parking is harder to find.*	Availability of finding open parking near my destination
24	*More difficult evenings*	Other
25	*Evenings and weekends.*	Other
26	*At night*	Other
27	*Night*	Other
28	*Paid-parking lots off public streets are important after dark.*	Other
29	*I may park in some spots during the day that I would not park in at night*	Other
30	*day vs. night is a whole different ball game - night is bad.*	Other
Total Count: 30	64 % of responses	

Table 7-3: Daytime

Count	Responses	Factors
1	*Daytime, definitely try to park close to destination because I can. Nighttime, give more lenience because parking is harder to find.*	Availability/likelihood of finding open parking near my destination
2	*More parking Spaces during the day*	Availability/likelihood of finding open parking near my destination
3	*limited availability late AM/early PM*	Availability/likelihood of finding open parking near my destination
4	*Yes, everyone is heavily intoxicated at night. During the day, the traffic is too chaotic for find a spot because you can't just slow down to get your bearings.*	Availability/likelihood of finding open parking near my destination
5	*Yes it is nearly impossible to find free parking or affordable parking at any time after 12PM*	Cost of parking

6	*The inconvenience of having to find/pay for parking is a deterrent to having frequent lunches in the area.*	Cost of parking
7	*Business lunch I don't have time to look for parking and refuse to pay $10 - $20 to park for lunch*	Cost of parking; Finding parking quickly
8	*It is more important when I am trying to get to work on time*	Finding parking quickly
9	*I may park in some spots during the day that I would not park in at night*	Other
10	*day vs. night is a whole different ball game - night is bad.*	Other
Total Count: 10	21% of responses	

Table 7-4: General/Miscellaneous

Count	Responses	Factors
1	*Safety! Safety! Safety!*	Safety
2	*yes as a woman, my safety is my highest concern*	Safety
3	*Drunk drivers leave lots and police do nothing to stop tem*	Safety
4	*Pedestrian walking safety to and from parking location and destination. Need better pedestrian signals and crosswalks.*	Safety
5	*Yes - why do I have an entire concert venue to visit without adequate parking? Why am I walking so far when deep ellum booked the gif without coordinating parking.*	The availability/likelihood of finding open parking near my destination
6	*Yes bc parking is too difficult and expensive*	Cost of parking
7	*Yes*	Other
8	*Dark or light outside*	Other
9	*Depending on street closure for events in the neighborhood, and the rare occasion that I come to Deep Ellum to go out*	Other
Total Count: 9	19% of responses	

Table 7-5: Weekends

Counts	Responses	Factors
1	*Hard to find resident parking on the weekends*	The availability/likelihood of finding open parking near my destination
2	*Interested in finding close and safe parking near my destination over affordable parking during high risk times, such as at night or on weekends*	The availability/likelihood of finding open parking near my destination

3	*yes, weekend nights I'm scared of parking far due to safety of myself and my car.*	Safety
4	*Evenings and weekends.*	Other
5	*Weekends are bananas*	Other
6	*Not going to look for nearby street parking on a weekend night*	Other
Total Count: 6	13% of responses	

Any other comments or ideas on improving parking in Deep Ellum?

Survey responses are grouped into the following suggestions/concerns, with some responses overlapping and repeated across various categories:

Table 7-6: Garages

Count	Responses
1	*Advertise the giant garage and city lots under 345*
2	*Affordable parking garages to reduce the number of cars going through the main deep ellum streets. These should be pedestrian only, like new orleans, at certain times. Parking prices are way to high curently and way too limited. It taked me at least half an hour to find affordable/free parking on weekends.*
3	*Build a big parking garage walking distance to increase revenue*
4	*Build a garage that a law firm and private public companies could pay for so parking is free*
5	*Free lot/garage parking during the day.*
6	*I spent years parking in lot behind Cafe Brazil and then starting parking in lot behind Trees. I recently found that a parking garage is available. I love that and it's my first choice now.*
7	*The parking garage on Henry and Commerce is great, but is difficult to utilize if you're further east in Deep Ellum. Would be great if there was something similar in east Ellum, or pedicabs to take you to your parking spot.*
8	*There should be some sort of a parking garage that is central to all the bars and restaurants. We typically have to park blocks and blocks away in order to find a parking spot*
9	*Utilizing more garage space instead of surface lots I believe is helpful. I understand parking revenue is important but many more people visiting Deep Ellum should utilize DART. Deep Ellum Station and Baylor Station gets anyone within walking distance of any destination and minimize the demand for parking.*
10	*Make a large parking lot or garage nearby, free and advertise it. Get rid of all lots and replace with more retail and restaurants. Provide a free bus to and from the parking lot, if far.*
11	*Eliminate private parking lots. Do not allow private parking vendors to boot cars. Put a cap on how much private parking vendors charge to park. Develop more high density mixed use buildings for businesses and residents. Build up not out.* *Do not allow any more parking lots to be developed in deep ellum.*

	Focus on developing free garages built up in areas people most frequently go. *Stop deep ellum security members from throwing cones in the street and sidewalk to reserve public parking for themselves.* *Stop police from parking their cars on sidewalks or parking in the middle of the street.* *Stop the Police from parking illegally all over deep ellum.* *Invest in real protected bicycle infrastructure from dart train stations to deep ellum and throughout the neighborhood.*
Total Count: 11	15% of responses

Table 7-7: Security and Safety

Count	Responses
1	*First of all; why do you suck up the real estate with commerce & then basically leave zero parking options? Secondly; deep ellum is incredibly unsafe! Leaving us broken parking meters in the dark & then charging from some obscure company is really irresponsible. You show no care to patrons, only the money you make. It doesn't even out and has ceased to be fun.*
2	*Having more parking lots or garages with cameras so that our cars and ourselves are safe when we go out in Deep Ellum would be amazing. I have seen cars broken into in Deep Ellum as well as people be assaulted at night on the streets.*
3	*If I can't find parking with in safe walking distance I'm likely to return to home and not visit deep ellum*
4	*More security personnel.*
5	*Safety is paramount. But shutting the streets isn't the answer.*
6	*The police need to be actively targeting people who are leaving lots drunk driving.*
7	*Why do meters only allow parking until midnight? Many people (including myself) go to deep ellum and stay until after 3am. I don't want to get my car towed and I don't want to pay $25 for parking at a lot! Meters are cheap, and efficient. Besides that, can more lighting be added on some streets. There are streets that have meters but are very dangerous to park in due to how dark it is. There are some roads that have pot holes, and ruin low cars. Furthermore, there are some lots that have ramps that are too steep for low cars.*
8	*easier apps/ kiosks and more garages w/ security or cameras inside.*
9	*Evey time I go to Deep Ellum, it's hard to find parking especially on the weekends because the lots are mostly filled due to the nightlife there or events. When I usually go, I always park around the same place that have open space parking lot where you can pay for parking on the kiosk and have it set for reasonable price. (Mostly nearby restaurants, bar, or concert venues that have the art murals that labels for parking) Ever since crime rates and violence have got worse throughout the past 5+ years, I feel unsafe going there at night especially with friends. I think for parking lots that are full, they should put up the signs says, "Parking Lot FULL." instead of fighting for parking.*
10	*Bigger, more clear signs & better lighting. I do not go out there by myself at night.*
Total counts: 10	13.3% of responses

Table 7-8: Active Transportation

Counts	Responses
1	*Focus on walkable neighborhoods and develop PROTECTED bike lanes on all streets. Narrow the streets and decrease speed limits. Encourage and grow a walkable/ safe well-lit passage from pearl arts district DART station and Deep Ellum DART stations to decrease car use and discourage single occupant vehicles in the deep ellum/ downtown area.*
2	*Get rid of parking on main and put in bike lanes.*
3	*Maybe those group bikes could be group transport to and from the neighborhood?*
4	*More free parking and allowing scooters back in the area*
5	*Please encourage bike / walking traffic to Deep Ellum.*
6	*Deep Ellum is served by TWO rail stops and numerous bus lines. The fact that you're so focused on car parking is just sad. Want to improve parking? Make it easier and more convenient for folks to walk/bike/take transit to Deep Ellum. Otherwise you're just going to get more of the same. If anything, parking should be HIGHLY discouraged in Deep Ellum.*
7	*Eliminate private parking lots. Do not allow private parking vendors to boot cars. Put a cap on how much private parking vendors charge to park. Develop more high density mixed use buildings for businesses and residents. Build up not out.* *Do not allow any more parking lots to be developed in deep ellum.* *Focus on developing free garages built up in areas people most frequently go.* *Stop deep ellum security members from throwing cones in the street and sidewalk to reserve public parking for themselves.* *Stop police from parking their cars on sidewalks or parking in the middle of the street.* *Stop the Police from parking illegally all over deep ellum.* *Invest in real protected bicycle infrastructure from dart train stations to deep ellum and throughout the neighborhood.*
8	*Get rid of the parking spaces and encourage/force people to walk/public transit/ride share to deep ellum. Way too many vehicles.*
9	*If there were a designated lot or garage for employees only, so more on street parking would be available for customers. If parking costs at The Stack parking garage didn't fluctuate wildly when there are events at The Factory. If so many of the street meters weren't covered up when there were events––which looks like a money grab. If the parking lot at Malcom X and Indiana were a parking garage with an entrance to Crowdus and Crowdus was pedestrianized through Deep Ellum and included lighting and other safety features. If there were a better pedestrianized pathway from The Epic parking garage to Main street, that was wide and lighted and landscaped and felt safe then that garage would get used more.*
Total Count: 9	12% of responses

Table 7-9: Public Transit

Counts	Responses
1	*All of these parking debates are pointless because the real solution to parking is to start investing in better public transportation and alternate methods of transport to limit the number of cars (and better yet the alarming amount of drunk drivers). You can only fit so many cars in a dense area like Deep Ellum and downtown Dallas as a whole. Start investing in the future and there wouldn't be a point to these surveys. Street parking has so many restrictions for absolutely no reason in Deep Ellum. I've had easier times parking on the street in busy areas of NYC and Philadelphia compared to Deep Ellum because of all the restrictions. There's not a parking problem, it's a gatekeeping problem. Same applies to valet companies that take over parking lots. No one wants to pay someone to park their car 5 feet away in a a parking spot, but they have to. It's a waste of time and resources that only benefits the valet companies. It's not a lack of parking but a lack of alternate forms of transportation that is a larger problem the region needs to invest in. We're already behind the curve.*
2	*Deep Ellum is served by TWO rail stops and numerous bus lines. The fact that you're so focused on car parking is just sad. Want to improve parking? Make it easier and more convenient for folks to walk/bike/take transit to Deep Ellum. Otherwise you're just going to get more of the same. If anything, parking should be HIGHLY discouraged in Deep Ellum.*
3	*Get rid of the parking spaces and encourage/force people to walk/public transit/ride share to deep ellum. Way too many vehicles.*
4	*I don't own a car and have zero trouble getting to Deep Ellum using DART or ride shares. Frankly, there is already too much parking in the neighborhood, making the street life less desirable. I was appalled to see the Gypsy Ballroom and all its history torn down just to become a parking lot. Parking lots bring nothing of value to neighborhoods. Deep Ellum should be doing everything it can to eliminate the addition of more parking. If it doesn't the neighborhood will one day look like a suburban Costco strip mall development rather than a bustling, foundational Dallas neighborhood.*
5	*It would be great to have a shuttle from DART and a hop on hop off shuttle*
6	*Make a large parking lot or garage nearby, free and advertise it. Get rid of all lots and replace with more retail and restaurants. Provide a free bus to and from the parking lot, if far.*
7	*Remote paid parking with free trolleys/carts looping at high frequency*
8	*Focus on walkable neighborhoods and develop PROTECTED bike lanes on all streets. Narrow the streets and decrease speed limits. Encourage and grow a walkable/ safe well lit passage from pearl arts district DART station and Deep Ellum DART stations to decrease car use and discourage single occupant vehicles in the deep ellum/ downtown area.*
9	*Utilizing more garage space instead of surface lots I believe is helpful. I understand parking revenue is important but many more people visiting Deep Ellum should utilize DART. Deep Ellum Station and Baylor Station gets anyone within walking distance of any destination and minimize the demand for parking.*
Total counts: 9	12% of responses

Table 7-10: Signage

Counts	Responses
1	*Bigger, more clear signs & better lighting. I do not go out there by myself at night.*
2	*Evey time I go to Deep Ellum, it's hard to find parking especially on the weekends because the lots are mostly filled due to the nightlife there or events. When I usually go, I always park around the same place that have open space parking lot where you can pay for parking on the kiosk and have it set for reasonable price. (Mostly nearby restaurants, bar, or concert venues that have the art murals that labels for parking) Ever since crime rates and violence have got worse throughout the past 5+ years, I feel unsafe going there at night especially with friends. I think for parking lots that are full, they should put up the signs says, "Parking Lot FULL." instead of fighting for parking.*
3	*More prominent signage that includes the price of the parking, especially for the publicly available garages*
4	*Signage toward public parking should be standardized and more visual. Real-time displays of parking availability would be awesome. Generally shutting down sections of Main Street to traffic in the first place would make the district safer and more enjoyable. Additional residential development around Deep Ellum will provide a local customer base to replace vehicular visitors. Pair that with disincentivizing driving in the area by limiting parking, closing down street sections to private car traffic entirely (maybe allow busses), and ensuring plentiful bike racks, and the area will continue to thrive - and probably still draw visitors through transit/bike/rideshare etc. - while being safe from vehicles and reducing the need for parking management.*
5	*"The paid lots are evil. The signage is confusing. Every lot is different and they do that on purpose. We went for breakfast a few weeks ago at Cafe Brazil. The lot had a sign "free for cafe Brazil" in big letters. The small print said "before 10am". We were booted at 11:11 and cost us $119. We live here. We should know better, but if I had been a tourist I would have left with a terrible opinion of Deep Ellum.* *Can there be a standard practice for all lots in deep Ellum? In other words, they all have to operate the same so it's not confusing? Signage approved by a resident committee or something.* *Can residents pay for a resident parking sticker? Would allow us to park anywhere, within reason of course. Fund raiser idea for the foundation?* *Please do something about the predatory behavior of the parking lot owners. It's criminal…or it should be and it is a black mark on our otherwise funky fun beautiful neighborhood.* *BTW…don't let Austin Young buy a parking lot. 😉"*
6	*All parking on a website! Maps of all parking around the district. Clear pricing from the street.*
7	*The park situation as a whole is grade F. Not only is there NOWHERE to park. Even when parked - i consistently find dumbass tickets on my window on a weekly basis (i never pay for them - i fight them in court and win 90% of them time) bc im getting tickets FOR REASONS THAT ARE SIMPLY NOT ILLEGAL. The parking signs around deep ellum either dont make sense or are not followed correctly. There's limited space and limited parking and the lots that are for parking you have to pay upwards of $5. Why does it make sense to pay $5 so i can walk into biscuit bar for 20 min on my lunch break and leave. It should be free. Change your parking situation its absolutely horrible.*
Total Counts: 7	9.3% of responses

Table 7-11: Variable Demand Pricing

Counts	Responses
1	*Parking is way to expensive and I believe it should be free during the day(before 5pm) to allow those going for lunch and less time ease of parking without the need to pay expensive fees.*
2	*Parking lots in Deep Ellum are all privately owned for profit. Business in Deep Ellum has declined sharply due to excessive cost of parking and distance. Parking lots should be free to patrons before 6pm to incentivize people to come back to the area. Places like Greenville, Addison, Frisco entertainment districts all have them, yet Deep Ellum is all about how to make more money and drive business away!*
3	*private parking we get complaints all the time that some customers after 4 don't want to pay for the whole night just to come in for a couple minutes to the store*
4	*Stop charging extremely high flat rates just because it's a weekend or night, not everyone is there to bar hop or club. I've gone to eat at a local place and driven bc of cold weather and had to pay $26 for parking. That's as much as my meal and I was parked for maybe an hour to an hour and a half.*
5	*The park situation as a whole is grade F. Not only is there NOWHERE to park. Even when parked - i consistently find dumbass tickets on my window on a weekly basis (i never pay for them - i fight them in court and win 90% of them time) bc im getting tickets FOR REASONS THAT ARE SIMPLY NOT ILLEGAL. The parking signs around deep ellum either dont make sense or are not followed correctly. There's limited space and limited parking and the lots that are for parking you have to pay upwards of $5. Why does it make sense to pay $5 so i can walk into biscuit bar for 20 min on my lunch break and leave. It should be free. Change your parking situation its absolutely horrible.*
6	*There needs to be more parking that isn't so expensive like the parking lots are. They sit in their cars and wait for someone to walk away and immediately boot cars. We have customers who flat refuse to come to our store because of the parking situation. These are customers that were extremely excited for a Fluevog store in Dallas but quickly lost their excitement when they found out where we are.*
7	*I usually take the train when I visit Deep Ellum, but I wholly support paid parking such that it guarantees finding parking more quickly. I support the pricing being based on demand in order to achieve that goal. The price should be set either automatically or based on an outcome set by policy (for example: 1-2 spaces available per block at all times). The price should NOT be set by politics, as it will not achieve the end goal of making it easier to find an available parking space.*
Total Counts: 7	9.3% of responses

Table 7-12: Website/Apps

Counts	Responses
1	*All parking on a website! Maps of all parking around the district. Clear pricing from the street.*
2	*easier apps/ kiosks and more garages w/ security or cameras inside.*
3	*Would love to see more parking in Deep Ellum at a reasonable cost that uses mobile pay options and QR codes like our current meters are. Deep Ellum needs lots more parking space.*
4	*Signage toward public parking should be standardized and more visual. Real-time displays of parking availability would be awesome. Generally shutting down sections of Main Street to*

	traffic in the first place would make the district safer and more enjoyable. Additional residential development around Deep Ellum will provide a local customer base to replace vehicular visitors. Pair that with disincentivizing driving in the area by limiting parking, closing down street sections to private car traffic entirely (maybe allow busses), and ensuring plentiful bike racks, and the area will continue to thrive - and probably still draw visitors through transit/bike/rideshare etc. - while being safe from vehicles and reducing the need for parking management.
5	*The major problem I have and that I hear others have is that the parking lots and meters do not work with the provided app. It is so frustrating to find a place to park and then you can't get the app to accept your credit card or find the spot or lot your parking in. Also I'm not going to spend $20 to park in Deep Ellum when there are other entertainment districts that I can park at for free. What were being charged to parking is like going to a sports event or American airlines center.*
6	*"The paid lots are evil. The signage is confusing. Every lot is different and they do that on purpose. We went for breakfast a few weeks ago at Cafe Brazil. The lot had a sign "free for cafe Brazil" in big letters. The small print said "before 10am". We were booted at 11:11 and cost us $119. We live here. We should know better, but if I had been a tourist I would have left with a terrible opinion of Deep Ellum.* *Can there be a standard practice for all lots in deep Ellum? In other words, they all have to operate the same so it's not confusing? Signage approved by a resident committee or something.* *Can residents pay for a resident parking sticker? Would allow us to park anywhere, within reason of course. Fund raiser idea for the foundation?* *Please do something about the predatory behavior of the parking lot owners. It's criminal…or it should be and it is a black mark on our otherwise funky fun beautiful neighborhood.* *BTW…don't let Austin Young buy a parking lot. 😉"*
Total Counts: 6	8% of responses

Table 7-13: Ped-only Street

Counts	Responses
1	*Close off Main and Elm to vehicle traffic on weekends. Make those streets pedestrian only.*
2	*Quit shutting down the streets. It's killing business.*
3	*Street closures suck and just fuck traffic up. Crime may go down but businesses also suffer. There needs to be a better solution to stopping crime than choking out business.*
4	*Affordable parking garages to reduce the number of cars going through the main deep ellum streets. These should be pedestrian only, like new orleans, at certain times. Parking prices are way to high curently and way too limited. It taked me at least half an hour to find affordable/free parking on weekends.*
5	*Signage toward public parking should be standardized and more visual. Real-time displays of parking availability would be awesome. Generally shutting down sections of Main Street to traffic in the first place would make the district safer and more enjoyable. Additional residential development around Deep Ellum will provide a local customer base to replace vehicular visitors. Pair that with disincentivizing driving in the area by limiting parking, closing down street sections to private car traffic entirely (maybe allow busses), and ensuring plentiful bike racks, and the area will continue to thrive - and probably still draw visitors*

	through transit/bike/rideshare etc. - while being safe from vehicles and reducing the need for parking management.
Total counts: 5	6.7% of responses

Table 7-14: Employee Parking

Counts	Responses
1	*Having a designated area for DE employees to park. Even if it is a few blocks away, I'd like to know I have an ensured spot and not struggle to find parking when there are events that may affect availability.*
2	*If there were a designated lot or garage for employees only, so more on street parking would be available for customers. If parking costs at The Stack parking garage didn't fluctuate wildly when there are events at The Factory. If so many of the street meters weren't covered up when there were events––which looks like a money grab. If the parking lot at Malcom X and Indiana were a parking garage with an entrance to Crowdus and Crowdus was pedestrianized through Deep Ellum and included lighting and other safety features. If there were a better pedestrianized pathway from The Epic parking garage to Main street, that was wide and lighted and landscaped and felt safe then that garage would get used more.*
3	*Since I work there I will never pay for parking, because it eats into my pay. I come from Mesquite so there is no practical option other than to drive my own car. I work at two venues and parking on Commerce has much better and more options, paid or free, than parking on Elm. When I go the venue on Elm, I usually park in the dirt near the rail tracks. Not saying this is "good", but many other cars park there showing the lack of convenient parking on the west end of Elm.*
4	*Create more employee lots. People coming to Deep Ellum are usually drinking so they should be ride sharing. Being late to work because you can't find parking, don't want to pay $35 or can't find a safe place to park that is close (ish) to your job so you don't have to be worried when you leave at midnight or 3am is frustrating.*
Total Counts: 4	5.3% of responses

Table 7-15: Maintenance

Counts	Responses
1	*The major problem I have and that I hear others have is that the parking lots and meters do not work with the provided app. It is so frustrating to find a place to park and then you can't get the app to accept your credit card or find the spot or lot your parking in. Also I'm not going to spend $20 to park in Deep Ellum when there are other entertainment districts that I can park at for free. What were being charged to parking is like going to a sports event or American airlines center.*
2	*The parking garages that I use have broken gates for entry to the garage 95% of the time. The garage feels less secure when these gates are broken. I always pay anyway but I am sure most people don't.*
3	*First of all; why do you suck up the real estate with commerce & then basically leave zero parking options? Secondly; deep ellum is incredibly unsafe! Leaving us broken parking meters in the dark & then charging from some obscure company is really irresponsible. You show no care to patrons, only the money you make. It doesn't even out and has ceased to be fun.*

4	*Why do meters only allow parking until midnight? Many people (including myself) go to deep ellum and stay until after 3am. I don't want to get my car towed and I don't want to pay $25 for parking at a lot! Meters are cheap, and efficient. Besides that, can more lighting be added on some streets. There are streets that have meters but are very dangerous to park in due to how dark it is. There are some roads that have pot holes, and ruin low cars. Furthermore, there are some lots that have ramps that are too steep for low cars.*
Total counts: 4	5.3% of responses

Table 7-16: LU Mix

Counts	Responses
1	*Bulldozing more buildings for more parking is what's ruining Deep Ellum. Valets are not the answer. Too many bars, too many restaurants. It's no longer a big mix of business. There used to be much more of a mix of daytime and nighttime uses. Concentrating the whole area on nighttime uses is the problem.*
2	*"Eliminate private parking lots. Do not allow private parking vendors to boot cars. Put a cap on how much private parking vendors charge to park. Develop more high density mixed use buildings for businesses and residents. Build up not out.* *Do not allow any more parking lots to be developed in deep ellum.* *Focus on developing free garages built up in areas people most frequently go.* *Stop deep ellum security members from throwing cones in the street and sidewalk to reserve public parking for themselves.* *Stop police from parking their cars on sidewalks or parking in the middle of the street.* *Stop the Police from parking illegally all over deep ellum.* *Invest in real protected bicycle infrastructure from dart train stations to deep ellum and throughout the neighborhood. "*
3	*Signage toward public parking should be standardized and more visual. Real-time displays of parking availability would be awesome. Generally shutting down sections of Main Street to traffic in the first place would make the district safer and more enjoyable. Additional residential development around Deep Ellum will provide a local customer base to replace vehicular visitors. Pair that with disincentivizing driving in the area by limiting parking, closing down street sections to private car traffic entirely (maybe allow busses), and ensuring plentiful bike racks, and the area will continue to thrive - and probably still draw visitors through transit/bike/rideshare etc. - while being safe from vehicles and reducing the need for parking management.*
Total Count: 3	4% of responses

Table 7-17: Business/Patron Validation

Counts	Responses
1	*I only come for concerts and have no problem paying for parking in the garage. I frequent velvet taco for lunch a lot and noticed the parking lot behind is now payment only. I don't agree with having to pay to park for that. As you know, this location is on the corner with very limited street parking.* *Restaurants in uptown always validate parking, velvet does not. This review is more geared towards me having to pay for parking to get lunch at velvet. This is something I struggle to understand, respectfully*
Total Count: 1	1.3% of responses

Table 7-18: Cash option

Counts	Responses
1	*Don't add more meters. Keep the option of paying cash for meters and lots.*
Total Count: 1	1.3% of responses

Table 7-19: Resident-Only Permit

Counts	Responses
1	*Allow resident-only parking with sticker around the Live Oak Lofts Building*
Total counts: 1	1.3% of responses

Table 7-20: Rideshare

Counts	Responses
1	*Create more employee lots. People coming to Deep Ellum are usually drinking so they should be ride sharing. Being late to work because you can't find parking, don't want to pay $35 or can't find a safe place to park that is close (ish) to your job so you don't have to be worried when you leave at midnight or 3am is frustrating.*
Total counts: 1	1.3% of responses

Table 7-21: Valet Parking

Counts	Responses
1	*Stop allowing clubs to open in residential areas in deep ellum. The clubs make deep ellum unsafe and complicate parking.* *Clubs should have to have valet service only and no public parking should be available to those venues.*
Total Counts: 1	1.3% of responses

Appendix A-1: Deep Ellum Parking Study Survey Form

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENT

English Version:
Deep Ellum Parking District Study Survey

The North Central Texas Council of Governments (NCTCOG) is studying district parking needs in coordination with the Deep Ellum Foundation and the City of Dallas (www.nctcog.org/DEParkingStudy). We need help from Deep Ellum visitors, residents, businesses, and employees to better understand parking needs. Please answer the questions below to share how you travel to and park in Deep Ellum. Complete the required questions and enter for a chance to win a $100 Visa gift card at the end of the survey.

Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8

Section 1: About you

Select all that apply to you:

- Live in Deep Ellum
- Work in Deep Ellum
- Visit Deep Ellum often
- Visit Deep Ellum sometimes

Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8

Section 2: Travel Days/Times

When do you most frequently travel to Deep Ellum (select all that apply):

- Weekdays (Monday-Thursday)-daytime (before 5PM)
- Weekdays (Monday-Thursday)-evening/night (after 5PM)
- Weekends (Friday-Sunday)-daytime (before 5PM)
- Weekends (Friday-Sunday)-evening/night (after 5PM)

Section 1 | Section 2 | Section 3 | Section 4 | Section 5 | Section 6 | Section 7 | Section 8

Section 3: How do you typically travel to places in Deep Elum?

Do you taxi/rideshare (Uber/Lyft) to Deep Ellum?

- Rarely/never
- Sometimes
- Frequently

Do you drive your car to Deep Ellum?

- Rarely/never
- Sometimes
- Frequently

Do you **carpool/get a ride** to Deep Ellum?

Rarely/never

Sometimes

Frequently

Do you **walk** to Deep Ellum?

Rarely/never

Sometimes

Frequently

Do you **bike/scooter** to Deep Ellum?

Rarely/never

Sometimes

Frequently

Do you **ride DART (bus/train)** to Deep Ellum?

Rarely/never

Sometimes

Frequently

Do you **use another mode** to Deep Ellum? If so, please indicate what mode and whether you use it **sometimes** or **frequently**:

Rarely/never

Other: _____

Section 4: How do you park when you drive to Deep Ellum?

If you go to more than one place in Deep Ellum (e.g. from a restaurant to a bar) do you ever move your car and re-park?

Rarely/never

Sometimes

Frequently

Section 5: What type of parking do you typically use?

Paid parking lot

Rarely/never

Sometimes

Frequently

Paid garage

Rarely/never

Sometimes

Frequently

On-street/curb parking

Rarely/never

Sometimes

Frequently

Free lot/garage (e.g. customers/residents/employees only parking)

Rarely/never

Sometimes

Frequently

Section 6: How frequently do you use these methods when searching for parking in Deep Ellum?

Drive to my first destination (restaurant/venue/shop) and look for any open spaces close by.

Rarely/never

Sometimes

Frequently

Plan ahead to try parking in specific street spaces, lots, or garages first.

Rarely/never

Sometimes

Frequently

Look for and follow signs for parking when I get there.

Rarely/never

Sometimes

Frequently

Search for parking on the street/curb for a while first.

Rarely/never

Sometimes

Frequently

Go to parking spaces reserved for customers/residents/employees.

Rarely/never

Sometimes

Frequently

Use an app or website to reserve parking in advance.

Rarely/never

Sometimes

Frequently

Go to open spots based on another method (please specify):

N/A

Other: _____

Section 7: What factors are most important to you when parking in Deep Ellum:

The cost of parking

Not important

Less important

Equally important to other factors

More important

Most important

Convenience of paying for parking (such as mobile pay vs. kiosk vs. cash)

Not important

Less important

Equally important to other factors

More important

Most important

Safety when walking from my car to my destination

Not important

Less important

Equally important to other factors

More important

Most important

Security/safety when I park my car (such as concern about break-ins)

Not important

Less important

Equally important to other factors

More important

Most important

Finding parking quickly

Not important

Less important

Equally important to other factors

More important

Most important

The availability/likelihood of finding open parking near my destination

Not important

Less important

Equally important to other factors

More important

Most important

Do the factors listed above vary in importance depending on the time of day? If yes, please explain.

No

Other: _____

Any other comments or ideas on improving parking in Deep Ellum?

Section 1 > Section 2 > Section 3 > Section 4 > Section 5 > Section 6 > Section 7 > Section 8

Section 8: Please answer the following to be entered for a chance to win a $100 Visa gift card.

How did you hear about this survey?

By email

From social media

Flyer

Table tent

Shared with you by another person

Other: _____

Name

Email

Versión en Español:

Estudio sobre los Estacionamientos en Deep Ellum

El North Central Texas Council of Governments (NCTCOG) está realizando un estudio sobre las necesidades de estacionamiento en el distrito en coordinación con el Deep Ellum Foundation (DEF) y la Ciudad de Dallas. Necesitamos la ayuda de los visitantes, residentes, empresas y empleados en Deep Ellum para entender mejor las necesidades de los estacionamientos. Responde a las siguientes preguntas para compartir cómo viajas y te estacionas en Deep Ellum. Completa las preguntas requeridas y participa para tener la oportunidad de ganar una tarjeta de regalo Visa con valor de $100 al final de la encuesta.

Sección 1 | Sección 2 | Sección 3 | Sección 4 | Sección 5 | Sección 6 | Sección 7 | Sección 8

Sección 1: Acerca de ti

Selecciona todo lo que corresponda:

Vivo en Deep Ellum

Trabajo en Deep Ellum

Visito Deep Ellum con frecuencia

Vivo en Deep Ellum

Sección 1 | Sección 2 | Sección 3 | Sección 4 | Sección 5 | Sección 6 | Sección 7 | Sección 8

Sección 2: Días/Horas de Viaje

¿Con que frecuencia viajas a Deep Ellum? (Selecciona todo lo que te corresponda)

Entre semana (lunes a jueves) de día (antes de las 5PM)

Entre semana (lunes a jueves) por la tarde/noche (después de las 5PM)

Fines de semana (viernes a domingo) de día (antes de as 5PM)

Entre semana (lunes a jueves) de día (antes de las 5PM)

Sección 3: ¿Cómo sueles trasladarte por Deep Ellum?

¿Viajas en taxi/transporte compartido (Uber, Lyft) a Deep Ellum?

Rara vez/nunca

Ocasional

Con frecuencia

¿Conduces tu automóvil a Deep Ellum?

Rara vez/nunca

Ocasional

Con frecuencia

¿Compartes automóvil/te llevan a Deep Ellum?

Rara vez/nunca

Ocasional

Con frecuencia

¿**Caminas** a Deep Ellum?

Rara vez/nunca

Ocasional

Con frecuencia

¿Usas **bicicleta/scooter** para llegar a Deep Ellum?

Rara vez/nunca

Ocasional

Con frecuencia

¿Viajas en **DART (autobús/tren)** a Deep Ellum?

Rara vez/nunca

Ocasional

Con frecuencia

¿Usas **otro medio** de transporte para llegar a Deep Ellum? (Especifica):

Rara vez/nunca

Ocasional

Con frecuencia

Sección 4: ¿Cómo te estacionas cuando viajas en automóvil a Deep Ellum?

¿Si vas a más de un sitio en Deep Ellum (por ejemplo, de un restaurante a un bar), alguna vez cambias de sitio y vuelves a estacionarlo?

Rara vez/nunca

Ocasional

Con frecuencia

Sección5: ¿Qué tipo de estacionamientos sueles usar?

Estacionamiento de pago

Rara vez/nunca

Ocasional

Con frecuencia

Garaje de pago

Rara vez/nunca

Ocasional

Con frecuencia

Estacionamiento en la vía pública

Rara vez/nunca

Ocasional

Con frecuencia

Estacionamiento gratuito (ej. sólo para clientes/residentes/empleados)

Rara vez/nunca

Ocasional

Con frecuencia

Sección 6: ¿Con que frecuencia utilizas estos métodos cuando buscas estacionamiento en Deep Ellum?

Conduzco a mi primer destino (restaurante/evento/tienda) y busco por espacios disponibles en las cercanías.

- Rara vez/nunca
- Ocasional
- Con frecuencia

Planeo con anticipación para asegurarme de estacionarme primero en lugares específicos en vías públicas, estacionamientos o garajes disponibles.

- Rara vez/nunca
- Ocasional
- Con frecuencia

Cuando llego busco y sigo las señales de estacionamiento.

- Rara vez/nunca
- Ocasional
- Con frecuencia

Busco por un rato un lugar para estacionar en la calle.

- Rara vez/nunca
- Ocasional
- Con frecuencia

Voy a los lugares de estacionamiento reservados para clientes/residentes/empleados.

- Rara vez/nunca
- Ocasional
- Con frecuencia

Uso una aplicación o página web para reservar estacionamiento con anticipación.

- Rara vez/nunca
- Ocasional
- Con frecuencia

Voy a lugares disponibles por medio de otro método (especifica):

- No aplicable
- Otro: _____

Sección 7: ¿Qué factores son los más importantes al estacionarte en Deep Ellum?

El costo del estacionamiento

- No importante
- Menos importante
- Igual de importante a otros factores
- Más importante
- Muy importante

Conveniencia de pagar el estacionamiento (como, pago móvil vs. quiosco vs. en efectivo)

- No importante
- Menos importante
- Igual de importante a otros factores
- Más importante
- Muy importante

Seguridad al caminar de mi automóvil a mi destino

- No importante
- Menos importante
- Igual de importante a otros factores
- Más importante
- Muy importante

Seguridad del lugar donde estaciono mi automóvil (como preocupación de robos)

- No importante
- Menos importante
- Igual de importante a otros factores
- Más importante
- Muy importante

Encontrar estacionamiento de inmediato

- No importante
- Menos importante
- Igual de importante a otros factores
- Más importante

Muy importante

La disponibilidad/probabilidad de encontrar estacionamiento disponible cerca de mi destino.

No importante

Menos importante

Igual de importante a otros factores

Más importante

Muy importante

¿Los factores mencionados varían en importancia según la hora del día?

No

Otro: _____

¿Tienes algún otro comentario o ideas para mejorar el estacionamiento en Deep Ellum?

Sección 1 Sección 2 Sección 3 Sección 4 Sección 5 Sección 6 Sección 7 Sección 8

Sección 8: Responde las siguientes preguntas para tener la oportunidad de ganar una tarjeta de regalo.

¿Cómo te enteraste de esta encuesta?

Correo electrónico

Redes sociales

Folleto

Promoción en carteles de mesa

Compartido por otra persona

Otro: _____

Nombre

Correo electrónico:

Appendix B: Deep Ellum Parking Study Data

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

Table 1: Parking Inventory for all Observed Count Dates

Parking Type	Parking Count Dates		
	11/5/2022	6/14/2023	6/17/2023
Off-Street Parking	3,025	4,801	4,837
On-Street Parking	861	861	861
Total Parking Spaces*	3,886	5,662	5,698
Public Off-Street Parking	2,266#	3,844^	4,040#
Total Public (On- and Off-Street)	3,127	4,705	4,901

**Total is approximate. Data on residential multi-family is included only when estimate was available.*
#Including spaces in Luna Uplift Lot managed by Trees on nights/weekends.
"Lot at 2809 Canton Street was not accounted for on 6/14/2023, as it was identified during the data collection.
^Excluding space in Luna Uplift Lot during the day.

Saturday, November 5, 2022, Inventory and Occupancy Data

Table 2: November 5, 2022, 6:00 PM On-Street Parking Inventory and Occupancy

ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use
O0	8	0	0%	O143	5	0	0%	O52	10	3	30%
O1	4	4	100%	O144	5	0	0%	O53	16	1	6%
O10	4	5	125%	O145	0	3	100%	O54	12	10	83%
O100	9	11	122%	O146	10	5	50%	O55	6	9	150%
O101	9	8	89%	O147	0	10	100%	O56	7	0	0%
O102	4	5	125%	O149	6	4	67%	O57	10	0	0%
O103	10	10	100%	O15	0	7	100%	O58	3	2	67%
O104	7	10	143%	O150	0	0	0%	O59	4	4	100%
O105	7	6	86%	O151	3	3	100%	O6	6	2	33%
O106	9	10	111%	O152	0	3	100%	O60	3	3	100%
O107	7	11	157%	O153	2	0	0%	O61	3	0	0%
O108	4	4	100%	O16	7	6	86%	O62	12	8	67%
O109	3	7	233%	O17	22	21	95%	O63	7	6	86%
O11	4	4	100%	O18	0	0	0%	O64	3	1	33%
O110	0	9	100%	O19	20	22	110%	O65	10	6	60%
O111	3	7	233%	O2	4	7	175%	O66	4	7	175%
O112	6	8	133%	O20	8	10	125%	O67	3	0	0%
O113	7	10	143%	O21	3	3	100%	O68	0	0	0%
O114	3	4	133%	O22	6	4	67%	O69	4	0	0%
O115	2	2	100%	O24	15	17	113%	O7	8	0	0%
O116	5	8	160%	O25	11	13	118%	O70	4	5	125%
O117	3	3	100%	O26	0	0	0%	O71	12	10	83%
O118	4	7	175%	O27	6	5	83%	O72	17	3	18%
O119	0	0	0%	O28	6	6	100%	O73	14	13	93%
O12	3	3	100%	O29	6	6	100%	O74	6	4	67%
O120	21	23	110%	O3	2	6	300%	O75	0	6	100%
O121	4	8	200%	O30	8	6	75%	O76	0	0	0%
O122	9	11	122%	O31	5	2	40%	O77	6	6	100%
O123	14	23	164%	O32	11	8	73%	O78	0	4	100%
O124	8	2	25%	O33	16	14	88%	O79	16	8	50%
O125	6	8	133%	O34	5	5	100%	O8	5	4	80%
O126	7	13	186%	O35	3	1	33%	O81	1	1	100%
O127	9	12	133%	O36	0	3	100%	O82	6	4	67%
O128	3	2	67%	O37	0	0	0%	O83	3	2	67%
O129	2	4	200%	O38	0	7	100%	O84	6	5	83%
O13	5	0	0%	O39	0	0	0%	O85	1	0	0%
O130	6	8	133%	O4	0	4	100%	O86	5	1	20%
O131	7	4	57%	O40	18	19	106%	O89	17	19	112%
O132	11	12	109%	O41	0	0	0%	O9	9	11	122%
O133	16	16	100%	O42	0	0	0%	O90	0	0	0%
O134	5	5	100%	O43	6	6	100%	O91	2	3	150%
O135	5	1	20%	O44	12	0	0%	O92	3	3	100%
O136	5	6	120%	O45	10	5	50%	O93	5	5	100%
O137	4	1	25%	O46	2	0	0%	O94	4	6	150%
O138	3	0	0%	O47	4	3	75%	O95	4	4	100%
O139	14	14	100%	O48	5	0	0%	O96	2	0	0%
O14	0	0	0%	O49	6	13	217%	O97	5	5	100%
O140	7	1	14%	O5	5	4	80%	O98	4	4	100%
O141	0	2	100%	O50	6	4	67%	O99	6	11	183%
O142	0	1	100%	O51	2	0	0%	**Total**	**861**	**807**	**94%**

Table 3: November 5, 2022, 6:00 PM Off-Street Parking Inventory and Occupancy

ID **	Address	Spaces	Parked Cars	% Use
L3	2913 Main St	64	53	83%
G25	2617 Gaston Ave	18	7	39%
G4	2550 Pacific Ave	472	2	0%
G99	2900 Canton St	77	25	32%
L15	111S Hall St	62	57	92%
L17	3016 Elm St	25	22	88%
L20	2625 Commerce	73	73	100%
L22	2513 Main St	124	40	32%
L23	2516 Miranda St	50	44	88%
L24	2711 Commerce	51	13	25%
L27	2900 Canton St	88	38	43%
L28	2623 Main St	25	19	76%
L29	2628 Elm St	29	18	62%
L32	2806 Main St	13	14	108%
L33	2619 Floyd St	35	10	29%
L36	3021 Canton St	36	10	28%
L37	2767 Elm St	18	15	83%
L38	2708 Elm St	10	9	90%
L42	2905 Elm St	20	20	100%
L44	3001 - 3007 Elm St	65	5	8%
L48	2711 Indiana St	154	6	4%
L49^	2625 Elm St	160	24	15%
L5	2928 Elm St	22	10	45%
L57	2811 Commerce	18	17	94%
L6	2819 Elm St	15	16	107%
L64	208 Malcolm X	14	14	100%
L75	2905 Main St	79	74	94%
L77	2627 Main St	20	18	90%
L79	2611 Canton St	88	87	99%
L8	300 N Malcolm X	51	15	29%
L80	101 S Good Latimer	150	86	57%
L81	2505 Main St	50	4	8%
L82	2927-31 Elm St	20	0	0%
L9	2820 Indiana St	68	69	101%
Total		**2266**	**934**	**41%**

***The Stack and Epic II are not included.*

^Luna Uplift Lot managed by Trees on weekends as public parking.

Table 4: November 5, 2022, 6:00 PM Total Parking Inventory and Occupancy

Number of Spaces	Total Parked	Percentage Occupancy
3,127	1,741	56%

Figure 1: November 5, 2022, 6:00 PM Deep Ellum Occupancy Map

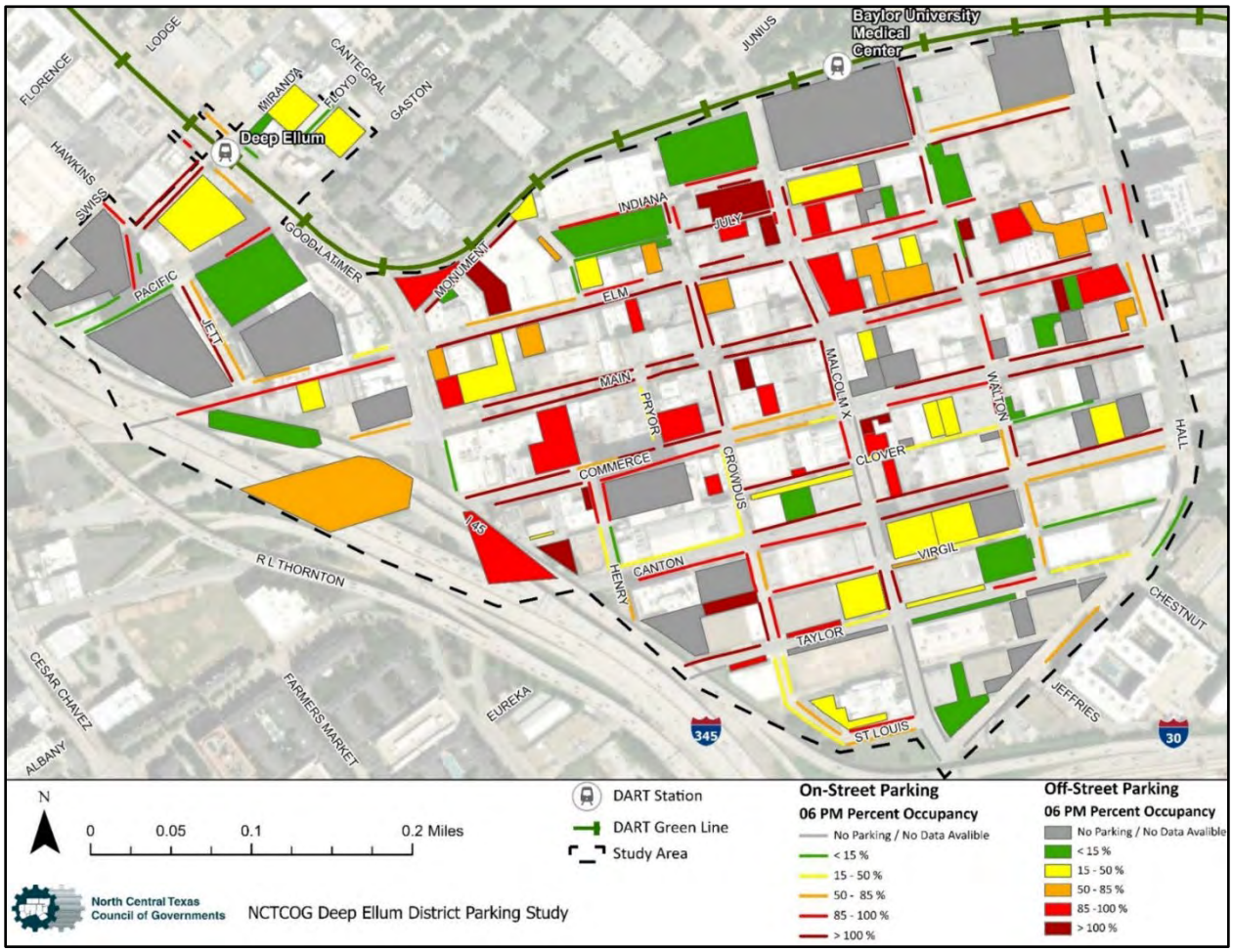


Table 5: November 5, 2022, 10:00 PM On-Street Parking Inventory and Occupancy

ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use
O0	8	3	38%	O143	5	0	0%	O52	10	6	60%
O1	4	1	25%	O144	5	0	0%	O53	16	1	6%
O10	4	5	125%	O145	0	3	100%	O54	12	11	92%
O100	9	11	122%	O146	10	1	10%	O55	6	12	200%
O101	9	12	133%	O147	0	8	100%	O56	7	0	0%
O102	4	5	125%	O149	6	7	117%	O57	10	1	10%
O103	10	14	140%	O15	0	11	100%	O58	3	2	67%
O104	7	11	157%	O150	0	3	100%	O59	4	4	100%
O105	7	9	129%	O151	3	4	133%	O6	6	7	117%
O106	9	10	111%	O152	0	5	100%	O60	3	3	100%
O107	7	10	143%	O153	2	4	200%	O61	3	0	0%
O108	4	4	100%	O16	7	7	100%	O62	12	9	75%
O109	3	7	233%	O17	22	24	109%	O63	7	7	100%
O11	4	5	125%	O18	0	0	0%	O64	3	1	33%
O110	0	11	100%	O19	20	17	85%	O65	10	12	120%
O111	3	4	133%	O2	4	2	50%	O66	4	6	150%
O112	6	10	167%	O20	8	10	125%	O67	3	0	0%
O113	7	11	157%	O21	3	2	67%	O68	0	0	0%
O114	3	3	100%	O22	6	4	67%	O69	4	0	0%
O115	2	2	100%	O24	15	9	60%	O7	8	0	0%
O116	5	13	260%	O25	11	13	118%	O70	4	7	175%
O117	3	3	100%	O26	0	0	0%	O71	12	10	83%
O118	4	9	225%	O27	6	4	67%	O72	17	6	35%
O119	0	0	0%	O28	6	6	100%	O73	14	16	114%
O12	3	3	100%	O29	6	8	133%	O74	6	5	83%
O120	21	24	114%	O3	2	1	50%	O75	0	9	100%
O121	4	8	200%	O30	8	2	25%	O76	0	0	0%
O122	9	9	100%	O31	5	5	100%	O77	6	6	100%
O123	14	20	143%	O32	11	6	55%	O78	0	4	100%
O124	8	6	75%	O33	16	17	106%	O79	16	11	69%
O125	6	8	133%	O34	5	1	20%	O8	5	4	80%
O126	7	12	171%	O35	3	1	33%	O81	1	1	100%
O127	9	10	111%	O36	0	4	100%	O82	6	6	100%
O128	3	5	167%	O37	0	0	0%	O83	3	3	100%
O129	2	4	200%	O38	0	5	100%	O84	6	6	100%
O13	5	0	0%	O39	0	0	0%	O85	1	1	100%
O130	6	8	133%	O4	0	4	100%	O86	5	2	40%
O131	7	4	57%	O40	18	19	106%	O89	17	20	118%
O132	11	15	136%	O41	0	0	0%	O9	9	15	167%
O133	16	18	113%	O42	0	0	0%	O90	0	0	0%
O134	5	4	80%	O43	6	6	100%	O91	2	3	150%
O135	5	0	0%	O44	12	0	0%	O92	3	2	67%
O136	5	7	140%	O45	10	8	80%	O93	5	5	100%
O137	4	1	25%	O46	2	0	0%	O94	4	6	150%
O138	3	0	0%	O47	4	5	125%	O95	4	7	175%
O139	14	14	100%	O48	5	0	0%	O96	2	1	50%
O14	0	7	100%	O49	6	20	333%	O97	5	5	100%
O140	7	2	29%	O5	5	5	100%	O98	4	4	100%
O141	0	3	100%	O50	6	5	83%	O99	6	10	167%
O142	0	2	100%	O51	2	0	0%	**Total**	**861**	**890**	**103%**

Table 6: November 5, 2022, 10:00 PM Off-Street Parking Inventory and Occupancy

ID **	Address	Spaces	Parked Cars	% Use
L3	2913 Main St	64	51	80%
G4	2550 Pacific Ave	472	6	1%
L5	2928 Elm St	22	16	73%
L6	2819 Elm St	15	19	127%
L8	300 N Malcolm X	51	40	78%
L9	2820 Indiana St	68	70	103%
L15	111S Hall St	62	51	82%
L17	3016 Elm St	25	18	72%
L20	2625 Commerce	73	71	97%
L22	2513 Main St	124	96	77%
L23	2516 Miranda St	50	44	88%
L24	2711 Commerce	51	39	75%
G25	2617 Gaston Ave	18	13	72%
L27	2900 Canton St	88	53	60%
L28	2623 Main St	25	24	96%
L29	2628 Elm St	29	20	69%
L32	2806 Main St	13	14	108%
L33	2619 Floyd St	35	15	43%
L36	3021 Canton St	36	27	75%
L37	2767 Elm St	18	17	94%
L38	2708 Elm St	10	10	100%
L42	2905 Elm St	22	24	109%
L44	3001 - 3007 Elm St	65	29	45%
L48	2711 Indiana St	154	79	51%
L49^	2625 Elm St	35	15	43%
L57	2811 Commerce	18	14	78%
L64	208 Malcolm X	14	11	79%
L75	2905 Main St	79	80	101%
L77	2627 Main St	20	19	95%
L79	2611 Canton St	88	88	100%
L80	101 S Good Latimer	150	150	100%
L81	2505 Main St	50	48	96%
L82	2927-31 Elm St	20	3	15%
G99	2900 Canton St	77	37	48%
Total		**2266**	**1348**	**59%**

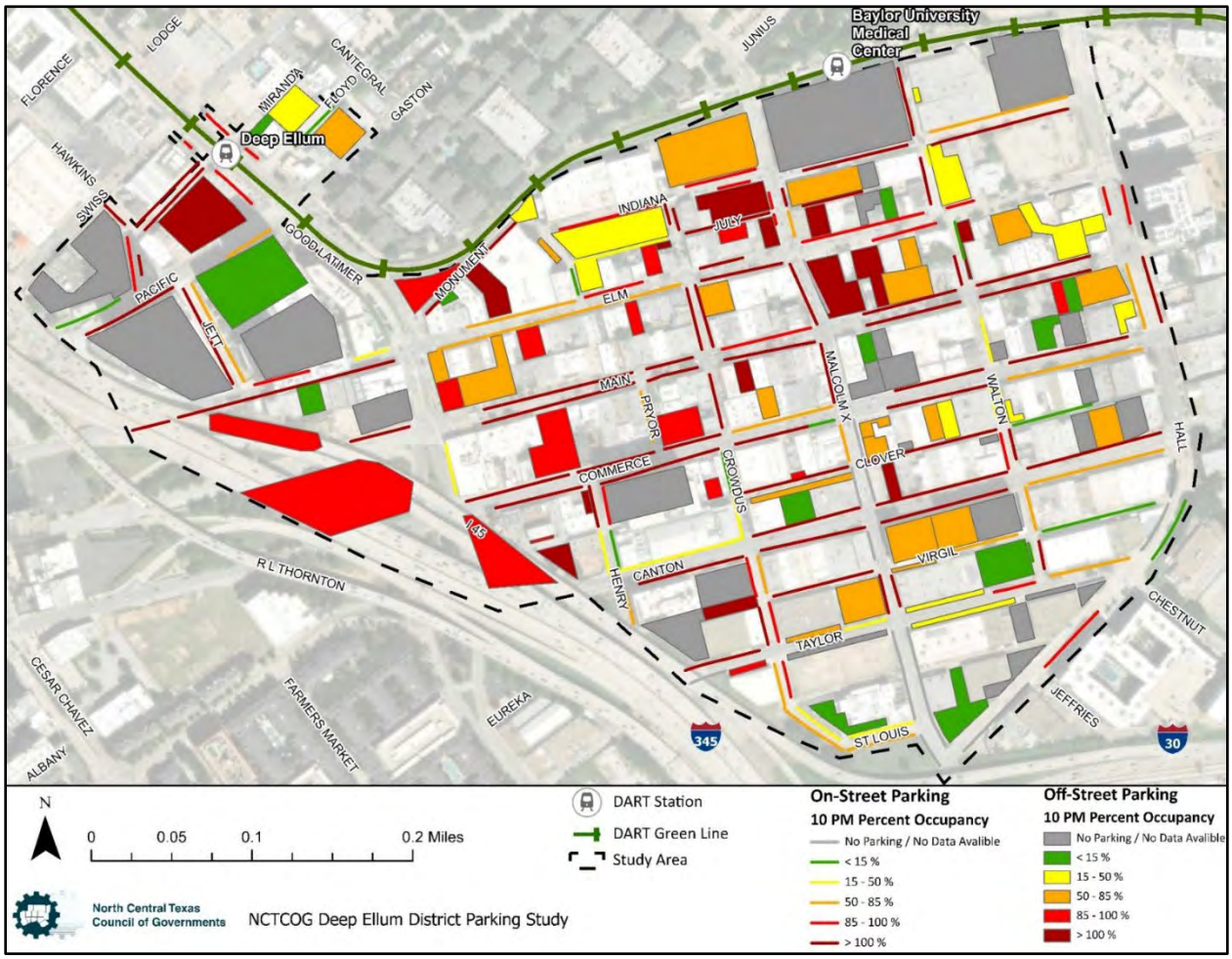
***The Stack and Epic II are not included*

^Luna Uplift Lot managed by Trees on weekends as public parking.

Table 7: November 5, 2022, 10:00 PM Total Parking Inventory and Occupancy

Number of Spaces**	Total Parked	Percentage Occupancy
3,127	**2,238**	**72%**

Figure 2: November 5, 2022, 10:00 PM Deep Ellum Occupancy Map



Wednesday, June 14, 2023, Inventory and Occupancy Data

Table 8: June 14, 2023, 12:00 PM On-Street Parking Inventory and Occupancy

ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use
O0	8	1	13%	O143	5	0	0%	O104	7	12	171%
O1	4	4	100%	O144	5	1	0%	O105	7	7	100%
O10	4	1	25%	O145	0	0	13%	O106	9	3	33%
O100	9	9	100%	O146	10	0	50%	O107	7	0	0%
O101	9	7	78%	O149	6	0	17%	O108	4	0	0%
O102	4	3	75%	O15	0	4	0%	O109	3	4	133%
O103	10	8	80%	O150	0	0	100%	O110	0	4	100%
O104	7	12	171%	O151	3	0	33%	O111	3	2	67%
O105	7	7	100%	O152	0	0	100%	O112	6	5	83%
O106	9	3	33%	O153	2	0	0%	O113	7	6	86%
O107	7	0	0%	O16	7	10	33%	O114	3	0	0%
O108	4	0	0%	O17	22	22	42%	O115	2	0	0%
O109	3	4	133%	O18	0	0	43%	O116	5	0	0%
O11	4	0	0%	O19	20	13	33%	O117	3	0	0%
O110	0	4	100%	O2	4	4	90%	O118	4	3	75%
O111	3	2	67%	O20	8	1	100%	O119	0	0	0%
O112	6	5	83%	O21	3	3	0%	O120	21	16	76%
O113	7	6	86%	O22	6	1	0%	O121	4	6	150%
O114	3	0	0%	O24	15	16	50%	O122	9	8	89%
O115	2	0	0%	O25	11	0	0%	O123	14	13	93%
O116	5	0	0%	O26	0	0	92%	O124	8	2	25%
O117	3	0	0%	O27	6	0	24%	O125	6	7	117%
O118	4	3	75%	O28	6	0	29%	O126	7	8	114%
O119	0	0	0%	O29	6	0	50%	O127	9	7	78%
O12	3	0	0%	O3	2	2	0%	O128	3	2	67%
O120	21	16	76%	O30	8	0	0%	O129	2	1	50%
O121	4	6	150%	O31	5	0	33%	O130	6	4	67%
O122	9	8	89%	O32	11	10	100%	O131	7	3	43%
O123	14	13	93%	O33	16	3	50%	O132	11	6	55%
O124	8	2	25%	O34	5	5	0%	O133	16	14	88%
O125	6	7	117%	O35	3	0	67%	O134	5	2	40%
O126	7	8	114%	O36	0	0	33%	O135	5	0	0%
O127	9	7	78%	O37	0	0	100%	O136	5	0	0%
O128	3	2	67%	O38	0	0	0%	O137	4	0	0%
O129	2	1	50%	O39	0	0	0%	O138	3	0	0%
O13	5	2	40%	O4	0	0	71%	O139	14	4	29%
O130	6	4	67%	O40	18	10	0%	O140	7	0	0%
O131	7	3	43%	O41	0	0	0%	O141	0	0	0%
O132	11	6	55%	O42	0	0	67%	O142	0	0	0%
O133	16	14	88%	O43	6	0	80%	O143	5	0	0%
O134	5	2	40%	O44	12	2	25%	O144	5	1	20%
O135	5	0	0%	O45	10	1	25%	O145	0	0	0%
O136	5	0	0%	O46	2	0	0%	O146	10	0	0%
O137	4	0	0%	O47	4	0	60%	O149	6	0	0%
O138	3	0	0%	O48	5	0	50%	O153	2	0	0%
O139	14	4	29%	O49	6	5	100%	O150	0	0	0%
O14	0	0	0%	O5	5	5	100%	O151	3	0	0%
O140	7	0	0%	O50	6	4	78%	O152	0	0	0%
O141	0	0	0%	O143	5	0	75%	**Total**	**861**	**454**	**53%**
O142	0	0	0%	O144	5	1	80%				

Table 9: June 14, 2023, 12:00 PM Off-Street Parking Inventory and Occupancy

ID *	Address	Spaces	Parked Cars	% Use
L3	2913 Main St	64	6	9%
G4	2550 Pacific Ave	472	129	27%
L5	2928 Elm St	22	4	18%
L6	2819 Elm St	15	3	20%
L8	300 N Malcolm X	51	0	0%
L9	2820 Indiana St	68	3	4%
L15	111S Hall St	62	1	2%
L17	3016 Elm St	25	13	52%
G19	2700 Commerce St	639	236	37%
L20	2625 Commerce	73	3	4%
L21	2513 Main St	64	1	2%
L22	2513 Main St	124	32	26%
L23	2516 Miranda St	50	4	8%
L24	2711 Commerce	51	0	0%
G25	2617 Gaston Ave	18	13	72%
L27	2900 Canton St	88	7	8%
L28	2623 Main St	25	0	0%
L29	2628 Elm St	29	0	0%
L32	2806 Main St	13	0	0%
L33	2619 Floyd St	35	0	0%
G35	2500 Pacific Ave	873	21	2%
L36	3021 Canton St	36	1	3%
L37	2767 Elm St	18	1	6%
L38	2708 Elm St	10	0	0%
L42	2905 Elm St	22	2	9%
L44	3001 - 3007 Elm St	65	0	0%
L48	2711 Indiana St	154	1	1%
L57	2811 Commerce	18	3	17%
L64	208 Malcolm X	14	3	21%
L75	2905 Main St	79	3	4%
L77	2627 Main St	20	1	5%
L79	2611 Canton St	88	8	9%
L80	101 S Good Latimer	150	2	1%
L81	2505 Main St	50	3	6%
L82	2927-31 Elm St	20	0	0%
G99	2900 Canton St	77	29	38%
L102	2424 Swiss Ave	162	2	1%
Total		3844	535	14%

**Luna Uplift Lot and lots managed by Trees are not included in the 10 AM count.*

Lot at 2809 Canton St not included as discovered during data collection on 6/14/2023.

Table 10: June 14, 2023, 12:00 PM Total Parking Inventory and Occupancy

Number of Spaces	Total Parked	Percentage Occupancy
4705	**989**	**21%**

Figure 3: June 14, 2023, 10:00 AM Deep Ellum Occupancy Map

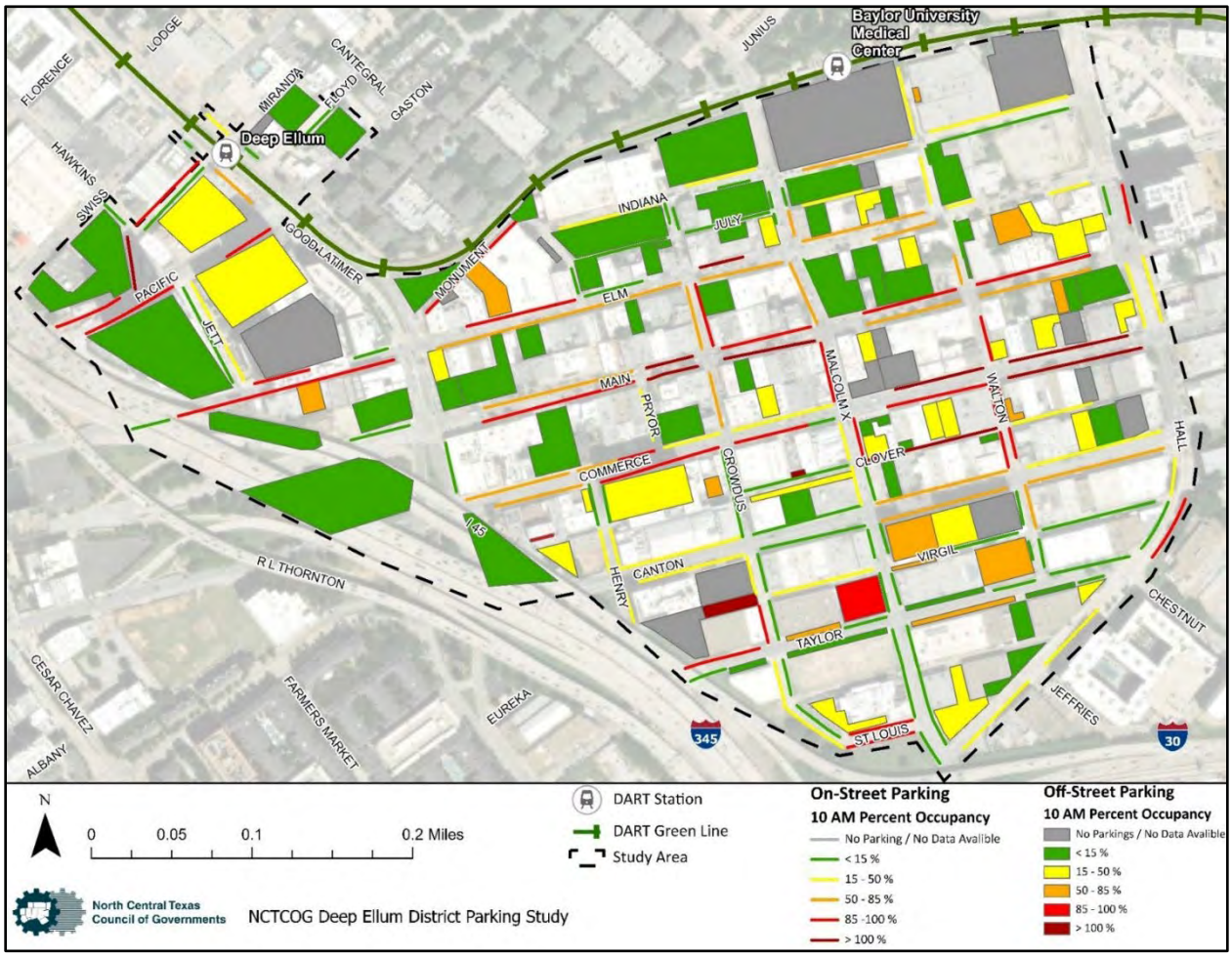


Table 11: June 14, 2023, 12:00 PM On-Street Parking Inventory and Occupancy

ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use
O0	8	4	50%	O51	2	0	0%	O104	7	12	171%
O1	4	3	75%	O52	10	0	0%	O105	7	8	114%
O2	4	7	175%	O53	16	0	0%	O106	9	3	33%
O3	2	2	100%	O54	12	7	58%	O107	7	0	0%
O4	0	0	0%	O55	6	2	33%	O108	4	5	125%
O5	5	5	100%	O56	7	0	0%	O109	3	7	233%
O6	6	4	67%	O57	10	8	80%	O110	0	3	100%
O7	8	2	25%	O58	3	2	67%	O111	3	3	100%
O8	5	3	60%	O59	4	3	75%	O112	6	8	133%
O9	9	10	111%	O60	3	0	0%	O113	7	10	143%
O10	4	0	0%	O61	3	0	0%	O114	3	2	67%
O11	4	3	75%	O62	12	5	42%	O115	2	2	100%
O12	3	2	67%	O63	7	5	71%	O116	5	1	20%
O13	5	3	60%	O64	3	4	133%	O117	3	1	33%
O14	0	0	0%	O65	10	8	80%	O118	4	7	175%
O15	0	7	100%	O66	4	5	125%	O119	0	0	0%
O16	7	9	129%	O67	3	0	0%	O120	21	19	90%
O17	22	26	118%	O68	0	0	0%	O121	4	6	150%
O18	0	0	0%	O69	4	2	50%	O122	9	9	100%
O19	20	18	90%	O70	4	0	0%	O123	14	13	93%
O20	8	1	13%	O71	12	10	83%	O124	8	3	38%
O21	3	3	100%	O72	17	5	29%	O125	6	7	117%
O22	6	0	0%	O73	14	2	14%	O126	7	7	100%
O24	15	16	107%	O74	6	2	33%	O127	9	9	100%
O25	11	8	73%	O75	0	0	0%	O128	3	3	100%
O26	0	0	0%	O76	0	0	0%	O129	2	3	150%
O27	6	3	50%	O77	6	3	50%	O130	6	6	100%
O28	6	1	17%	O78	0	2	100%	O131	7	8	114%
O29	6	0	0%	O79	16	8	50%	O132	11	5	45%
O30	8	2	25%	O81	1	1	100%	O133	16	15	94%
O31	5	0	0%	O82	6	5	83%	O134	5	1	20%
O32	11	9	82%	O83	3	0	0%	O135	5	5	100%
O33	16	3	19%	O84	6	6	100%	O136	5	4	80%
O34	5	5	100%	O85	1	2	200%	O137	4	4	100%
O35	3	0	0%	O86	5	0	0%	O138	3	2	67%
O36	0	0	0%	O89	17	12	71%	O139	14	3	21%
O37	0	6	100%	O90	0	0	0%	O140	7	0	0%
O38	0	0	0%	O91	2	1	50%	O141	0	0	0%
O39	0	0	0%	O92	3	3	100%	O142	0	0	0%
O40	18	12	67%	O93	5	4	80%	O143	5	6	120%
O41	0	0	0%	O94	4	3	75%	O144	5	1	20%
O42	0	0	0%	O95	4	1	25%	O145	0	0	0%
O43	6	0	0%	O96	2	0	0%	O146	10	3	30%
O44	12	3	25%	O97	5	4	80%	O149	6	0	0%
O45	10	3	30%	O98	4	4	100%	O153	2	0	0%
O46	2	0	0%	O99	6	7	117%	O150	0	0	0%
O47	4	0	0%	O100	9	8	89%	O151	3	0	0%
O48	5	0	0%	O101	9	8	89%	O152	0	0	0%
O49	6	4	67%	O102	4	7	175%	**Total**	**861**	**573**	**67%**
O50	6	4	67%	O103	10	9	90%				

Table 12: June 14, 2023, 12:00 PM Off-Street Parking Inventory and Occupancy

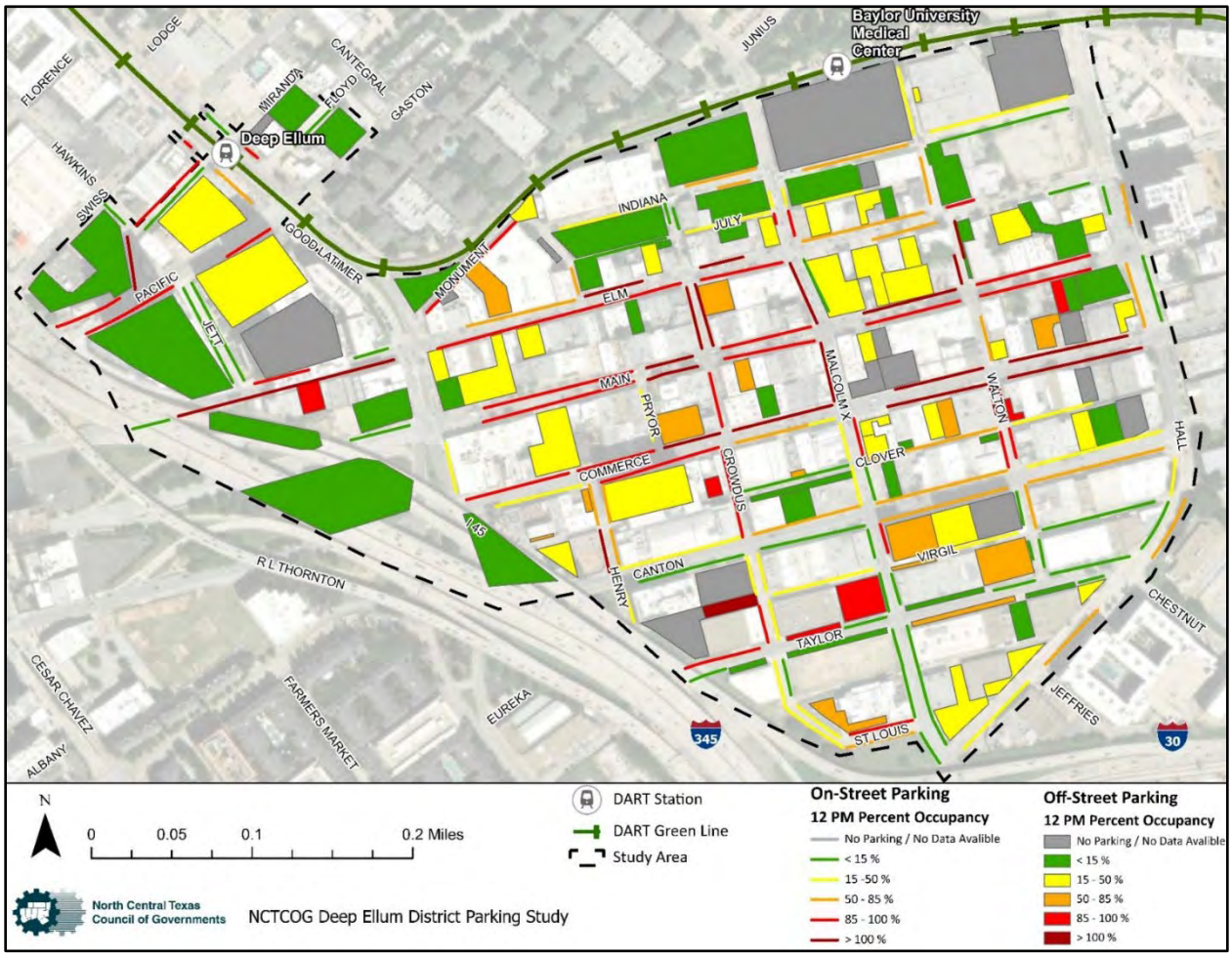
ID *	Address	Spaces	Parked Cars	% Use
L3	2913 Main St	64	26	41%
G4	2550 Pacific Ave	472	144	31%
L5	2928 Elm St	22	6	27%
L6	2819 Elm St	15	6	40%
L8	300 N Malcolm X	51	0	0%
L9	2820 Indiana St	68	2	3%
L15	111S Hall St	62	3	5%
L17	3016 Elm St	25	12	48%
G19	2700 Commerce St	639	228	36%
L20	2625 Commerce	73	34	47%
L21	2513 Main St	64	3	5%
L22	2513 Main St	124	23	19%
L23	2516 Miranda St	50	35	70%
L24	2711 Commerce	51	0	0%
G25	2617 Gaston Ave	18	10	56%
L27	2900 Canton St	88	17	19%
L28	2623 Main St	25	5	20%
L29	2628 Elm St	29	16	55%
L32	2806 Main St	13	9	69%
L33	2619 Floyd St	35	2	6%
G35	2500 Pacific Ave	873	17	2%
L36	3021 Canton St	36	0	0%
L37	2767 Elm St	18	4	22%
L38	2708 Elm St	10	1	10%
L42	2905 Elm St	22	7	32%
L44	3001 - 3007 Elm St	65	0	0%
L48	2711 Indiana St	154	0	0%
L57	2811 Commerce	18	2	11%
L64	208 Malcolm X	14	4	29%
L75	2905 Main St	79	20	25%
L77	2627 Main St	20	3	15%
L79	2611 Canton St	88	11	13%
L80	101 S Good Latimer	150	4	3%
L81	2505 Main St	50	5	10%
L82	2927-31 Elm St	20	0	0%
G99	2900 Canton St	77	26	34%
L102	2424 Swiss Ave	162	1	1%
Total		3844	686	18%

**Luna Uplift Lot and lots managed by Trees are not included in noon count.*
Lot at 2809 Canton St. not included as discovered during data collection on 6/14/2023.

Table 13: June 14, 2023, 12:00 PM Total Parking Inventory and Occupancy

Number of Spaces	Total Parked	Percentage Occupancy
4705	**1256**	**27%**

Figure 4: June 14, 2023, 12:00 PM Deep Ellum Occupancy Map



Saturday, June 17, 2023, Inventory and Occupancy Data

Table 14: June 17, 2023, 6:00 PM On-Street Parking Inventory and Occupancy

ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use
O0	8	8	100%	O51	2	0	0%	O104	7	12	171%
O1	4	8	200%	O52	10	1	10%	O105	7	11	157%
O2	4	7	175%	O53	16	0	0%	O106	9	10	111%
O3	2	6	300%	O54	12	10	83%	O107	7	9	129%
O4	0	7	100%	O55	6	6	100%	O108	4	4	100%
O5	5	8	160%	O56	7	0	0%	O109	3	6	200%
O6	6	7	117%	O57	10	0	0%	O110	0	9	100%
O7	8	3	38%	O58	3	3	100%	O111	3	4	133%
O8	5	2	40%	O59	4	4	100%	O112	6	2	33%
O9	9	11	122%	O60	3	5	167%	O113	7	2	29%
O10	4	3	75%	O61	3	0	0%	O114	3	3	100%
O11	4	4	100%	O62	12	9	75%	O115	2	2	100%
O12	3	3	100%	O63	7	8	114%	O116	5	14	280%
O13	5	4	80%	O64	3	4	133%	O117	3	1	33%
O14	0	0	0%	O65	10	8	80%	O118	4	8	200%
O15	0	16	100%	O66	4	6	150%	O119	0	14	100%
O16	7	15	214%	O67	3	0	0%	O120	21	3	14%
O17	22	28	127%	O68	0	0	0%	O121	4	0	0%
O18	0	0	0%	O69	4	4	100%	O122	9	11	122%
O19	20	0	0%	O70	4	6	150%	O123	14	0	0%
O20	8	3	38%	O71	12	11	92%	O124	8	2	25%
O21	3	0	0%	O72	17	12	71%	O125	6	0	0%
O22	6	3	50%	O73	14	13	93%	O126	7	10	143%
O24	15	17	113%	O74	6	7	117%	O127	9	10	111%
O25	11	12	109%	O75	0	5	100%	O128	3	2	67%
O26	0	0	0%	O76	0	0	0%	O129	2	5	250%
O27	6	5	83%	O77	6	6	100%	O130	6	9	150%
O28	6	5	83%	O78	0	3	100%	O131	7	11	157%
O29	6	6	100%	O79	16	12	75%	O132	11	12	109%
O30	8	3	38%	O81	1	1	100%	O133	16	20	125%
O31	5	4	80%	O82	6	5	83%	O134	5	6	120%
O32	11	8	73%	O83	3	3	100%	O135	5	4	80%
O33	16	7	44%	O84	6	6	100%	O136	5	5	100%
O34	5	3	60%	O85	1	1	100%	O137	4	6	150%
O35	3	0	0%	O86	5	3	60%	O138	3	1	33%
O36	0	5	100%	O89	17	16	94%	O139	14	14	100%
O37	0	0	0%	O90	0	0	0%	O140	7	2	29%
O38	0	5	100%	O91	2	2	100%	O141	0	2	100%
O39	0	0	0%	O92	3	3	100%	O142	0	0	0%
O40	18	10	56%	O93	5	5	100%	O143	5	4	80%
O41	0	0	0%	O94	4	7	175%	O144	5	0	0%
O42	0	0	0%	O95	4	1	25%	O145	0	6	100%
O43	6	6	100%	O96	2	0	0%	O146	10	5	50%
O44	12	0	0%	O97	5	5	100%	O149	6	0	0%
O45	10	11	110%	O98	4	4	100%	O153	2	0	0%
O46	2	0	0%	O99	6	10	167%	O150	0	0	0%
O47	4	0	0%	O100	9	10	111%	O151	3	0	0%
O48	5	0	0%	O101	9	12	133%	O152	0	0	0%
O49	6	15	250%	O102	4	5	125%	**Total**	**861**	**785**	**91%**
O50	6	3	50%	O103	10	11	110%				

Table 15: June 17, 2023, 6:00 PM Off-Street Parking Inventory and Occupancy

ID	Address	Spaces	Parked Cars	% Use
L3	2913 Main St	64	42	66%
G4	2550 Pacific Ave	472	122	26%
L5	2928 Elm St	22	11	50%
L6	2819 Elm St	15	15	100%
L8	300 N Malcolm X	51	17	33%
L9	2820 Indiana St	68	53	78%
L15	111 S Hall St	62	65	105%
L17	3016 Elm St	25	17	68%
G19	2700 Commerce St	639	161	25%
L20	2625 Commerce	73	0	0%
L21	2513 Main St	64	40	63%
L22	2513 Main St	124	108	87%
L23	2516 Miranda St	50	44	88%
L24	2711 Commerce	51	13	25%
G25	2617 Gaston Ave	18	9	50%
L27	2900 Canton St	88	0	0%
L28	2623 Main St	25	16	64%
L29	2628 Elm St	29	30	103%
L32	2806 Main St	13	16	123%
L33	2619 Floyd St	35	12	34%
G35	2500 Pacific Ave	873	1	0%
L36	3021 Canton St	36	4	11%
L37	2767 Elm St	18	11	61%
L38	2708 Elm St	10	10	100%
L42	2905 Elm St	22	22	100%
L44	3001 - 3007 Elm St	65	19	29%
L48	2711 Indiana St	154	98	64%
L49^	2625 Elm St	160	2	1%
L57	2811 Commerce	18	18	100%
L64	208 Malcolm X	14	14	100%
L75	2905 Main St	79	71	90%
L77	2627 Main St	20	18	90%
L79	2611 Canton St	88	85	97%
L80	101 S Good Latimer	150	80	53%
L81	2505 Main St	50	43	86%
L82	2927-31 Elm St	20	0	0%
G99	2900 Canton St	77	7	9%
L102	2424 Swiss Ave	162	68	42%
L103	2809 Canton St	36	28	78%
Total		**4040**	**1390**	**34%**

^Luna Uplift Lot managed by Trees on weekends as public parking.

Table 16: June 17, 2023, 6:00 PM Total Parking Inventory and Occupancy

Number of Spaces	Total Parked	Percentage Occupancy
4,901	**2,175**	**44%**

Figure 5: June 17, 2023, 6:00 PM Deep Ellum Occupancy Map

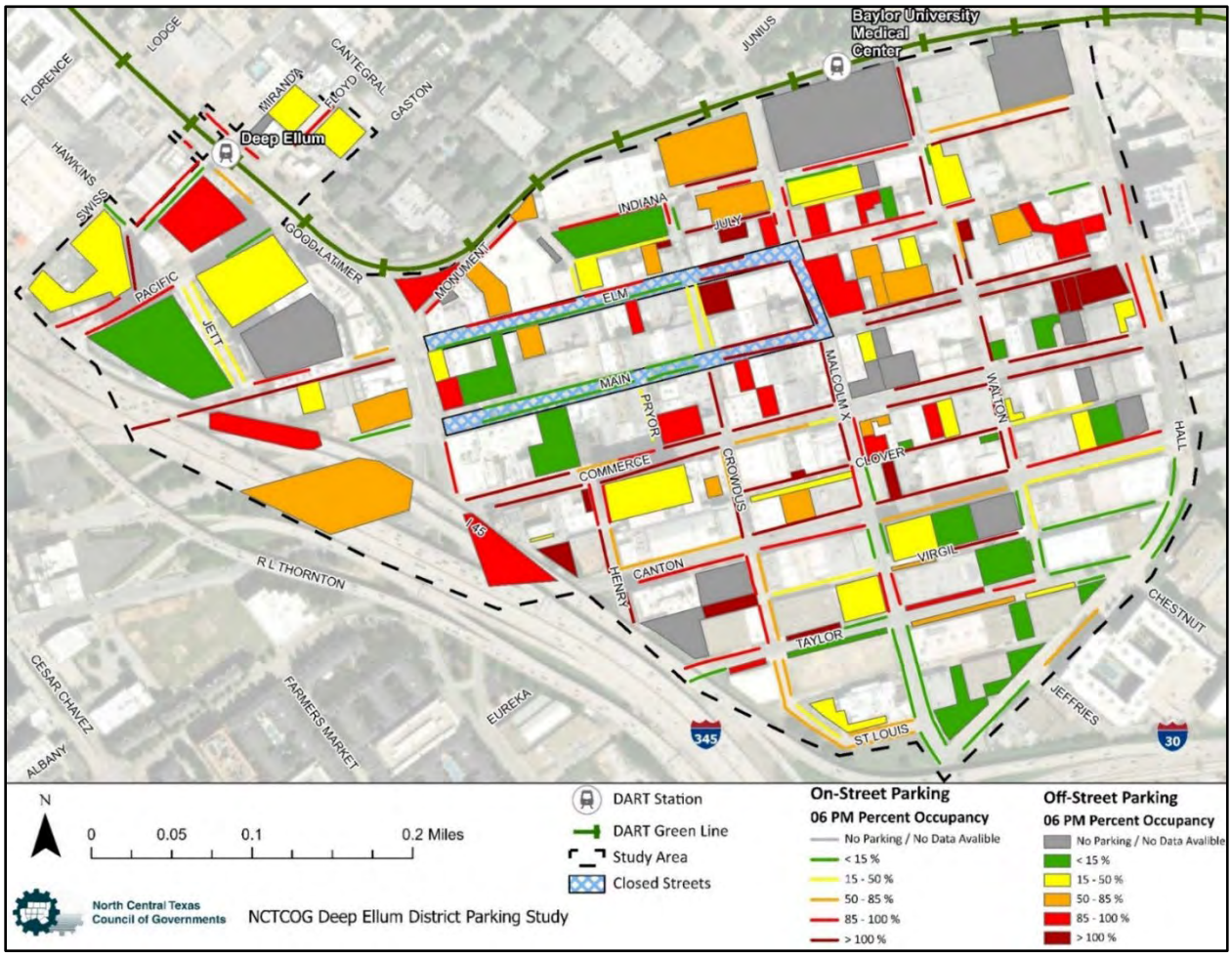


Table 17: June 17, 2023, 10:00 PM On-Street Parking Inventory and Occupancy

ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use	ID	Spaces	Parked Cars	% Use
O0	8	8	100%	O51	2	0	0%	O104	7	11	157%
O1	4	7	175%	O52	10	0	0%	O105	7	11	157%
O2	4	2	50%	O53	16	0	0%	O106	9	10	111%
O3	2	4	200%	O54	12	10	83%	O107	7	8	114%
O4	0	4	100%	O55	6	7	117%	O108	4	4	100%
O5	5	4	80%	O56	7	0	0%	O109	3	6	200%
O6	6	7	117%	O57	10	1	10%	O110	0	1	100%
O7	8	4	50%	O58	3	3	100%	O111	3	6	200%
O8	5	3	60%	O59	4	4	100%	O112	6	2	33%
O9	9	12	133%	O60	3	0	0%	O113	7	0	0%
O10	4	4	100%	O61	3	0	0%	O114	3	3	100%
O11	4	5	125%	O62	12	11	92%	O115	2	2	100%
O12	3	5	167%	O63	7	8	114%	O116	5	10	200%
O13	5	5	100%	O64	3	6	200%	O117	3	2	67%
O14	0	0	0%	O65	10	7	70%	O118	4	9	225%
O15	0	20	100%	O66	4	8	200%	O119	0	22	100%
O16	7	20	286%	O67	3	0	0%	O120	21	3	14%
O17	22	37	168%	O68	0	0	0%	O121	4	1	25%
O18	0	0	0%	O69	4	6	150%	O122	9	15	167%
O19	20	0	0%	O70	4	5	125%	O123	14	0	0%
O20	8	8	100%	O71	12	14	117%	O124	8	1	13%
O21	3	0	0%	O72	17	15	88%	O125	6	0	0%
O22	6	6	100%	O73	14	14	100%	O126	7	7	100%
O24	15	16	107%	O74	6	7	117%	O127	9	7	78%
O25	11	11	100%	O75	0	6	100%	O128	3	12	400%
O26	0	5	100%	O76	0	0	0%	O129	2	5	250%
O27	6	4	67%	O77	6	6	100%	O130	6	6	100%
O28	6	5	83%	O78	0	2	100%	O131	7	15	214%
O29	6	9	150%	O79	16	11	69%	O132	11	12	109%
O30	8	3	38%	O81	1	1	100%	O133	16	20	125%
O31	5	4	80%	O82	6	6	100%	O134	5	5	100%
O32	11	6	55%	O83	3	3	100%	O135	5	4	80%
O33	16	12	75%	O84	6	6	100%	O136	5	5	100%
O34	5	1	20%	O85	1	1	100%	O137	4	4	100%
O35	3	0	0%	O86	5	5	100%	O138	3	1	33%
O36	0	5	100%	O89	17	16	94%	O139	14	13	93%
O37	0	0	0%	O90	0	0	0%	O140	7	2	29%
O38	0	5	100%	O91	2	2	100%	O141	0	2	200%
O39	0	0	0%	O92	3	3	100%	O142	0	0	0%
O40	18	18	100%	O93	5	4	80%	O143	5	4	80%
O41	0	0	0%	O94	4	6	150%	O144	5	0	0%
O42	0	0	0%	O95	4	1	25%	O145	0	9	100%
O43	6	5	83%	O96	2	3	150%	O146	10	7	70%
O44	12	0	0%	O97	5	5	100%	O149	6	0	0%
O45	10	11	110%	O98	4	4	100%	O153	2	0	0%
O46	2	0	0%	O99	6	11	183%	O150	0	0	0%
O47	4	0	0%	O100	9	10	111%	O151	3	0	0%
O48	5	2	40%	O101	9	10	111%	O152	0	0	0%
O49	6	19	317%	O102	4	4	100%	**Total**	**861**	**842**	**98%**
O50	6	5	83%	O103	10	12	120%				

Table 18: June 17, 2023, 10:00 PM Off-Street Parking Inventory and Occupancy

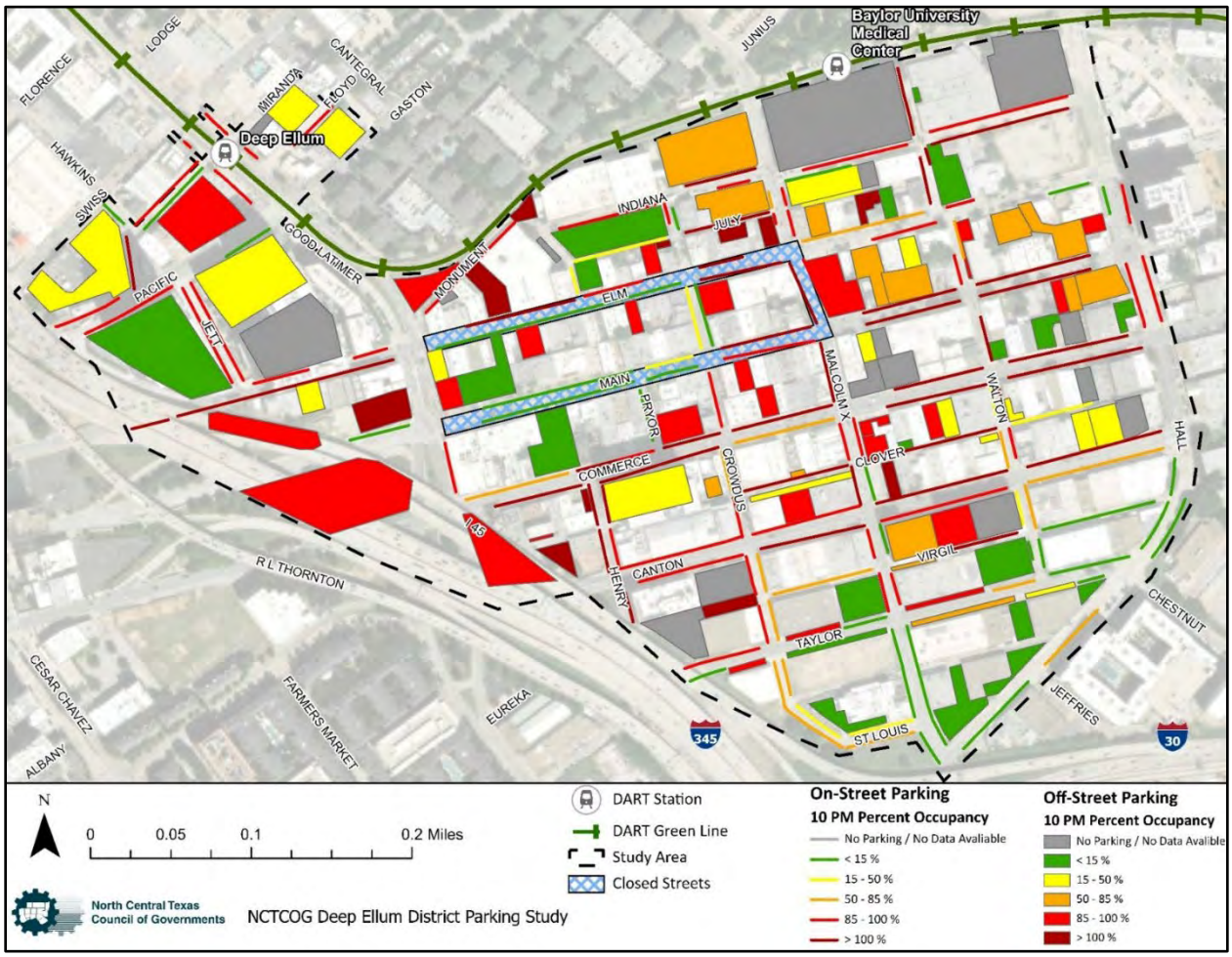
ID	Address	Spaces	Parked Cars	% Use
L3	2913 Main St	64	45	70%
G4	2550 Pacific Ave	472	119	25%
L5	2928 Elm St	22	11	50%
L6	2819 Elm St	15	16	107%
L8	300 N Malcolm X	51	17	33%
L9	2820 Indiana St	68	51	75%
L15	111S Hall St	62	36	58%
L17	3016 Elm St	25	19	76%
G19	2700 Commerce St	639	224	35%
L20	2625 Commerce	73	0	0%
L21	2513 Main St	64	67	105%
L22	2513 Main St	124	115	93%
L23	2516 Miranda St	50	43	86%
L24	2711 Commerce	51	16	31%
G25	2617 Gaston Ave	18	13	72%
L27	2900 Canton St	88	0	0%
L28	2623 Main St	25	24	96%
L29	2628 Elm St	29	26	90%
L32	2806 Main St	13	16	123%
L33	2619 Floyd St	35	13	37%
G35	2500 Pacific Ave	873	5	1%
L36	3021 Canton St	36	15	42%
L37	2767 Elm St	18	17	94%
L38	2708 Elm St	10	10	100%
L42	2905 Elm St	22	17	77%
L44	3001 - 3007 Elm St	65	9	14%
L48	2711 Indiana St	154	109	71%
L49^	2625 Elm St	160	22	14%
L57	2811 Commerce	18	18	100%
L64	208 Malcolm X	14	13	93%
L75	2905 Main St	79	78	99%
L77	2627 Main St	20	20	100%
L79	2611 Canton St	88	88	100%
L80	101 S Good Latimer	150	150	100%
L81	2505 Main St	50	30	60%
L82	2927-31 Elm St	20	0	0%
G99	2900 Canton St	77	77	100%
L102	2424 Swiss Ave	162	75	46%
L103	2809 Canton St	36	35	97%
Total		**4040**	**1659**	**41%**

^Luna Uplift Lot managed by Trees on weekends as public parking.

Table 19: June 17, 2023, 10:00 PM Total Parking Inventory and Occupancy

Number of Spaces	Total Parked	Percentage Occupancy
4901	**2501**	**51%**

Figure 6: June 17, 2023, 10:00 PM Deep Ellum Occupancy Map



Maps of Study On-Street and Off-Street Facility Identification Numbers

Figure 7: Off-Street Parking Lot/Garage Study Identification Number

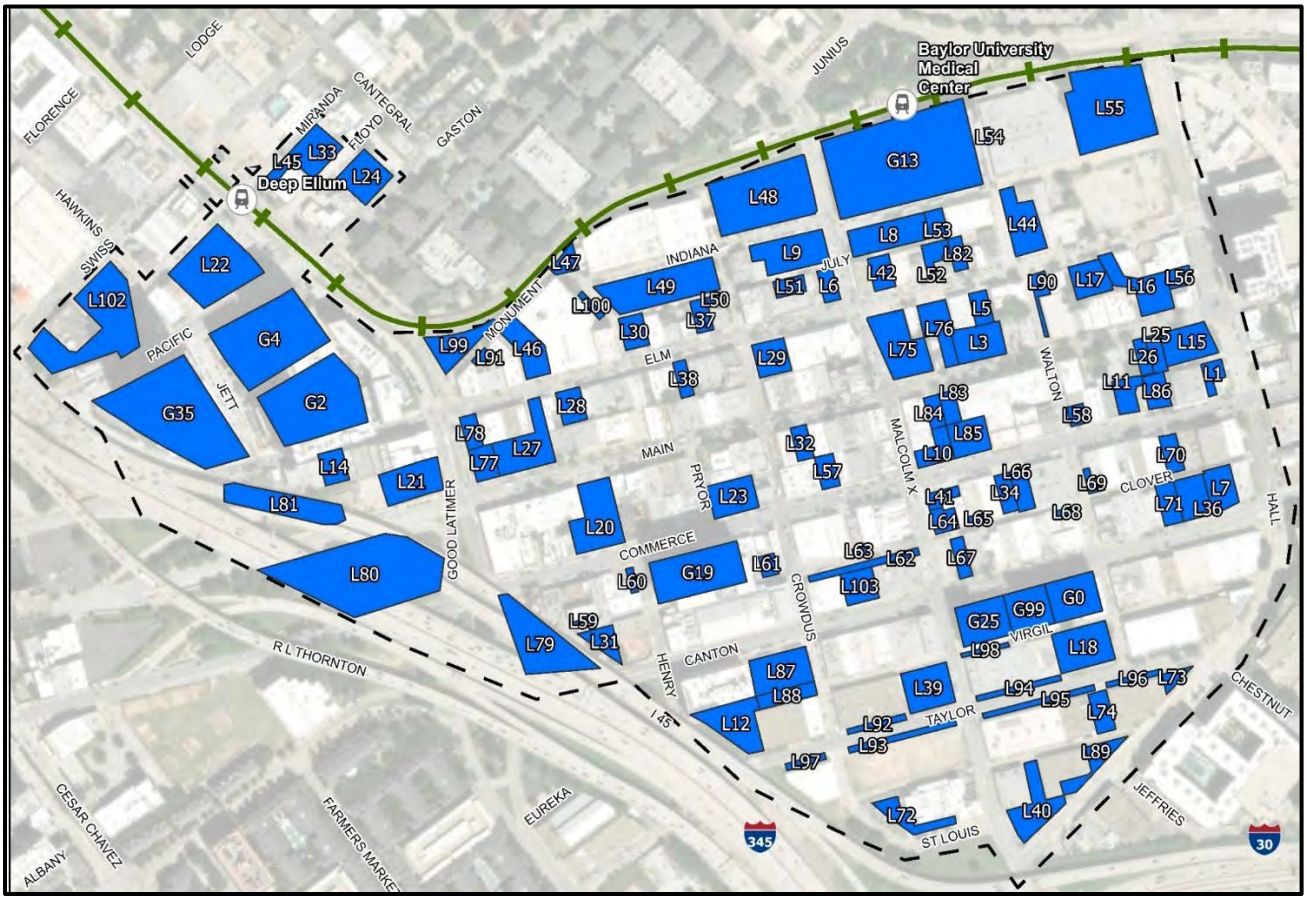


Figure 8: On-Street Parking ID Number

Parking Utilization Summaries by Day

Table 20: November 5, 2022, Deep Ellum Parking Utilization

Type of Parking*	Parking Spaces Available	Number of Parked Cars	Occupancy
Saturday 06:00 PM 11/05/2022			
Off-Street Parking**	2266	934	41%
On-Street Parking	861	807	94%
Unfilled		1386	
Total	3127	1741	56%
Saturday 10:00 PM 11/05/2022			
Off-Street Parking**	2266	1348	59%
On-Street Parking	861	890	103%
Unfilled		889	
Total	3127	2238	72%

**Public parking only (Luna Uplift Lot included) ** The Stack and Epic II are not included.*

Figure 9: Number of Parked Cars*

November 5, 2022, 6:00 PM

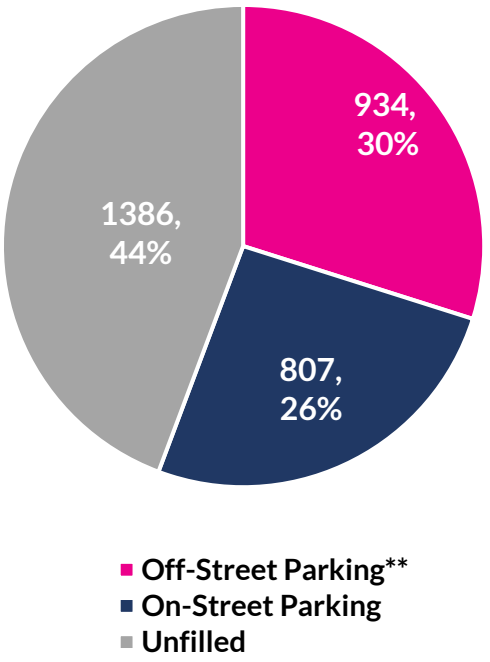


Figure 10: Number of Parked Cars*

November 5, 2022, 10:00 PM

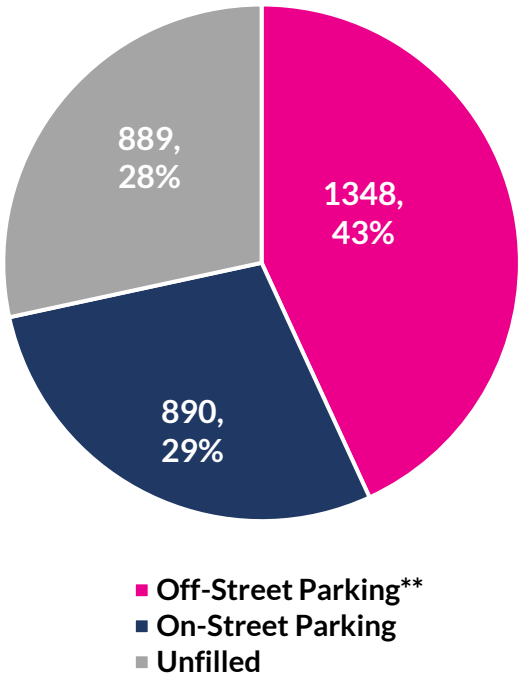


Table 21: June 14, 2023, Deep Ellum Public Parking Utilization

Type of Parking*	Parking Spaces Available	Number of Parked Cars	Occupancy
Wednesday 10:00 AM 06/14/2023			
Off-Street Parking	3844	535	14%
On-Street Parking	861	454	53%
Unfilled		3716	
Total	4705	989	21%
Wednesday 12:00 PM 06/14/2023			
Off-Street Parking	3844	686	18%
On-Street Parking	861	573	67%
Unfilled		3446	
Total	4705	1259	27%

**Public parking only (Luna Uplift included).*

Figure 11: Number of Parked Cars
June 14, 2023, 10:00 AM

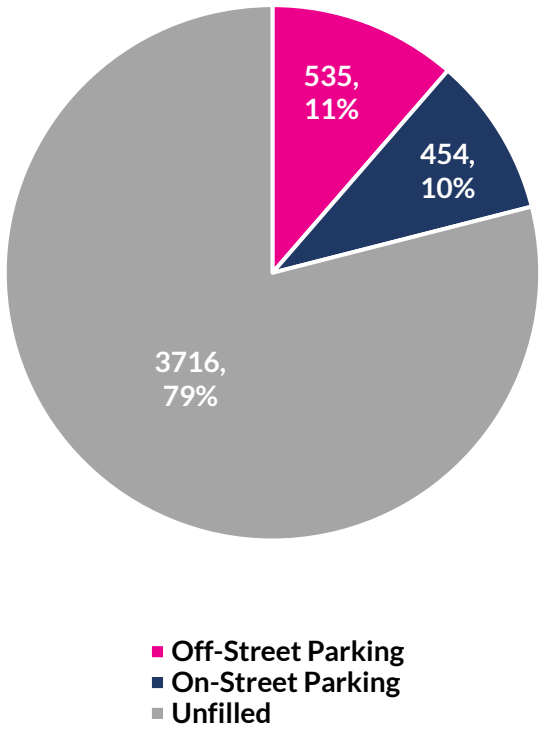


Figure 12: Number of Parked Cars
June 14, 2023, 12:00 PM

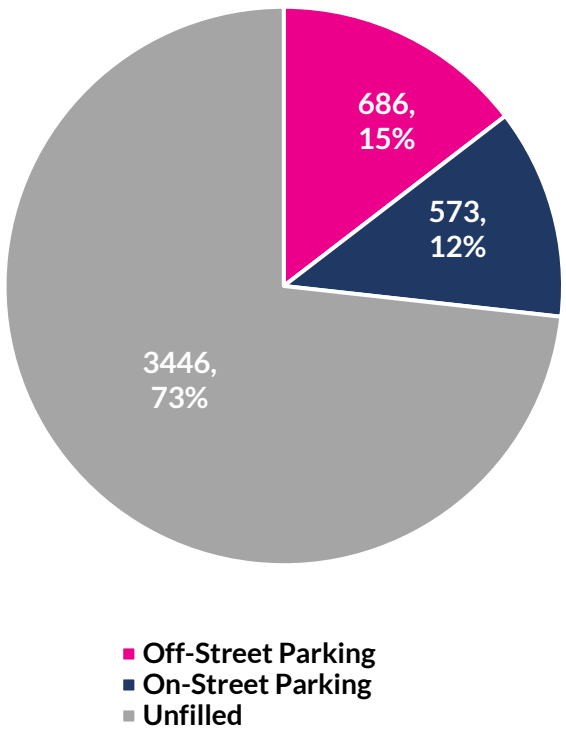


Table 22: June 17, 2023, Deep Ellum Public Parking Utilization

Type of Parking*	Parking Spaces Available	Number of Parked Cars	Occupancy
Saturday 06:00 PM 06/17/2023			
Off-Street Parking	4040	1390	34%
On-Street Parking	861	785	91%
Unfilled		2726	
Total	4901	2175	44%
Saturday 10:00 PM 06/17/2023			
Off-Street Parking	4040	1659	41%
On-Street Parking	861	842	98%
Unfilled		2400	
Total	4901	2501	51%

**Public parking only*

Figure 13: Number of Parked Cars
June 17, 2023, 6:00 PM

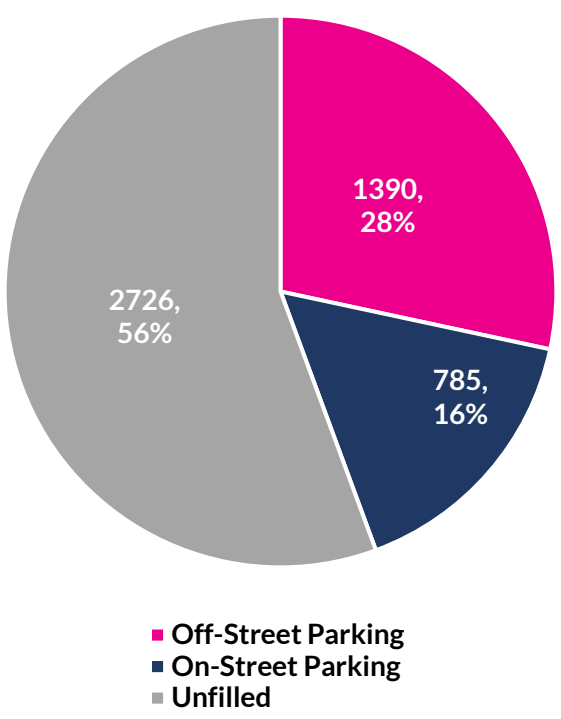
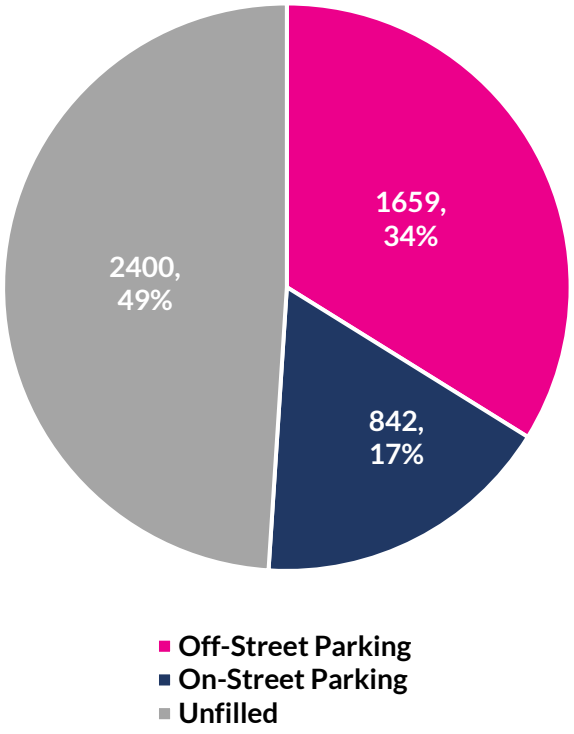
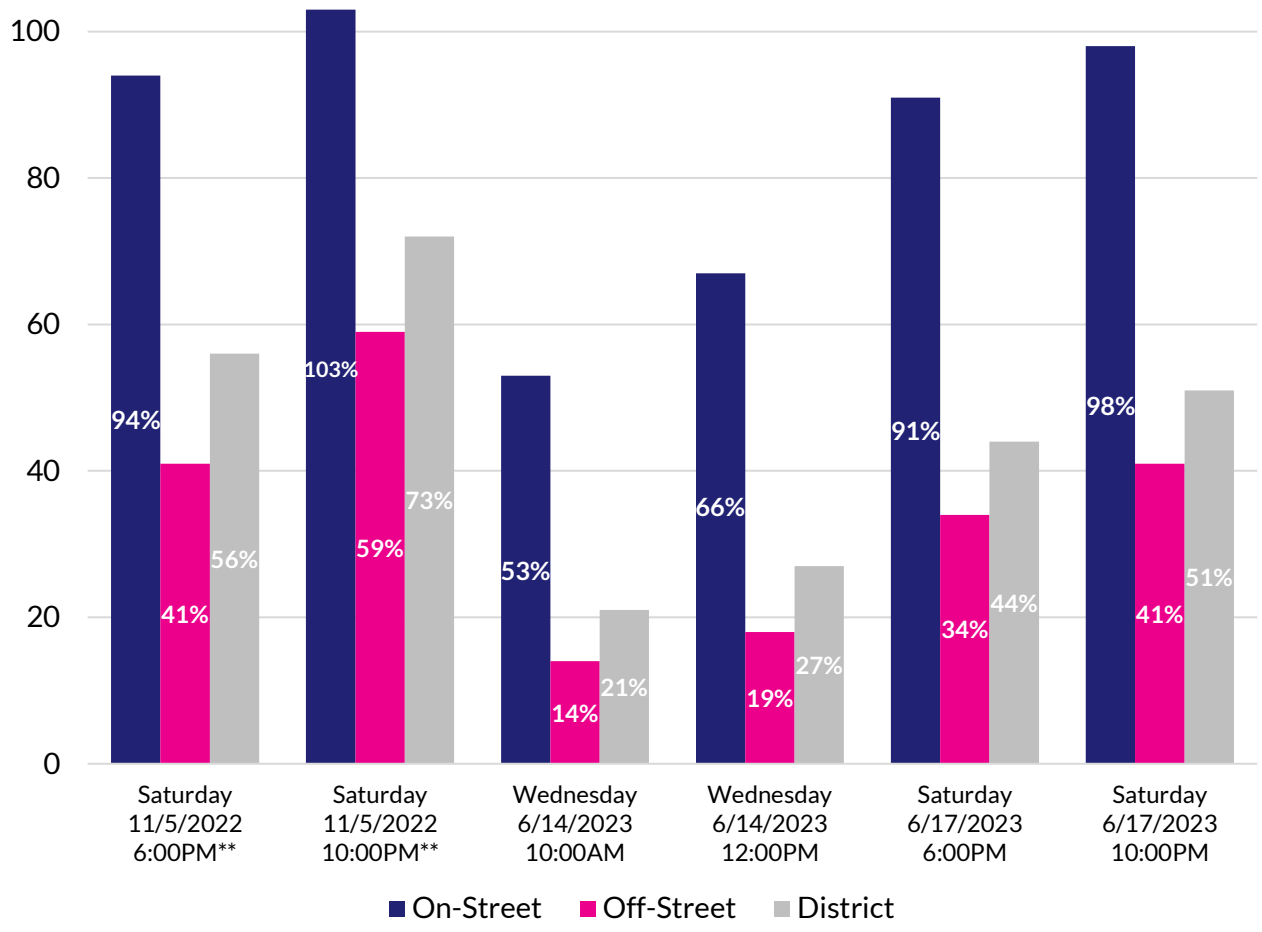


Figure 14: Number of Parked Cars
June 17, 2023, 10:00 PM



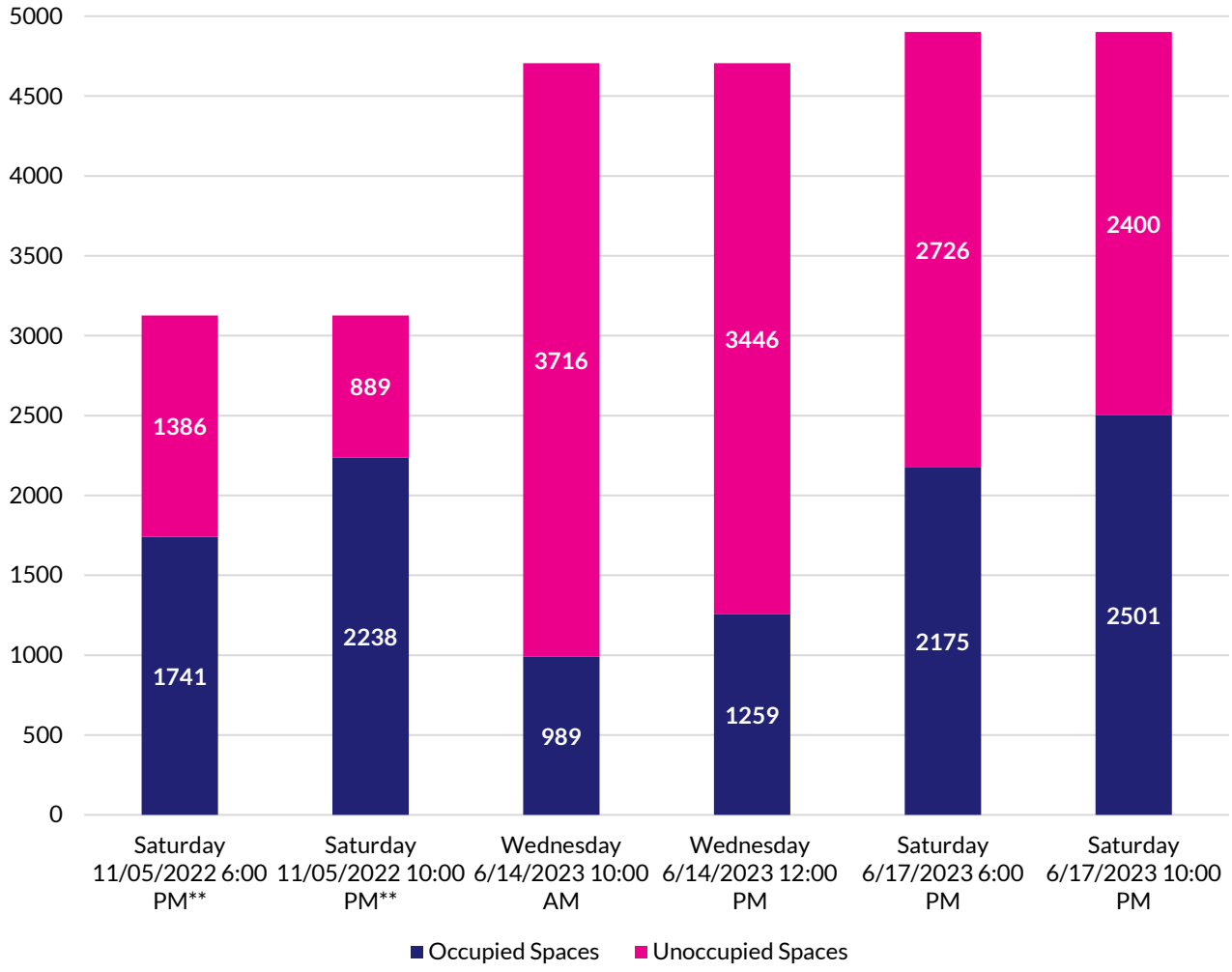
Parking Utilization Trends

Figure 15: Deep Ellum Public Parking Percent Occupancy Trends



*** The Stack and Epic II were not included on 11/5/22.*

Figure 16: Deep Ellum Public Parking Utilization Totals



*** The Stack and Epic II were not included on 11/5/22*

Pricing Sample for Selected Off-Street Lots and Garages

Figure 17: June 2023 Deep Ellum Sample Public Off-Street Parking Pricing Map

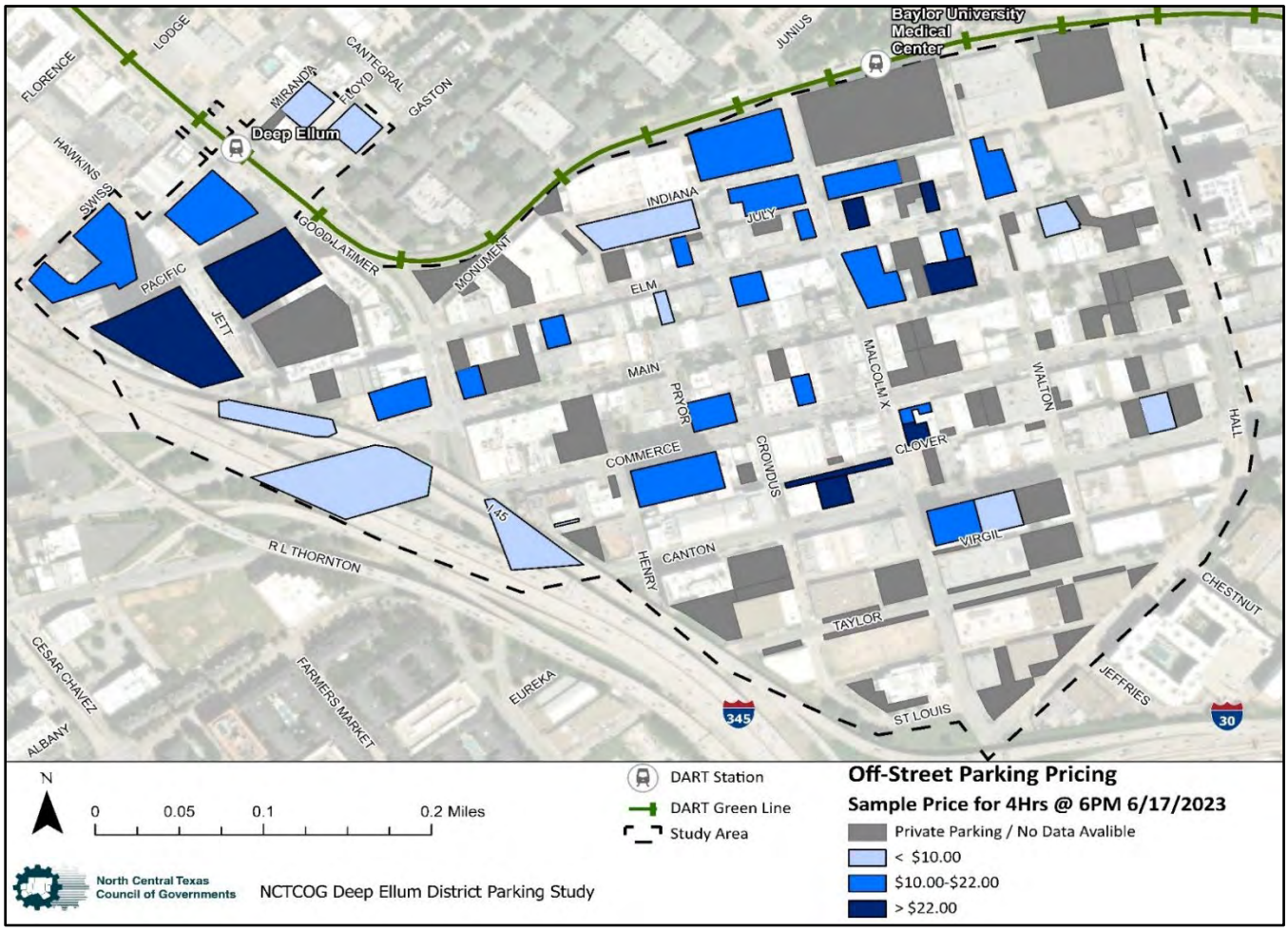


Table 23: June 17, 2023, Deep Ellum Sample Public Off-Street Parking Sample

Address	Parking ID	4-hour price @ 6 PM	Percent occupancy @ 6 PM	4-hour price @ 10 PM	Percent occupancy @ 10 PM
2700 Commerce St	G19	$15.00	25%	$15.00	35%
2900 Canton St	G25	$15.00	50%	$15.00	72%
2500 Pacific Ave	G35	$28.00	0%	$28.00	1%
2550 Pacific Ave	G4	$28.00	25%	$28.00	25%
2900 Canton	G99	$10.00	10%	$10.00	100%
2424 Swiss Ave	L102	$20.00	42%	$20.00	46%
2809 Canton Street	L103	$25.00	78%	$25.00	97%
3016 Elm St	L17	$6.00	68%	$6.00	76%
2513 Main St	L21	$17.00	63%	$17.00	105%
2516 Miranda St	L22	$20.00	87%	$20.00	93%
2711 Commerce	L23	$21.65	88%	$21.65	86%
2617 Gaston Ave	L24	$10.00	25%	$10.00	31%
2628 Elm St	L28	$22.00	64%	$22.00	96%
2806 Elm St	L29	$21.65	103%	$21.65	90%
2913 Main St	L3	$34.00	38%	$21.00	70%
2619 Floyd St	L33	$10.00	34%	$10.00	37%
3021 Canton St	L36	$7.00	8%	$7.00	42%
2767 Elm St	L37	$18.40	61%	$18.40	94%
2708 Elm St	L38	$10.00	100%	$20.00	100%
2904 Commerce	L41	$16.80	88%	$16.80	92%
2905 Elm St	L42	$34.00	100%	$21.00	77%
3001 - 3007 Elm St	L44	$15.00	29%	$30.00	14%
2711 Indiana St	L48	$17.53	64%	$34.66	71%
2625 Elm St	L49	$10.00	1%	$10.00	14%
2928 Elm St	L5	$18.45	50%	$18.45	50%
2811 Commerce	L57	$21.65	100%	$21.65	100%
Colver Ally	L59	$5.00	25%	$5.00	88%
2819 Elm St	L6	$21.65	100%	$21.65	107%
Colver Ally	L62	$25.00	25%	$25.00	50%
208 Malcolm X Blvd	L64	$30.00	100%	$17.00	93%
2905 Main St	L75	$17.00	90%	$21.00	99%
2627 Main St	L77	$17.00	90%	$17.00	100%
2611 Canton St	L79	$5.00	97%	$5.00	100%
300 Malcom X Blvd	L8	$21.65	33%	$27.00	33%
101 S Good Latimer	L80	$5.00	53%	$5.00	100%
2505 Main St	L81	$5.00	86%	$5.00	100%
2927-31 Elm St	L82	$24.00	0%	$17.00	0%
2820 Indiana St	L9	$15.00	78%	$15.00	75%

Figure 18: June 17, 2023, 6:00 PM, Deep Ellum Price Distribution Relative to Demand

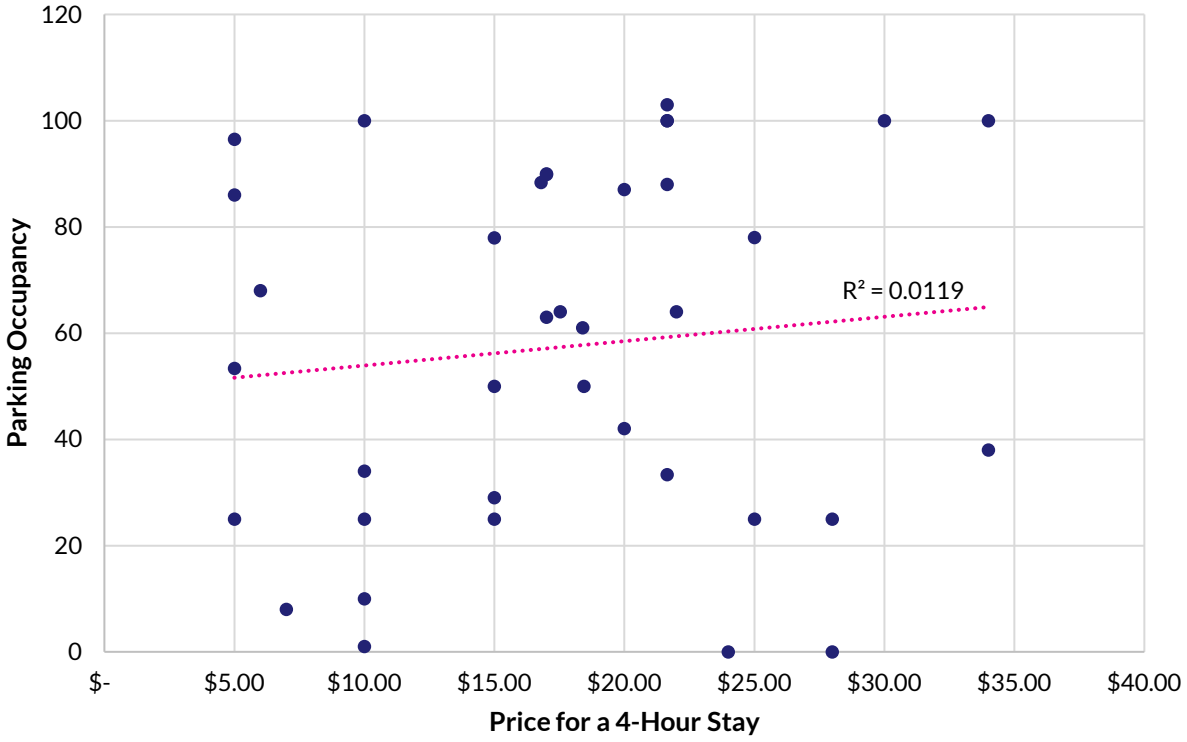
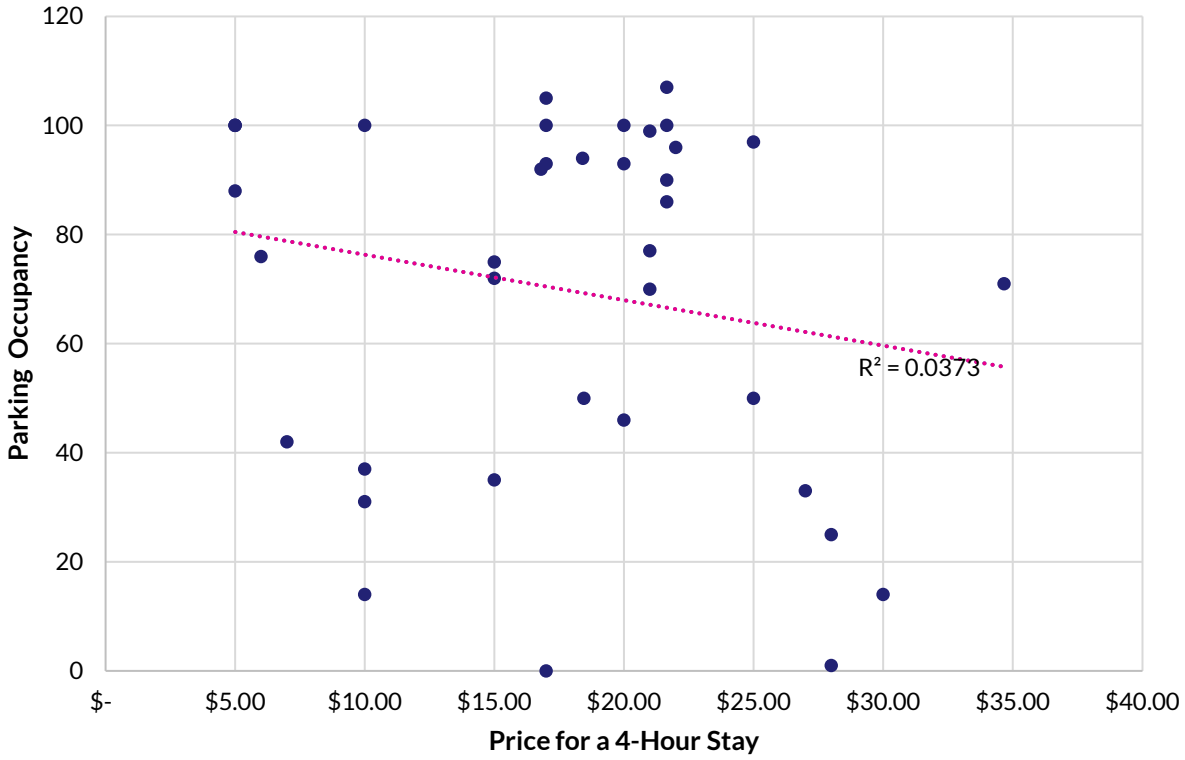


Figure 19: June 17, 2023, 10:00 PM, Deep Ellum Price Distribution Relative to Demand



Appendix C: Parking Management Best Practices Case Studies

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

Parking Management District Case Studies

A parking management district is typically a geographic area with a mix of land uses that offers a substantial pool of public or shared parking spaces.[1] Districts usually function to help meet parking demand for many properties at the district level rather than every property supplying its own parking on site. In many cases these districts also employ various management strategies in combination with the shared spaces to optimize the efficiency of parking and transportation access to the district.

The following parking management districts case studies come from varied places within the United States where each district takes a variety of approaches on how to manage their parking assets effectively and efficiently. These case studies can inform the decision on what best practices and/or common strategies can be implemented in Deep Ellum.

[1] *Parking Management Districts | ParkingToolBoxNTX (nctcog.org)*

South Side Parking Benefit District – Pittsburgh, PA

Starting in 2016, the City of Pittsburgh introduced parking enhancement districts for the purpose of generating funds from nighttime entertainment areas.[2] These funds are intended to those areas in the form of public safety concerns, public works resources, and needed capital improvements. The source of revenue will be nighttime parking collection; however, communities will have to opt into the program and only parking zones that meet certain thresholds. The South Side Flats of Pittsburgh is a neighborhood known for diverse activities, including music venues, theaters, bars, and restaurants. However, this activity also created safety and overall quality of life challenges for the public. The search for parking led visitors into residential areas, disturbing residents and making them targets for criminal activity.[3] Common issues include vehicle break-ins, muggings, and, in some instances, even shootings. As part of a broader effort to enhance safety in the neighborhood, the district became part of the parking enhancement district as a Parking Benefit District implemented in 2018 to help manage the use of neighborhood spaces. Stringent enforcement of residential parking permits guides visitors toward metered parking spaces, discouraging parking that would require them to roam through the neighborhood late at night. Parking meter revenue (minus enforcement costs) generated after 6:00 PM are set aside in a dedicated trust fund exclusively allocated for improvements in public safety and infrastructure within the neighborhood.[4]

Management Type	Parking Benefit District
Location Context	Urban/Neighborhood
Managed Parking Types	On-Street

Management Strategies Used

- Implemented paid parking meters on Friday and Saturday nights (normally all meter spaces are free after 6:00 PM).
- Hired off duty enforcement to enforce parking meters from 6:00 PM to midnight on Friday and Saturday nights (previously all meter spaces were free after 6:00 PM every night).
- Residential parking permits are issued to residents near South Side Flats to mitigate the effects of overflow parking into residential streets.
- Since the inception of the Parking Benefit District, a free shuttle service was offered on weekends to transport patrons around the district and provide easy access to nearby underutilized city parking. This initiative helped reduce the number of cars circling in search of parking. However, it is important to note that the free shuttle service is currently no longer operational.

[2] *ARTICLE VII: - PARKING | Code of Ordinances | Pittsburgh, PA | Municode Library*
[3] *Parking Benefit Districts - A Guide for Activists – Resources: Case Study- South Side Flats (parkingreform.org)*
[4] *Created the South Side Parking Benefits District – John T. Fournier (johntfournier.com)*

Midtown Parking Benefit District – Houston, TX

The City of Houston approved the Midtown Parking Benefit District in 2022 to manage the increasing curbside parking demand and traffic congestion due to the area's growing club and bar scene. The district implemented a Community Parking Program where residents purchase annual permits and metered parking was extended to include 6:00 PM to midnight on Midtown's most popular streets.[5] Its goal is to reduce the number of cars circulating for free parking, increase carpooling, and encourage people to take other modes of transportation. The Midtown Parking Benefit District takes resident permit revenue and 60 percent of meter revenue after 6:00 PM to finance improvements to enhance the quality of life, promote walkability, and support alternative methods of transportation.[6] An advisory committee hosted through the existing Midtown Management District makes recommendations on the use of parking benefit district funds.

Management Type	Parking Benefit District
Location Context	Urban Neighborhood
Managed Parking Types	On-Street

Management Strategies Used

- The Parking Benefit District was created to address and mitigate parking concerns and support transportation alternatives.
- Resident permits are issued to exempt residents from on-street parking restrictions and reduce spillover parking onto residential streets.[7]
- Metered parking was implemented to decrease the amount of circling for free parking, promote alternative transportation modes, and encourage carpooling.

[5] *Houston City Council approves new Midtown parking proposals | Community Impact*
[6] *Midtown parking meters extended to midnight as bars and clubs boom (chron.com)*
[7] *Parking Benefit Districts - Midtown (houstontx.gov)*

Uptown Parking Benefit District – El Paso, TX

In 2018, the City of El Paso established the Uptown Parking Benefit District in the Kern Place neighborhood. This included installing 122 parking meters to increase parking turnover, improving access to area businesses and fund area improvements.[8] Meter revenue is reinvested in the neighborhood through the new management program to fund security services, street maintenance, sidewalk improvements, lighting enhancements, support public transit,[9] and other improvements that promote alternative forms of transportation.

Management Type	Parking Benefit District
Location Context	Urban Neighborhood
Managed Parking Types	On-Street

Management Strategies

- Metered parking was installed to encourage parking turnover, improve access to area businesses and incentivize carpooling.
- El Paso launched a new parking website to make it easier for residents and visitors to find parking in Downtown and Uptown,[10] enabling users to access readily available information to search for parking availability ahead of time. This can improve traffic congestion issues. Website: https://park915.com/

[8] *122 parking meters go up in Kern Place in El Paso (elpasotimes.com)*
[9] *Parking meters to fund Cincinnati Entertainment District security improvements - KVIA*
[10] *Finding Public Parking Spaces in Downtown & Uptown Just Got Easier - El Paso Herald Post*

Parking and Access Services Department – Boulder, CO[11]

In 2017, Boulder, CO, implemented the Access Management and Parking Strategy to improve citywide transportation and parking while considering social, environmental, and economic interests.[12] This strategy included the Neighborhood Parking Management Program, which addresses parking overflow issues by issuing permits to downtown residents, visitors, and workers for on-street parking in nearby neighborhoods. Additionally, metered pricing adjustments aim to increase parking turnover and promote alternative transportation methods. This included the enforcement of parking fines for repeat offenders. Revenue from parking fees plays an important role in covering the parking program expenses, supporting transportation demand management initiatives, and funding district improvements.

Management Type	Parking Benefit District
Location Context	Historic Downtown
Managed Parking Types	On-Street (includes residential streets) Off-Street (garages and lots)

Management Strategies Used

- The City of Boulder manages over 2,500 on- and off-street spaces priced hourly. Historically rates were set at $1.25 to $2.50 per hour. Parking close to high-demand areas of Boulder will cost $0.50 more per hour to influence parking turnover.
- Performance-based pricing went into effect April 3, 2023.[13] This strategy sets different parking rates for on-street blocks depending on demand for that block and offers uniformly lower off-street parking pricing.
- Free 15-minute parking once per day/per license plate at on-street pay stations is offered for convenient short-term stays and rapid parking turnover in the district.
- The Neighborhood Parking Management Program is designed to lessen the overflow of on-street parking onto the surrounding neighborhoods by issuing permits to residents and commuters[14] for a higher price.
- Downtown Garage, Lot Employee, and Long-Term Parking Permits available in city-owned garages for commuters include an affordable remote employee parking garage.
- Dedicated City of Boulder parking enforcement officers are made available.
- A Parking Cash-out financial incentive[15] is offered to employees to encourage the use of commuter modes other than driving alone.
- The Park-to-Park programs[16] provide free shuttle services to create a better visitor experience while reducing vehicular and parking impacts on Downtown Boulder and the surrounding neighborhood. (Shuttles operate on summer weekends and holidays from Memorial Day weekend and connect to popular city parks.)

[12] *revitalizing-access-boulderfinal-report.pdf (bouldercolorado.gov)*
[13] Revitalizing Parking & Transportation Access in Boulder
[14] *Neighborhood Parking Permits | City of Boulder (bouldercolorado.gov)*
[15] Boulder Colorado Access Management & Parking Strategy
[16] *Park-to-Park Shuttle | City of Boulder (bouldercolorado.gov)*

Short North Parking Benefit District – Columbus, OH

The Short North Mixed-Use Arts District is a vibrant urban neighborhood between Downtown Columbus and Ohio State University. In 2019, the citywide Columbus Strategic Parking Plan created a parking benefit district. This was part of the district installing new parking meters and addressing employee parking concerns. The Short North Alliance (a non-profit and business improvement district) administers the parking benefit district in coordination with the City of Columbus' Parking Service Department.

One key implementation lesson learned from this district is its first attempt to encourage employees to park downtown and take a shuttle that ran late hours to reach the district.[17] However, the shuttle was deemed not effective and was cancelled. Now the Parking Benefit District uses its revenue to offer discounted rideshare/micro-mobility options, discounted transit fares, and subsidized monthly parking permits. The Short North Alliance also maintains an informative website for its transportation programs.[18]

Management Type	Parking Benefit District
Location Context	Urban/Neighborhood
Managed Parking Types	On-Street Public Garages Public Surface Lots

Management Strategies Used

- Metered parking was installed to encourage parking turnover and provide increased access to businesses and places of residence.[19] It may be performance based as the City of Columbus continues to measure parking demand.
- Mobile parking permits via ParkColumbus app are available to residents, guests, and employees to provide a reasonable expectation of finding a parking space within two to three blocks of their residence or workplace. The City of Columbus is in the process of removing all individual meters from the city.
- Employee Parking: Short North Alliance's Employee Mobility Benefits Program provides several options to help workers commuting to their district through actions such as[20]:
  - Discounted parking rate in a garage and parking lot (limited quantity)
    - Employees may be eligible for street parking through the city's Parking Services Department.
  - Discounted Central Ohio Transit Authority fares (bus routes run through the district).
  - Discounted on-demand transportation fares (CoGo bike share, Lime, Lyft).
  - Provided a shuttle to transport employees from remote parking facilities to their place of employment and vice versa (no longer a service).
- Time limits combined with paid parking in high-demand areas.

[17] *New Short North Parking Rules Now in Effect - Columbus Underground*
[18] *Short North Arts District Parking + Transit*
[19] *Parking Benefit Districts - A Guide for Activists (parkingreform.org)- Short North Case Study*
[20] *Short North Final Plan Detail Sheet: Employees*

- License Plate Recognition technology has been implemented to efficiently enforce restrictions. It also has the capability of broadcasting real-time parking availability via a mobile app and online.
- The ParkColumbus app not only facilitates payments and parking regulation information but also enables users to check parking availability. It also encourages visitors to consider alternative modes of transportation for accessing the district.

Friendship Heights Transportation Management District – Montgomery County, MD

The Friendship Heights Transportation Management District (TMD) was established to address increased traffic flows, parking availability, and concerns of pedestrian and bicyclist safety within the transportation-oriented development. It focuses heavily on encouraging other modes besides driving. The only publicly managed parking facility in Friendship Heights is on-street metered parking installed in 2015. The TMD staff performs employer outreach and helps distribute information about alternative commuting choices.[21] Additionally, the TMD provides a structure for evaluating transportation changes in the area and discussing strategies to reduce traffic congestion and address issues.

Management Type	Transportation Management District
Location Context	Urban-Neighborhood
Managed Parking Types	On-Street

Management Strategies Used

- Metered parking has been installed to increase parking[22] turnover and provide increased access to businesses.
- Parking costs tend to be relatively high, discouraging driving and providing an incentive to use transit.
- Outreach to employers, employees, and visitors to encourage interest and cooperation in reaching TMD goals by marketing programs to encourage utilization of public transportation and other commuting alternatives.
- Programs and incentives for employees and employers that commute to Friendship Heights district to take alternative modes of transportation.

[21] *Transportation Management Districts in MONTGOMERY COUNTY, MD - HELPING YOU FIND BETTER WAYS TO WORK - COMMUTER SERVICES SECTION (CSS)- Friendship Heights Transportation Management District (montgomerycountymd.gov)*

[22] *Friendship Heights TMD V. Traffic and Parking Trends.pdf (montgomerycountymd.gov)*

North Texas Context

As of 2023, the greater Dallas -Fort Worth region does not have a publicly led parking management district. Both Dallas and Fort Worth have metered parking and shared public parking via paid lots, but neither are coordinating the on- and off-street parking to meet demand in a proactive manner. One exception to this may be the privately managed Sundance Square organization which manages 35 blocks of mixed-use buildings in downtown Fort Worth.[23] As the property owner they also coordinate parking for their tenants and visitors amongst a series of garages, lots and valet stands.[24] This increases the efficiency of parking in this dense location by providing available parking at the district level without building parking spaces on each lot.

[23] *Sundance Square Refines Its Downtown Fort Worth Parking Program For A More Pedestrian-Friendly Experience - Downtown Ft Worth (dfwi.org)*

[24] *Downtown Fort Worth TIF reaches parking agreement with four garages - Fort Worth Business Press*

Performance Pricing for On-Street Case Studies

Performance pricing or demand-based parking is a management tool that sets meter rates based on demand to achieve a target occupancy rate. Typically, the goal is to achieve a 10 to 20 percent vacancy rate or one or two available spaces on any block to ensure that drivers can usually find a space, mitigating their need to circle the block searching for parking and reducing traffic congestion. The City of Dallas has proposed exploring the implementation of a performance-based parking pricing program in their draft On-Street Parking and Curb Management Policy. This review will present the implementation and effectiveness of similar initiatives in Washington, D.C., Boston, MA and San Francisco. The findings from these studies can serve as guides for potential implementation strategies in the Deep Ellum area.

Washington DC Penn Quarter/Chinatown

The District Department of Transportation (DDOT) launched the ParkDC Penn Quarter/Chinatown Parking Pricing Pilot with the goal of improving parking convenience and reducing congestion in this Washington, D.C. neighborhood. This pilot initiative employed advanced technology, dynamic pricing strategies for on-street parking spaces, development of two mobile apps, and outreach initiatives. High-demand blocks were subject to higher hourly rates to encourage faster turnover, while low-demand blocks used lower hourly rates to promote increased utilization. Prices were dynamically adjusted based on factors such as the specific block/side of the street, day of the week, and time of day. The program began with a base parking rate of $2.30 per hour, and hourly rates ranged from as low as $1.00 to as high as $5.50 in areas with peak demand.[25]

Moreover, the ParkDC pilot program included a comprehensive communication strategy to raise community awareness. To enhance the user experience, two mobile apps, ParkDC and VoicePark, were developed and offered to the public. These apps provide real-time information on parking space availability and pricing, enabling residents and visitors to make informed decisions about their parking needs.

Outcomes:

DDOT reported on how their ParkDC pilot performed in transportation and economic outcomes.

They reduced search time for available on-street parking spaces. Customers surveyed at the end of the pilot reported they found parking on average seven minutes faster. DDOT also found they were able to shift demand to less-used blocks. Illegal parking (double parking) also decreased by 43 percent.[26]

This reduced congestion, pollution, and encouraged use of other transportation modes. Weekday traffic congestion decreased by five percent in the study area compared to just three percent for the city. Additionally, the time spent circling for parking in the study area dropped as much as 15

[25] *Adjusting the price of parking based on demand has many benefits, a Chinatown study shows – Greater Greater Washington (ggwash.org)*

[26] *parkDC – Penn Quarter/Chinatown Parking Pricing Pilot Report Executive Summary*

percent during all time periods on weekdays and weekends. Capital Bikeshare ridership also increased by more than 60,000 trips in their pilot area.

Lastly, economic data from the pilot area showed a general positive trend in sales volume, employment, and the number of establishments.

The City of Boston, MA – Performance Parking Pilot

In January 2017, the City of Boston launched a performance parking pilot in the Back Bay and Seaport neighborhoods. The goal was to test the impact of demand-based meter rates on congestion, use of other transportation modes, and parking in underutilized on- and off-street parking. This included objectives focused on using pricing to ensure one to two open street spaces per block, decrease illegal double parking, and reduce circling for street parking.

In Back Bay they used a zone-based static pricing model where the hourly price was increased from $1.25 to $3.75 for the whole neighborhood.[27] This price stayed the same for the entire year of the pilot. In Back Bay this led to a 14 percent decrease in illegal double parking and 33 percent decrease in illegal loading zone parking.[28] It also increased turnover with the average parking stay decreasing by 14 minutes, which achieved their goal of having one to two spaces open per block.

For the Seaport neighborhood the approach was dynamic pricing by the block. Every two months, the city updates the price in $0.50 increments based on occupancy data to encourage one to two spaces to be open. Hourly prices throughout the district ranged from $1.00 to $4.00 depending on observed demand. The City of Boston did not find a significant impact in parking availability with their pilot. However, illegal parking in loading zones decreased 44 percent and double parking decreased 24 percent but they note this may not be due to the pricing.[29] Reasons for the lack of parking changes in the Seaport district pilot are noted to include a significant amount of new development which added traffic and temporarily took away parking on-street due to construction.

Outcomes:

(Selected key takeaways from Boston report)

- Zone-based pricing may be more effective than block-based pricing – easier to communicate to the public.
- Likely needs more than two months to see impacts of price changes in context of other factors like ongoing neighborhood development.
- Larger neighborhoods should be broken into subzones for more effective pricing decisions.
- Prices for on-street parking need to be set at a rate relative to private off-street parking, or implementation will not be effective with high public/private price differences.
- Additional detailed recommendations are available in the linked report.

[27] *City of Boston Performance Parking-Final Report: Performance Parking Pilot*
[28] *City of Boston Performance Parking-Final Report: Results from the Back Bay Pilot*
[29] *City of Boston Performance Parking-Final Report: Results from the Seaport Pilot*

SFpark – San Francisco, CA[30]

In 2017, the City of San Francisco introduced the Demand-Responsive Pricing Program, implementing it across the city's 28,000 on-street meters and all San Fransico Metropolitan Transportation Authority (SFMTA)-metered surface lots.[31] This strategic decision came after years of pilot implementation and evaluation of the federally funded pilot project called SFpark in 2011. Demand-responsive pricing was introduced under the SFpark pilot project which ran from 2011 to 2013. This pricing strategy, extended citywide in 2017, had been in effect since 2011 at 7,000 meters, 14 SFMTA-managed parking garages, and one SFMTA parking lot. This pricing methodology involved gradual periodic adjustment of on-street parking rates to maintain a minimum level of availability to ensure that patrons can locate parking spaces on almost every city block. To achieve this, in-ground parking sensors were deployed during the pilot in each space to make real-time rate adjustments at meters.[32] These rate adjustments were made to maintain the target occupancy rate of 60 to 80 percent. Specifically, when the occupancy rate reached 80 to 100 percent, the hourly rate increased by $0.25. In the 60 to 80 percent occupancy range, the hourly rate remained unchanged, while for occupancy levels of 30 to 60 percent, the hourly rate decreased by $0.25. If the occupancy falls below 30 percent, the hourly rate decreases by $0.50. Hourly rates were capped at a maximum of $6.00 per hour and a minimum of $0.25. In 2021, SFMTA adjusted its hourly capped rates from a maximum of $6.00 per hour and a minimum of $0.25 per hour, as introduced in the SFpark study, to the current rates of $0.50 per hour minimum and $8.00 per hour maximum, while the rate adjustments remained the same as those introduced in the pilot.[33]

Outcomes:

SFMTA provided the outcomes of their SFpark pilot, highlighting its impact on both transportation and economic factors.

The pilot project study demonstrated a substantial 43 percent reduction in the search for parking in comparison to the control areas of the study (where dynamic pricing was not implemented) where the decrease was only 13 percent.[34] Additionally, the pilot project study encouraged driving during non-peak hours, resulting in a 22 percent increase in parking availability during peak times, compared to a 12 percent increase during off-peak periods.

Furthermore, double parking, often a consequence of limited parking availability, decreased by 22 percent in pilot areas compared to only a five percent decrease in the control areas. The program also positively influenced local businesses, with economic data indicating a significant 32 percent

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[31] *San Francisco Adopts Demand-Responsive Pricing Program to Make Parking Easier | SFMTA*

[32] *At the end of the SFpark Pilot Project, the in-ground sensors used to measure parking occupancy were deactivated(San Francisco Rolls Out Dynamic Parking Rate Model (govtech.com).Smart meters were installed not only to collect digital payments but also as a mechanism to measure occupancy, albeit with slightly less accuracy since they transmit payment data.*

[33] *SFMTA: On-Street Parking Pricing Polices 2021*

[34] *SFpark Pilot Project Evaluation Summary: Secondary Benefits*

increase in sales tax revenue, surpassing the less than 20 percent increase observed in other parts of the city,[35] across sales volume, employment, and the number of establishments.

[35] *SFPark Pilot Project Evaluation: Visitor Spending in Neighborhood Commercial Districts*

Wayfinding, Signs, and Communication

Wayfinding refers to the tools and techniques used to orient and navigate users within an environment. The four primary wayfinding types – location identification, directional, informational, and regulatory wayfinding – encompass both physical forms such as paint, static and dynamic signage, and digital tools such as applications, websites, social media, and other communication channels. These strategies play an important role in transportation within a district for visitors and residents to understand transportation rules, navigate efficiently, and minimize congestion and unnecessary cruising. The following section covers physical and digital wayfinding tools, highlighting best practices.

Curb Paint (block by block or by street)

The purpose of painting curbs is to specifically communicate on-street parking rules to drivers. The use of curb paint can be used to supplement on-street signage or reduce signage clutter. Painting curbs enhances the visibility of curb regulations from a greater distance, decreasing the likelihood of confusion and simplifies driver navigation, resulting in improved predictability. Curb paint is especially valuable in warning drivers away from areas prone to parking violations, preventing illegal parking.

One example is the City of Bakersfield, CA, which painted curbs red to prevent illegal parking at bus stops. No Parking signposts were already at the bus stops, but the community reported continued violations, forcing buses to stop in traffic. The priority focus of painting was to facilitate easier commuting for the disabled community. This initiative followed the efforts of disability activists working to enhance accessibility at bus stops across the city.[36]

Best practices in curb painting require regular maintenance, including repainting to prevent color fading. Consistency in curb paint application as well as ongoing educational campaigns are essential to inform drivers about the meaning behind the different colors to ensure compliance.

Static Signage

An important step of creating effective district wayfinding includes developing a distinct parking "brand" for the district. Establishing a consistent visual identity not only aids visitors in easily locating parking spaces but also reduces the time spent circling to find a spot. Information on wayfinding signage must be both legible (users should be able to perceive or see the information) and readable (information must be easily understood).[37] It is recommended to incorporate internationally recognized symbols, such as the letter "P" for parking, and limit any additional text (no more than three to four messages per sign) for optimal comprehension.[38] Additionally, directional arrows displayed on parking signs can be helpful to guide motorists to available parking areas and enhance the navigation efficiency.

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[36] *23 ABC News, KERO (Director). (2013, April 16). City of Bakersfield painted curbs red to help disabled community commute easier. https://www.youtube.com/watch?v=UXjSLiOBtsk*
[37] The Dimensions of Parking (5th ed.). (2010). Urban Land Institute.
[38] *Berger, C. M., & Eiss, A. (2002). Principles of urban wayfinding systems. Institute of Transportation Engineers. ITE Journal, 72(4), 30–34.*

Developing consistent parking signage across both private parking operators and city-operated facilities can be a challenge, as private operators may have distinct branding preferences which could lead to potential inconsistencies in parking identification. However, through collaborative efforts, cities can establish a shared branding that respects the private operators' brand while maintaining overall consistency. The City of Alexandria, VA has been leading the effort in maintaining that balance by developing parking sign standards for their district with consistent branding. In their published wayfinding manual, the parking signage for Alexandria features a "P" icon as the main message with standard sizes, height, and lighting requirements and featuring either a private operator logo on the foot panel below or the city's name for publicly operated parking facilities (see **Figure 1**[39]).

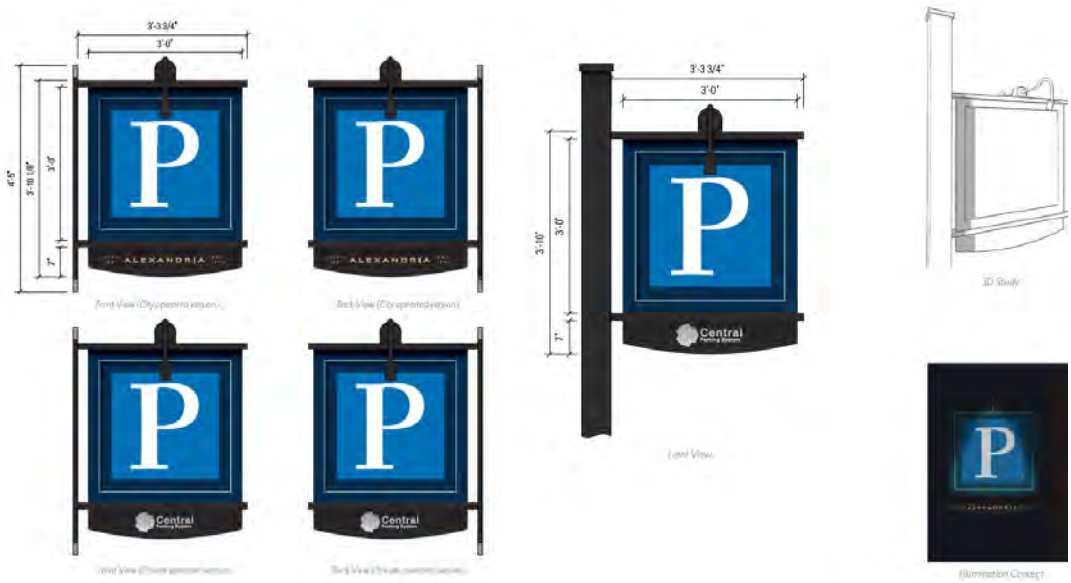

Figure 1: City of Alexandria, VA Features Public and Private Parking Signage Design Requirements

Another best practice in parking signage design includes providing trailblazers or gateway signs that clearly direct to and identify visitor parking facilities. This type of signage may be a pole sign or mounted on traffic signal crossarms leading up to parking facilities, with minimal design such as

[39] *Sasaki Associates. (2010). Wayfinding System Design Guidelines Manual. City of Alexandria, Virginia. https://media.alexandriava.gov/docs-archives/alexandriavagov/projectsandplans/transportation/wayfindingsystemdg2010.pdf*

the letter P, a directional sign, and/or a short address to keep messaging clear and visible (see example in **Figure 2**[40]). A lower cost alternative to trailblazers could be using A-Frame or sandwich boards, which are portable signs, however, this type of signage may require more active coordination with property owner and city government as it is only temporarily placed in public spaces. Additionally, this type of signage may be prone to cluttering and cause blocking of sidewalks if it is not regularly regulated.

Figure 2: Figure 2: Static gateway signage in Milwaukee, WI

Dynamic signage

Dynamic digital signage can be a helpful tool to provide clear real-time information on space availability and parking costs, helping travelers arrive to lots and garages quickly and reducing congestion from cruising (see example in **Figure 3**[41]).

Figure 3: Dynamic Parking Signage in Victoria, British Columbia with "Full" Indicator

Variable signage can also be displayed in remote locations such as major roadway entry portals to inform drivers ahead of time of parking availability. The City of Austin installed digital signage in

[40] *GRAEF, Walker's Point Association, & City of Milwaukee Department of City Development. (2014). Walker's Point Parking Study Appendix. City of Milwaukee, Wisconsin. https://city.milwaukee.gov/ImageLibrary/Groups/cityDCD/planning/plans/Near-South/WP-Strategic-Action-Plan/WalkersPointStrategicActionPlanAppendices_Draft.pdf*

[41] *Google, "Streetview." Digital images, Google Maps (http://maps.google.com), photograph of 749 Broughton St Victoria, British Columbia, taken November 2022*

2020 in their Central Business District displaying garage occupancy (**Figure 4**[42]). These numbers can then be integrated with parking apps and websites for people to see ahead of their trip to the district.

Figure 4: City of Austin, TX Digital Parking Signage with Occupancy Numbers on Display

Digital dynamic signage does have downsides as compared to static signs. For example, they require control or coordination with the technology installed in garages to display occupancy information. They also have a limited lifespan and higher maintenance costs. Two case study cities, Seattle, WA and Milwaukee, WI, have recently removed their dynamic parking messaging signs citing cost concerns.[43]

Real-time inventory signage such as those used at Fort Worth Clearfork garages and Plano Legacy West garages (**Figure 5**[44]) can encourage drivers to park in central garages. They require special equipment to be installed in the garages by the private owner. If the dynamic displays are placed in a visible location, it may encourage drivers to park there, rather than continue clogging streets in search of a space.

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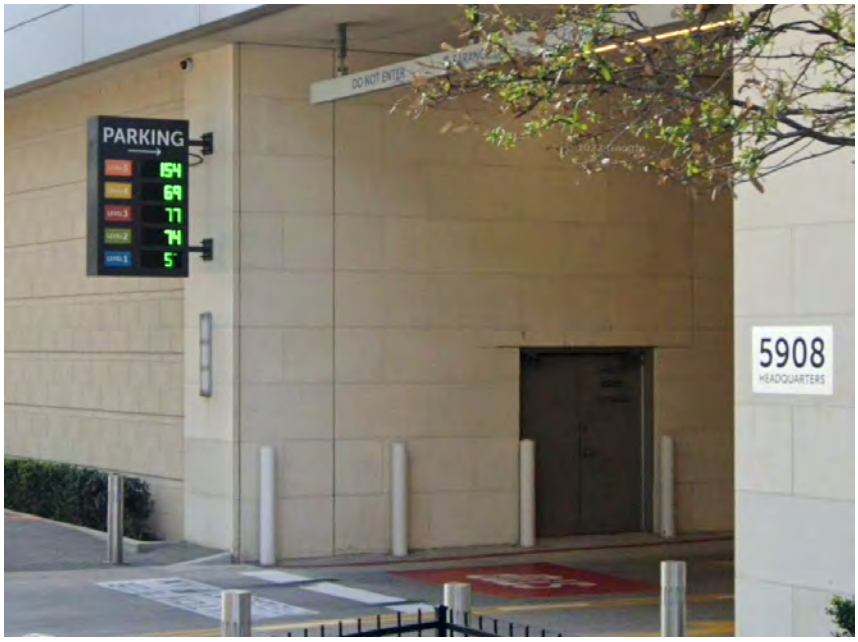
[42] *Richter, P. (2022, September 20). Digital Wayfinding Put to Work for the City of Austin Through ABM and Smarking. Smarking. https://www.smarking.com/post/digital-wayfinding-put-to-work-for-the-city-of-austin-through-abm-and-smarking*
[43] *Davis, S. (2020, June 29). E-Park Signs will go dark on July 1, 2020. SDOT Blog. https://sdotblog.seattle.gov/2020/06/29/e-park-signs-will-go-dark-on-july-1-2020/*
[44] *Google, "Streetview." Digital images, Google Maps (http://maps.google.com), photograph of Legacy West Development at 5908 Headquarters Dr, Plano, TX, taken April 2021.*

Figure 5: Dynamic Parking Availability Signage in Plano



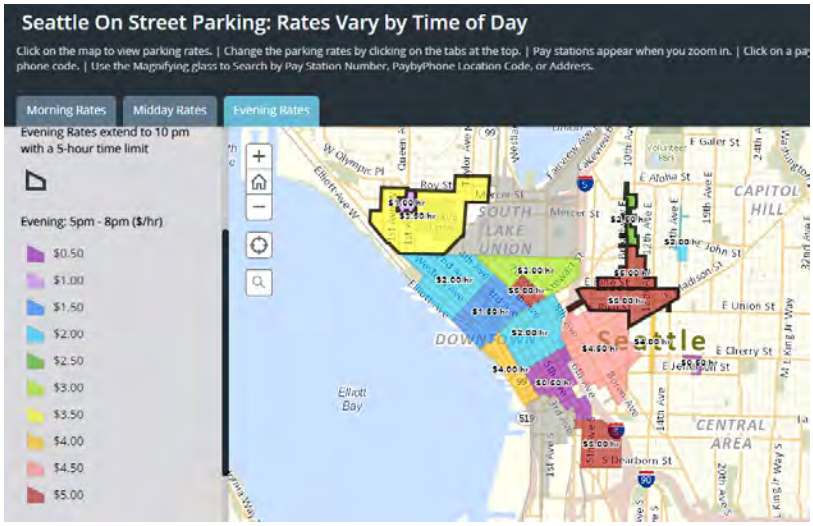
Communication

Parking communication usually comes in the form of mobile applications (apps) and websites that can include real-time data on parking availability, location, regulations, and pricing. Additionally, proactive communication such as social media posts and emails play an important part in informing the public on district parking. Districts can actively use advertising, partnering, and campaigns to let people know where to park.

One way to share this information is through publishing websites with maps. A good example of this is the City of Seattle, WA's use of an interactive GIS map to inform the public on on-street paid parking rates, split up between morning, midday, and evening rates (see **Figure 6**[45]). This allows drivers to decide on where they want to park ahead of time and reduces circling. Creating and maintaining an effective website or app to display parking cost and availability information requires real-time data integration with regular updates, collaboration with private parking operators, integration with payment platforms, and include a feedback mechanism to gather input from users for necessary information updates.

[45] *Seattle Department of Transportation. (n.d.). Seattle On Street Parking: Rates Vary by Time of Day. Seattle City GIS. Retrieved December 18, 2023, from https://seattlecitygis.maps.arcgis.com/apps/MapSeries/index.html?appid=5fc6cb313ec34374a3141d4d24b05c5d*

Figure 6: City of Seattle, WA, On-Street Parking Rates Map



Cities can also display this information through static maps. The Short North Arts District in Columbus, OH developed a map that not only includes parking locations but also displays which parking facilities include valet parking, electric vehicle parking, have parking kiosks, estimated costs, transit options, bicycle rideshare, car rentals, and rideshare service information to provide visitors a comprehensive list of transportation options when visiting the district (**Figure 7**[46]).

Figure 7: Short North Arts District Parking Map

Proactive communication involves regular updates to visitors and residents which can be done through effective social media marketing and campaigns. Social media can be especially valuable in raising awareness about parking facilities or alternative modes of transportation within the district. The Philadelphia Parking Authority (PPA) provides a good example of successful social

[46] *Short North Parking Guide. (2023, August 23). Short North. https://shortnorth.org/wp-content/uploads/2023/08/August-23 -Parking-Map-1.png*

media marketing, as they have earned numerous awards from the International Parking & Mobility Institute in marketing and communications.[47] With a following of over twenty-one thousand on their Facebook page in 2023, the PPA informs and educates the public presenting information in an easily understandable format (see **Figure 8**[48])

Figure 8: PPA Facebook Post

Their posts cover a range of topics, from tips on avoiding fines to interactive maps for parking permit districts, visitor pass details, handling unexpected tows, event parking deals, and more. Using social media for communications requires consistent and timely posting related to ongoing conversations and current events. Organizations that are looking to enhance their parking management through this technique should commit sufficient time and resources to maintain regular and frequent engagement.

Some organizations are incorporating innovative technologies like geofencing into their targeted communication strategies. Geofencing allows organizations to target specific geographic areas, delivering location-relevant content. A good example of this technology in use is Pinellas County in Florida, where Forward Pinellas, the planning and transportation agency, implemented a pilot project in May 2023. This initiative used geofencing to promote targeted education outreach using location-specific Facebook and Instagram ads. The ads were used to gather survey responses from individuals passing through a high-traffic-crash zone, inviting them to share their driving experiences through an online survey. The results revealed modest reduction in traffic

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[47] *PPA Staff. (2019, November 17). International Parking & Mobility Institute's Marketing & Communications Award – 2019 | The Philadelphia Parking Authority. Information for Down the Road. https://philapark.org/2019/11/international-parking-mobility-institutes-marketing-communications-award-2019/Philadelphia*

[48] *Parking Authority | Philadelphia PA. (n.d.). Facebook. Retrieved December 18, 2023, from https://www.facebook.com/PhilaParking*

incidents throughout the duration of the pilot project.[49] Beyond transportation safety, geofencing can be valuable for parking management communication campaigns. For example, it can target visitors in a district, providing information about parking regulations and availability.

[49] *Lebron, S. (2023, May 2). A pilot study on one of Pinellas County's most dangerous roads aimed to change driver behavior. WUSF NPR. https://www.wusf.org/transportation/2023-05-02/pilot-study-one-of-pinellas-county-most-dangerous-roads-change-driver-behavior*