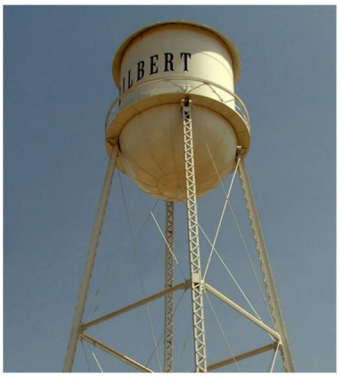

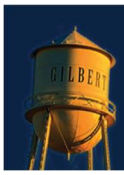

Heritage District
Parking Master Plan

Town of Gilbert, AZ

February 17, 2021

Prepared for:
Town of Gilbert

GILBERT
ARIZONA

WALKER
CONSULTANTS

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EXECUTIVE SUMMARY

The Town of Gilbert engaged Walker Consultants (Walker) to complete a parking study in support of the development of the Heritage District Parking Master Plan in February 2020, following a public request for proposals process. The results of the study and Parking Master Plan, contained herein, are intended to identify existing and future parking needs in a way that balances the community's need to accommodate future growth with its desire to manage the public parking system so that it provides equitable access for all Heritage District patrons, employees, residents, and visitors. Based on the study's findings and the toolbox of parking management strategies and implementation recommendations, this document provides Town leadership with the necessary tools and guidance to develop a public parking system that will support the Town's goals for the Heritage District.

The Town should be applauded for its forward thinking and planning for the implementation of a managed parking system. This will be a significant change for the Heritage District, but one that is necessary to mitigate parking and transportation frustrations and provide solutions for future parking demands before they become a detriment to the community. Key themes identified in the study and planning process include:

- **Localized Shortages.** While there are pockets of high parking demands experienced throughout the Heritage District, these instances are highly localized to specific corridors and activity centers. Throughout the study, parking demands were observed to peak for the overall District on a Friday evening in March. During this time public parking facilities experienced an overall occupancy of 66%, while private parking facilities experienced an overall occupancy of only 21%. On-street parking, often the most convenient and desirable for parking system users, was observed to peak on a Saturday evening at 67% for the Heritage District. Just within the 1-block radius of Gilbert Road, on-street parking was observed to be 77% occupied during this time.

- **New Inventory Needed.** Approximately 1,655 to 2,104 new parking spaces will be needed to accommodate projects outlined in the Redevelopment Plan for which there is a known redevelopment timeline, accounting for and excluding anticipated self-parked projects and key redevelopment areas as well as excluding residential parking. This range, which includes accommodation of existing peak demand in those areas with a 10% supply cushion, is based on the level of efficiency possible from potential shared parking resources. The more spaces built that are shared the greater efficiency gained, and fewer spaces necessary overall to accommodate future parking demand growth associated with new developments. Conversely, if more spaces are built and allocated to specific land uses, less efficiency can be realized, and more parking spaces will be needed to accommodate future parking demands.

- **Managing the Parking System.** A managed parking system supports the economic vitality of the Heritage District businesses and improves the equitable access to parking and transportation resources. With minor adjustments to existing Code language, the Town is well positioned in having the necessary flexibility to adapt to future conditions and begin managing public parking assets. How that system is managed operationally, and how that management is funded, will be determined by the Town's goals and preferences, with support from this Plan in the form of strategies that can phased and layered as necessary.

The development of a strategic Parking Master Plan and well-defined steps to implementation is a critical first step in creating a comprehensive public parking management program for the Town of Gilbert and the Heritage District. The following page provides a summary of the strategies included in the management toolbox and their recommended steps and timing for implementation.

SUMMARY OF STRATEGY AND ACTION ITEM BY TIME HORIZON

Strategy	Immediate & Short-Term 0 – 5 Years	Mid-Term 5 – 10 Years	Long-Term 10+ Years
Parking Enforcement	• Hire and/or contract and train parking program manager and parking enforcement/ambassadors • Develop and provide enforcement regulations and educational materials • Implement active parking enforcement of managed facilities	• Monitor parking utilization and enforcement data for necessary routing and staffing adjustments	• Ongoing monitoring of enforcement needs and adjustments
Signage & Wayfinding	• Conduct detailed Inventory of existing wayfinding and guidance signage • Begin thinking about preferred branding and identity for District parking system • RFP for design, development, and acquisition of static and dynamic signage and wayfinding • Dynamic wayfinding should include integration of parking location and availability into any mobile payment application that may be in place as part of the paid parking strategy option	• Ongoing maintenance of signage and wayfinding	• Ongoing maintenance of signage and wayfinding
Curb Lane Management	• Development of curb lane policy and program • Implement curb lane policy and program	• Ongoing evaluation and adjustment of curb lane management policy and program, to include ongoing coordination with Downtown Merchants Association and other Heritage District stakeholders as needs adapt over time	• Ongoing evaluation and adjustment of curb lane management policy and program, to include ongoing coordination with Downtown Merchants Association and other Heritage District stakeholders as needs adapt over time
Time Limited Parking	• Implement on-street time limits • Identify requirements for neighborhood parking permit program (NPPP) eligibility • Ensure parking enforcement training includes time limits	• Ongoing evaluation of on-street time limits based on enforcement and utilization data, in terms of duration and locations • Evaluation of off-street parking utilization trends for potential time limited parking expansion as necessary • Identify locations for NPPP and implement is neighborhood meets eligibility requirements	• Ongoing evaluation of on-street and off-street adequacy and adjustments of time limits and locations • Ongoing evaluation and adjustment of NPPP as necessary
Paid Parking	• Identification of threshold for implementation of paid parking – funding source driven, system utilization driven, or combination. Workshop session with Town Council to review and discuss.	• Ongoing evaluation of identified metrics driving implementation • If metrics indicate need, RFP development and acquisition of payment technologies • If metrics indicate need, identification of facilities or areas to be paid, to remain time limited, and/or permit areas	• If metrics indicate, implement paid parking • Ongoing evaluation of system utilization trends and funding needs
Special Events	• Collect vendor information for event planners to utilize in promotion of alternative modes for events • Update Special Event Permit application to include recommendations and requirements for alternative modes of transportation	• Investment in alternative mode infrastructure to rent to organizers for special events	• Ongoing evaluation of vendors, modes, and permit process

01 Introduction & Background

SECTION 1 – INTRODUCTION & BACKGROUND

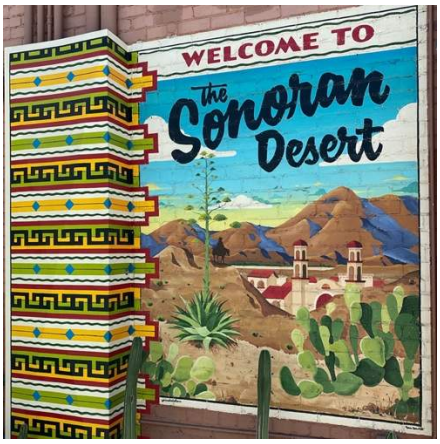
The Heritage District contains the cultural and historical center of the Town of Gilbert (Town), which is preparing to celebrate its centennial this year. As one of the oldest municipalities in Maricopa County, the Town is now the sixth largest in Arizona and the fifth largest within the Phoenix metropolitan area, with a population of nearly a quarter million within town limits. Walker Consultants (Walker) has worked closely with the Town for the last five years, performing design work, restoration work, and other consulting for new and existing structured parking assets within the District.

The District is engaged in an ongoing process of growth and change that has steadily resulted in increased traffic and parking demand during the last decade. During the daytime on weekdays, a diverse array of shopping options, office activity, and education keep the District busy, with a steady inflow of business patrons, visitors, and employees. During nights and on weekends, a myriad of restaurants, civic uses, and night life options are responsible for the District becoming even busier than in the daytime. The diversity of land uses and activity patterns within the District ensures that public and private parking within the high-demand areas remain well utilized during most hours of the day.

Moreover, the Town hosts a variety of seasonal and regular community and regional events, such as the bi-weekly Art Walk in Water Tower Park, the Gilbert Farmers' Market, and a weekly food truck gathering. Regular theater performances held by the Hale Theater also contribute to overall parking and traffic loads during peak times.

This Parking Master Plan will outline a series of phased strategies to support the District over the next five to ten years, supported by quantitative data gathered and analysis on existing and future parking conditions performed by Walker. These strategies were developed with guidance and input from Town leadership, Town staff, and a serios of community stakeholders including district business owners, and other community organizations.

The strategies outlined within this Master Plan are intended to be implemented over time as needed, with implementation tied to certain key events, developments, or other trigger points that are defined in this Plan. This Plan should also be used in concert with the Heritage District Redevelopment Plan and be in harmony with any Heritage District capital improvement projects that are in the works currently or that may come in the future.



PREVIOUS HERITAGE DISTRICT PARKING STUDY

In July 2015, Kimley Horn furnished to the Town its first Parking Master Plan for the Heritage District, which represents the last time that parking within the District was studied. At the time, public parking assets remained almost completely unmanaged, with no fees or time restrictions applying to either off-street or on-street parking. The 2015 study focused only on parking assets generally within the area bounded by the Western Canal, Union Pacific Railroad tracks, and Elm Street.

2015 EXISTING CONDITIONS

Within the selected area, there were 1,563 off-street and 256 on-street parking spaces, mostly public. At the observed peak of Friday evening at 7 pm, parking within a block of Gilbert Road peaked at 68% percent occupancy, while parking more than a block away on either side peaked at 49%. In the Vaughn Parking Garage, occupancy peaked at about 50%. During the observed peak, a food truck gathering was occurring along with a Hale Theater performance, representing increased parking demand in relation to typical Friday evenings with no events going on.

The study concluded that, in 2015, there was a parking surplus of 38 percent, and that there was an adequate supply of publicly accessible parking within the high-demand areas of the District.

2015 FUTURE PROJECTIONS & RECOMMENDATIONS

The 2015 study projected that, upon District build-out (as it was understood then), that the parking system's percent occupancy would peak at 72% during a typical weekday, with public parking operating at 67%. During a typical weekend evening, however, the peak occupancy would peak at 73%, with public parking spaces operating at 77% occupancy.

The 2015 study recommended various near-term and long-term strategies to ameliorate parking deficiencies in both the near term and long term.

Table 1 and **Table 2** describe each near-term and long-term strategy recommended in 2015, the implementation status as of 2020 for those strategies, and associated comments.

Table 1: Summary of Near-Term Strategies and Implementation Status from 2015 Study

Strategy Category	Strategy Recommendation	Implementation Status	Implementation Comment
Parking Enforcement & Regulation	Establish parking restrictions for on-street parking	X	Due to COVID-19, some formerly unrestricted spaces along Page Avenue have been converted to 15-minute/"to go" parking as of June 2020.
	Restrict overnight parking	X	Overnight parking is restricted adjacent to Senior Center.
	Implement a residential parking permit program	X	
Parking Management	Conduct parking management study	**In Progress**	
Parking Zoning Policy	Create a fee-in-lieu program	X	
	Implement reduced parking minimums in Town code	X	
	Explore/expand shared parking	X	

Source: Town of Gilbert, Walker Consultants

Table 2: Summary of Long-Term Strategies and Implementation Status from 2015 Study

Strategy Category	Strategy Recommendation	Implementation Status	Implementation Comment
Curb Lane Management	Conduct a curb lane policy study	**In Progress**	
New Off-Street Parking	Construct 950 new parking spaces across two parking structures	✓	968 spaces constructed.
New On-Street Parking	Evaluate if there is need for new on-street parking along Gilbert Road	X	

Source: Town of Gilbert, Walker Consultants

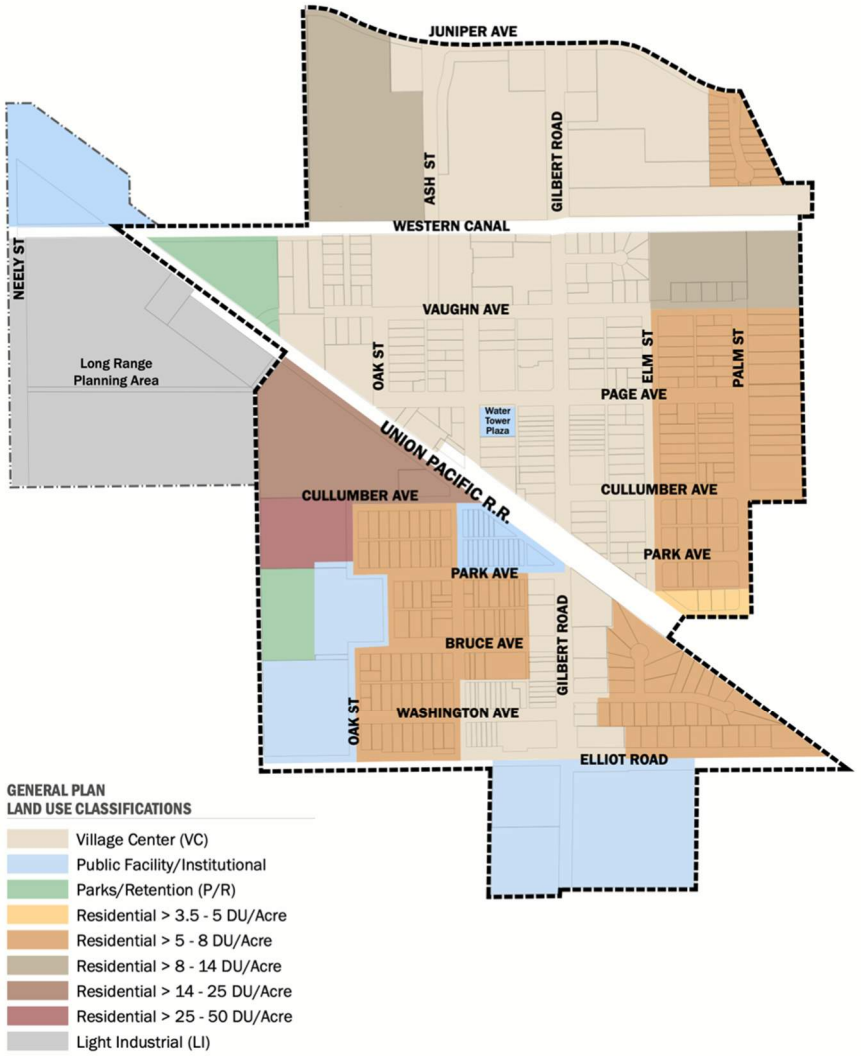
Overall, parking within the Heritage District remains unmanaged and free. The only recommendation that was implemented in full was the construction of the two public parking garages. Two of the recommendations are to be completed as part of this full report.

STUDY AREA

Figure 1 depicts the boundaries of the Heritage District, as shown in the Heritage District Redevelopment Plan. In addition to the retail, restaurant, entertainment, and office facilities that form the heart of the study area, the District boundaries also contain selected single-family, multi-family, light industrial uses, and other low-density commercial retail uses immediately to the north, east, south, and west of the District center.

The District is roughly divided in half by railroad tracks that cross in a diagonal direction from the northwest to the southeast. The high-activity retail, restaurant, and entertainment uses fall inside the northern half of the District, along both sides of Gilbert Road immediately to the north of the tracks.

Figure 1: Heritage District Boundaries (With Land Use Classifications Shown)



Source: Heritage District Redevelopment Plan

HISTORICAL GROWTH

For historical reference, the percent growth year over year for retail, restaurants, and hotels in Gilbert has been strong since the Great Recession of 2008. **Table 3** shows growth in retail and restaurant spending per capita in Gilbert between 2007 and 2017. **Table 4** shows growth in total hotel tax revenues, using percentage growth figures that were provided by the Town.

Note that this table and the next table express growth for the entire Town, not just the Heritage District.

Table 3: Retail and Restaurant Spending per Capita in Gilbert, 2007 - 2017

Land Use	2007	2009	2011	2013	2015	2017	Average Annual Growth from Base Year
Spending per Capita by Year							
Retail	$ 6,641	$ 7,553	$ 7,422	$ 8,313	$ 9,080	$ 11,034	$ 1,839
Restaurant	$ 848	$ 1,036	$ 1,114	$ 1,193	$ 1,332	$ 1,714	$ 286
Total	**$ 7,489**	**$ 8,589**	**$ 8,536**	**$ 9,506**	**$ 10,412**	**$ 12,748**	**$ 2,125**
Percent Change Year over Year							
Retail	0%	14%	-2%	12%	9%	22%	5.5%
Restaurant	0%	22%	8%	7%	12%	29%	7.7%
Total	**0%**	**15%**	**-1%**	**11%**	**10%**	**22%**	**5.7%**

2019 data not available at time of this writing

Source: Town of Gilbert

Table 4: Total Hotel Tax Revenue Percent Growth Year over Year, 2012 - 2019

Hotel Total Bed Tax Revenues	2012	2013	2014	2015	2016	2017	2018	2019	Average Annual Growth from Base Year
Percent Increase	18.3%	26.0%	29.3%	9.5%	6.7%	5.4%	-0.2%	21.3%	15%

Source: Town of Gilbert

Between 2007 and 2017, Gilbert averaged an annual average increase of about 5.5% for retail spending per capita and 7.7% for restaurant spending per capita, equating to an overall 5.7% average increase combined. Between 2012 and 2019, hotel growth, as measured in terms of total hotel tax revenues, averaged an average annual increase of 15%

ACRONYMS

Within this report there are acronyms that have unique meanings as applicable within the context of the study of parking or that have a meaning specifically applicable for this project. The following is a list of some of the acronyms used here.

- ADA – Americans with Disabilities Act
- DU – Dwelling unit
- GLA – Gross leasable area
- HD – Heritage District
- KSF – 1,000 square feet
- MU – Mixed use

02 Existing Conditions

WALKER CONSULTANTS

Heritage District Parking Master Plan

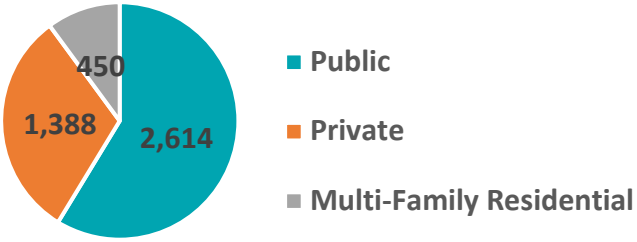
EXISTING CONDITIONS KEY TAKEAWAYS

INVENTORY

5,430
Total Parking Spaces, Entire District

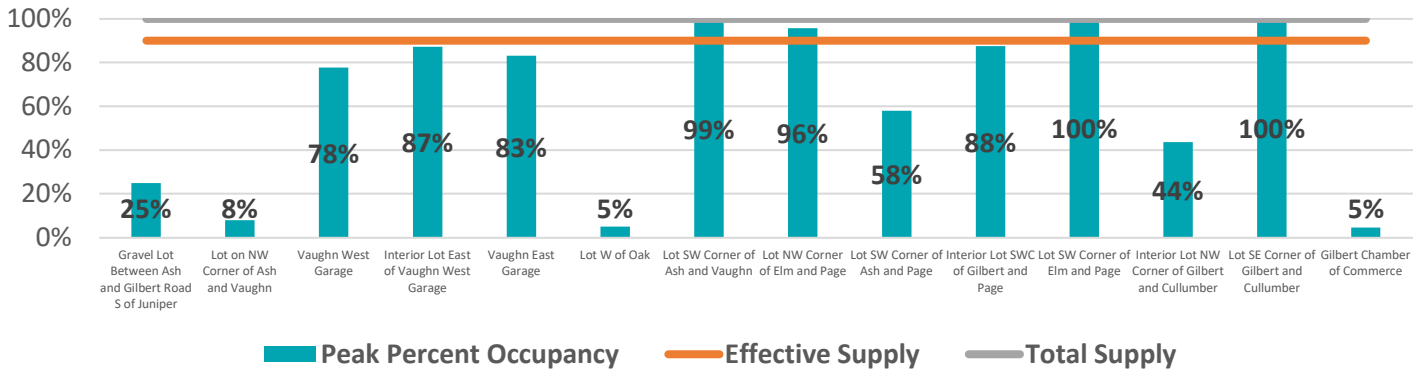
2,324
Effective Off-Street Public Parking Supply

On-Street



Off-Street

PEAK OFF-STREET OCCUPANCY



66%
Peak Off-Street Public Occupancy

588
Effective Off-Street Public Parking Surplus

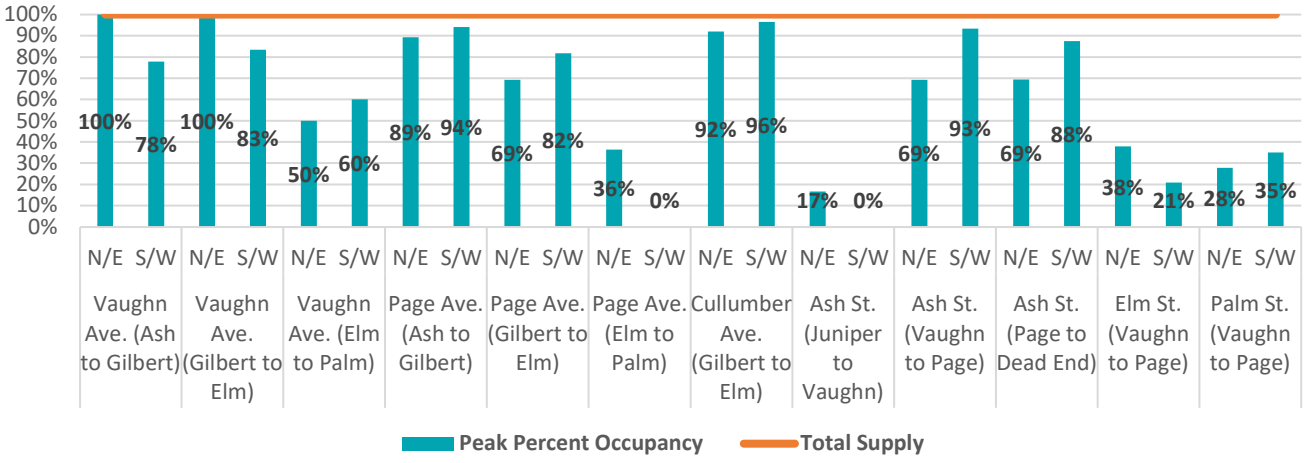
1,735
Peak Off-Street Public Parking Demand

PEAK ON-STREET OCCUPANCY

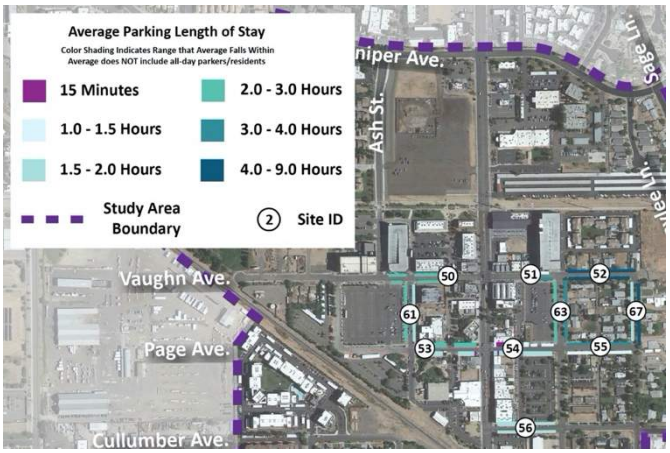
77%
Peak On-Street Occupancy (Within One Block of Gilbert Road in Core Area)

67%
Peak On-Street Occupancy

50
Effective On-Street Public Parking Surplus



LENGTH OF STAY



Heat Map of Average Length of Stay by Block on Weekends

2.19/2.61
Average Weekday/Weekend Length of Stay in Hours

61
Number of Vehicles Parked for More than 4 Hours within One Block of Gilbert Road on Weekend Study Day

SECTION 2 – EXISTING CONDITIONS

As a result of recent changes and growth, the Town has asked Walker to provide a comprehensive assessment of parking conditions as they exist now within the Heritage District. This study will function partially as an update to previous Heritage District parking study that was conducted in 2015.

This section of the report focuses on analysis of existing parking conditions and projects scenarios for future parking needs in the district.

DEFINITION OF TERMS

Several terms or jargon are used in this report that have unique meanings when used in the parking industry. To help clarify these terms and enhance understanding by the reader, the following definitions are presented.

- **Adequacy** - The difference between the effective parking supply and parking space demand.
- **Design Day** - The day that represents the level of parking demand that the parking system is designed to accommodate. In most of the thousands of parking studies that we have conducted, this level of activity is typically equal to the 85th to 95th percentile of absolute peak activity. Although we will occasionally design to a higher-than-typical design standard, such as a standard by which demand will exceed supply only one day per month, or even the absolute peak level of demand, we do not typically design to these extreme conditions because the result is an abundance of spaces that remain unused most of the time.
- **Effective Supply** - The total supply of parking spaces, adjusted to reflect the cushion needed to provide for vehicles moving in and out of spaces, spaces unavailable due to maintenance, and to reduce the time necessary for parking patrons to find the last few available spaces. The effective supply varies as to the user group and type of parking, but typically the effective supply is 85 percent to 95 percent of the total number of spaces. The adjustment factor is known as the **Effective Supply Factor**.
- **Inventory** - The total number of marked parking spaces within the Study Area.
- **Length of Stay** – Also referred to as duration, this is the uninterrupted length of time that a vehicle was observed parked in the same parking space. Length of time data is typically collected every one to two hours over the course of an entire representative survey day.
- **Parking Demand** - The number of spaces required by various user groups. Parking demand representing design day conditions is compared with effective supply to determine the adequacy of a parking system.
- **Parking Supply** – The total number of marked parking spaces within the study area.
- **Patron or User** - Any individual parking in a study area.
- **Peak Hour** - The peak hour represents the busiest hour of the day for parking demand.
- **Survey Day** - The day that occupancy counts within a study area are recorded. This day should represent typical parking demand patterns on either a weekday or weekend.

FACILITIES STUDIED

The study area consisted of the entire Heritage District, not including the Long Range Planning Area, which is roughly bounded by Elliot Road to the south, Juniper Avenue to the north, Oak Street to the west, and Palm Street to the east.

All parking facilities and corridors where parking is allowed were assigned a facility or corridor identification number as well as a label, which are used throughout this report in the accompanying tables, charts, and maps. Note that all the facility descriptions, including those for all the public parking facilities, do not represent formal designations for those facilities, if any exist, and were assigned and defined by Walker at the time of study.

OFF-STREET PARKING

In all, there were 43 separate off-street parking facilities that fell within the study area, out of which two were multi-level parking structures located along Vaughn Avenue and one was a temporary gravel lot located on the north side of the study area. Note that private facilities as well as public ones were studied.

The following is a list of all the off-street parking facilities contained within the study area.

1. Falconer Funeral Home
2. Burger King
3. Dutch Bros. Coffee
4. Dairy Queen
5. Gilbert Commerce Center
6. Gravel Lot Between Ash and Gilbert Road S of Juniper
7. Lot on NW Corner of Ash and Vaughn
8. Vaughn West Garage
9. Interior Lot East of Vaughn West Garage
10. Vaughn East Garage
11. WanderJaunt Downtown Gilbert Apts.
12. Lot W of Oak
13. Lot SW Corner of Ash and Vaughn
14. Parking Around New Building on SE Corner of Vaughn and Ash
15. Parking in Front of Oregano's
16. Hale Theater Parking
17. Parking Behind Snooze and Postino East
18. Private Parking Behind Whiskey Row and Joe's BBQ
19. Lot NW Corner of Elm and Page
20. Lot SW Corner of Ash and Page
21. Interior Lot SWC of Gilbert and Page
22. Lot SW Corner of Elm and Page
23. Interior Lot NW Corner of Gilbert and Cullumber
24. Lot SE Corner of Gilbert and Cullumber
25. Clement's Auto Repair
26. Cullumber Church of Christ
27. District Lofts
28. Mercy Commons Apts.
29. Community Senior Center & Gilbert Heritage Center
30. Gilbert Community Church
31. GCM Liquor
32. Gilbert Chamber of Commerce
33. Hundred North
34. St. Thomas Byzantine Catholic Church W Lot
35. St. Thomas Byzantine Catholic Church E Lot
36. Arthouse Gilbert
37. Gilbert Now Realty
38. Antique Gardens
39. Dentist
40. Daniel's Jewelry
41. Arizona Hardwood Floor Supply
42. Gilbert Historical Society Lot
43. Gilbert Public Schools Education Complex

ON-STREET PARKING

In all, there were 45 on-street corridors within the Heritage District where at least one parking space was present on either side of the street. Corridors with no parking, such as all of Gilbert Road or Ash Street north of the parking garage, were not included and not assigned a corridor ID.

Some of the street corridors that fall within the HD boundaries are located in adjacent residential neighborhoods that fall outside of the Heritage District sphere of influence, such as Shaylee Lane or Sage Lane on the far northeast corner of the study area.

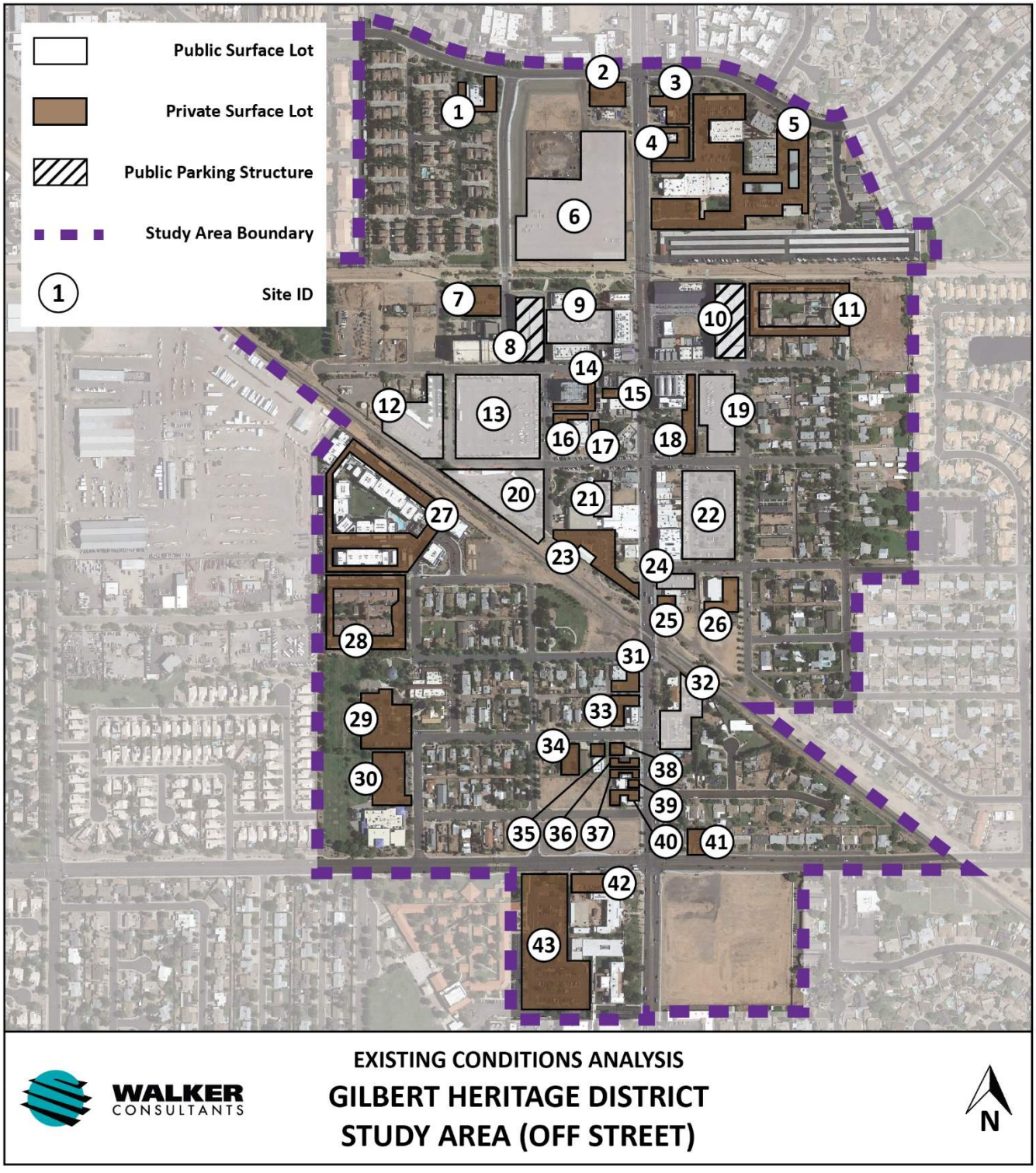
It should be noted that, as of this writing, not all of the on-street corridors identified below were studied due to the limited amount of in-the-field work that was conducted as a result of the COVID-19 pandemic. Further comments on COVID-19 and the limited scope of field work can be found in the following section of the report on Methodology.

The following is a list of all the corridors with on-street parking contained within the study area.

44. Juniper Ave. (Gilbert to Elm)
45. Juniper Ave. (Elm to Sage)
46. Shaylee Ln.
47. Sage Ln.
48. Vaughn Ave. (Study Area Boundary to Oak)
49. Vaughn Ave. (Oak to Ash)
50. Vaughn Ave. (Ash to Gilbert)
51. Vaughn Ave. (Gilbert to Elm)
52. Vaughn Ave. (Elm to Palm)
53. Page Ave. (Ash to Gilbert)
54. Page Ave. (Gilbert to Elm)
55. Page Ave. (Elm to Palm)
56. Cullumber Ave. (Gilbert to Elm)
57. Cullumber Ave. (Elm to Palm)
58. Cullumber Ave. (Palm to Study Area Boundary)
59. Park Ave. (Elm to Palm)
60. Ash St. (Juniper to Vaughn)
61. Ash St. (Vaughn to Page)
62. Ash St. (Page to Dead End)
63. Elm St. (Vaughn to Page)
64. Elm St. (Page to Cullumber)
65. Elm St. (Cullumber to Park)
66. Elm St. (Park to Study Area Boundary)
67. Palm St. (Vaughn to Page)
68. Palm St. (Page to Cullumber)
69. Palm St. (Cullumber to Park)
70. Palm St. (Park to Study Area Boundary)
71. Cullumber Ave. (Oak to Ash)
72. Park Ave. (Oak to Ash)
73. Park Ave. (Ash to Gilbert)
74. Bruce Ave. (Oak to Ash)
75. Bruce Ave. (Ash to Gilbert)
76. Washington Ave. (Oak to Ash)
77. Washington Ave. (Ash to Gilbert)
78. Linda Ln. (Gilbert to Penny)
79. Linda Ln. (Penny to Cul de Sac)
80. Oak St. (Cullumber to Park)
81. Oak St. (Park to Bruce)
82. Oak St. (Bruce to Washington)
83. Oak St. (Washington to Elliot)
84. Ash St. (Cullumber to Park)
85. Ash St. (Park to Bruce)
86. Ash St. (Bruce to Washington)
87. Ash St. (Washington to Elliot)
88. Penny Pl. (Linda to Cul de Sac)

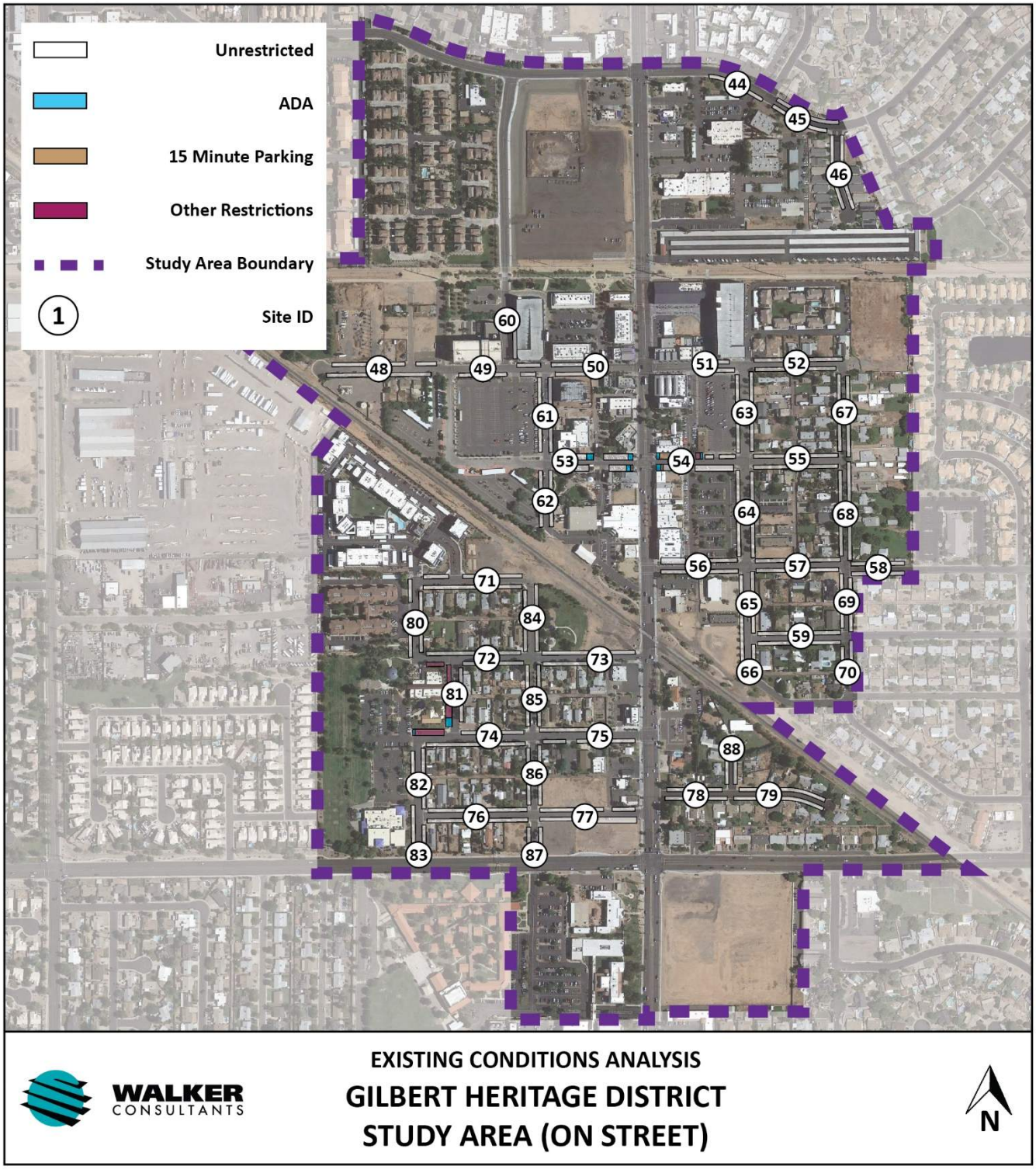
Figure 2, on the next page, depicts the study area boundary including all on-street and off-street public parking studied in 2020. Note that, for the figure showing off-street parking, we denote whether parking was private or public. **Figure 3**, showing on-street parking, shows which side of the streets parking was allowed, as well as denote any observed parking restrictions and the approximate location of those restrictions.

Figure 2: Study Area (Off-street Parking)



Source: Walker Consultants

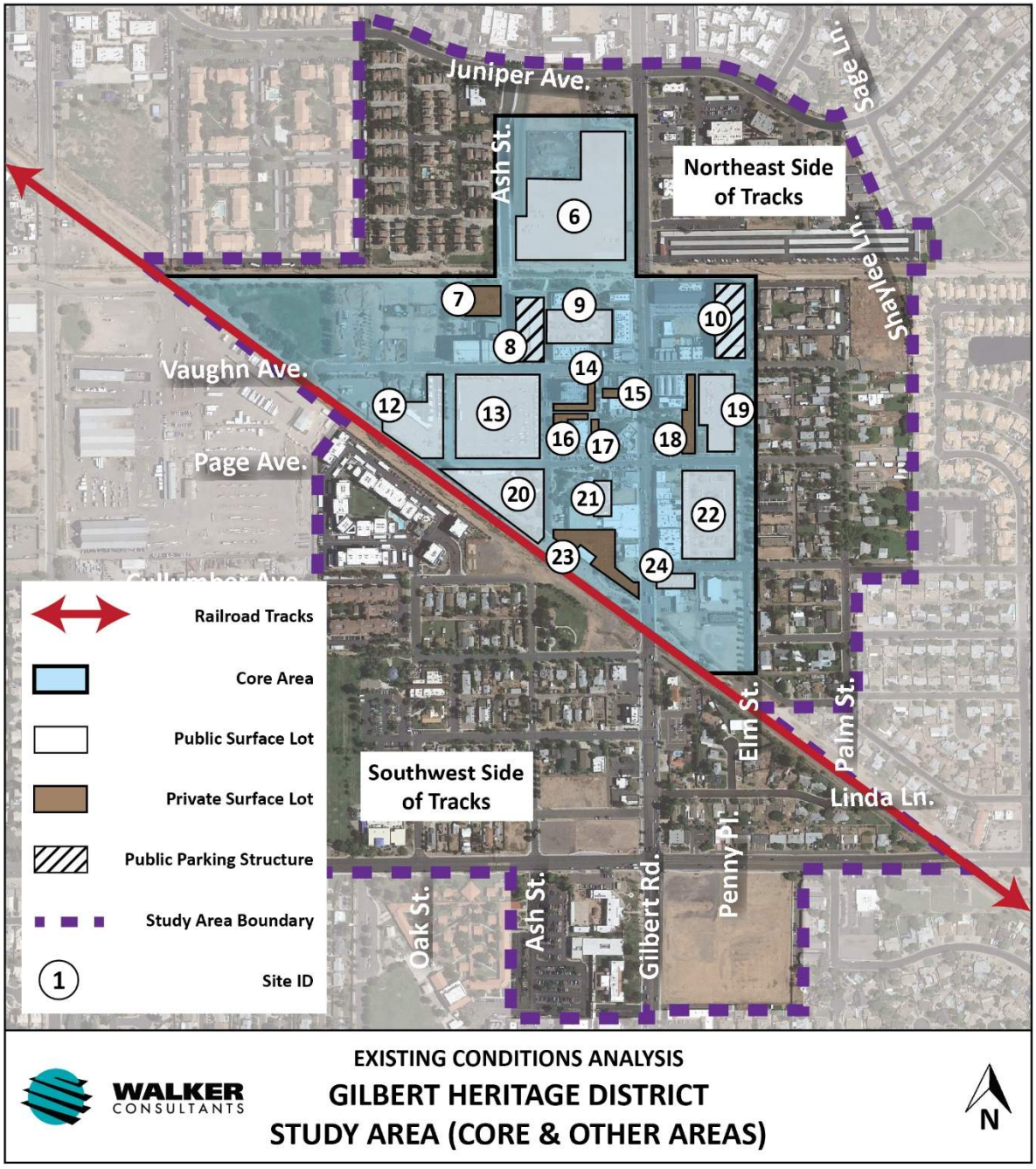
Figure 3: Study Area (On-street Parking)



Source: Walker Consultants

In this Existing Conditions section as well as the Future Conditions section, data is sometimes grouped and discussed in terms of various sub-areas within the Heritage District, namely the Core Area and the areas northeast and southwest of the Union Pacific railroad right-of-way that roughly divides the HD in half. **Figure 4** displays those sub-areas.

Figure 4: Study Area (Core & Other Areas)



Source: Walker Consultants

STUDY METHODOLOGY

Walker's 2020 in-the-field study consisted of four distinct tasks, as described below. The scope of study has been modified somewhat due to the ongoing COVID-19 pandemic, which made full implementation of the original scope of field study impractical. Where applicable, the task descriptions and methodology described here have been amended to reflect the modified scope of field work conducted.

- **Parking inventory**

  Walker conducted a detailed inventory of the parking within the study area. This included all on-street as well as all non-residential off-street parking, whether private or public. Additionally, residential parking at the three multi-family apartment complexes within the area was inventoried.

  Inventory counts for many of the public parking facilities located in the core area were furnished to Walker by Town staff, in the form of a spreadsheet containing limited parking counts that were conducted in February 2020. For all the surface parking lots in that data, Walker confirmed the provided inventory numbers in the field and made adjustments when necessary. However, Walker directly carried over inventory numbers for the two parking structures.

  Parking supply in the large, temporary gravel surface lot between Ash and Juniper, identified above as Facility #6, was estimated, as the lot has no formal space demarcations. Walker measured the square footage of the lot and then applied industry-standard calculation rules of thumb used for estimating the number of parking spaces in a surface parking facility of any given size in order to determine that lot's parking supply.

  Parking at the storage units located south of the Gilbert Commerce Center, the now-closed businesses adjacent to the Vaughn East Parking Structure main entrance off of Gilbert Road, and any small multi-family apartment buildings that fall within the study area other than the three large, standalone complexes already identified was excluded from study. Also, private, residential driveways were excluded.

  For public on-street parking, Walker conducted a count of spaces where formal, striped space delineations exist, such as along Page and Vaughn Avenues within a block of Gilbert Road. For all other streets, on-street supply was estimated by measuring park-able curb length (accounting for driveways and other curb cuts) along each block segment. The park-able frontage length was then divided by 25 feet. While the typical curb length of marked parallel spaces is between 20' and 22', the lack of parallel space delineation typically leads to less exact parking maneuvering and therefore larger natural spacing between vehicles. The additional 2' margin accounts for this behavior.

  In addition to overall inventory counts, Walker made note of the location and type of parking restrictions that existed for all on-street parking within the study area. Also, Walker inventoried unrestricted spaces separately from ADA, or accessible, spaces, as well as "other" types of spaces, including loading spaces, 15-minute/"to go" spaces, or reserved spaces.

- **Parking occupancy counts**

  Walker conducted occupancy counts on June 2020 at most of the parking to be studied within the study area, as outlined in our study area maps above, on a typical weekday and typical Saturday. For the typical weekday, Walker conducted a set of counts during the early afternoon and again during the early evening. For the typical Saturday, which includes the farmers' market, Walker conducted counts in the late morning, prior to the farmers' market end time of 11 AM, and again during the late evening.

  These times were selected in order to maximize the likelihood of capturing peak parking demand loads for the weekday and weekend respectively. An early afternoon and early evening count during the weekday would capture peak non-entertainment or -restaurant related business demand, as well as capture peak lunchtime and dinnertime demand at the restaurants

  During the weekend, the Farmer's Market is the primary parking demand driver during the daytime, while differences in activity patterns due to bar/pub patronage, nightclub/nightlife, and theater/entertainment likely shift peak evening demand later towards the evening.

  One additional set of counts during the late night was conducted in order to capture maximum parking demand for the three multi-family residential complexes studied.

  In order to record counts and maximize efficiencies, Walker employed the use of proprietary software, installed on mobile devices, that enabled real-time, GIS-linked data entry. This software enables multiple data collectors to input data for the same study area at the same time and ensures via GPS location that counts are inputted correctly for each on-street and off-street parking asset.

  Due to the size of the study area, counts were conducted across a period of two hours. During the weekday, the early afternoon count took place between noon and 2 PM while the early evening count took place between 5 PM and 7 PM. The weekend late morning count took place between 10 AM and noon, with lots that primarily serve the farmers' market counted first. The weekend late evening count took place between 7 PM and 9 PM. Residential counts were conducted after 9 PM.

  Counts for all the surface parking lots within the study area were conducted on both field count days. However, occupancy counts of the two garages were not conducted due to limited resources as a result of COVID-19. Walker carried over representative weekday and weekend counts provided for February (which are more representative sample days) that were furnished by Town staff and used those to complete our data set, after making adjustments and projecting downward to account for overall decreases in system-wide demand between February 2020 and Walker's study days. This is described in further detail in the next section.

  On-street parking counts were limited to core area street corridors, which Walker defined as being within the area bounded by Vaughn and Cullumber Avenues and Palm and Ash Streets. On-street counts were determined based on length of stay data, described in further detail below. Because of this, occupancy figures were gathered hourly in the afternoon and evening on both study days. Walker utilized the highest hourly on-street occupancy counts for each primary time period of study in order to complete its overall parking occupancy data set and determine systemwide parking demand loads for the afternoon and evening counts.

Off-street occupancy counts were conducted in aggregate, with one count representing all parking occupancy, whether it be unrestricted, ADA, or "other." On-street occupancy counts were also conducted in aggregate, though they were still sorted by side of street.

- **Parking length of stay**

  During the typical weekday and Saturday that occupancy data was conducted, Walker collected length of stay data for the busiest public on-street parking within the District, which Walker defined as being the street corridors bounded by Vaughn, Cullumber, Palm, and Ash. This area captured most core-area on-street parking activity as well as captured the effects of any spillover parking demand that may be occurring into the residential areas immediately to the east of Elm Street.

  Length of stay data was collected every hour on both the weekday and the weekend. During the weekday, the day was broken up into daytime and nighttime periods, with five hours of data collected during each period. On both the weekday and weekend, data was collected between 10 AM and 2 PM during the daytime and between 5 PM and 9 PM during the nighttime.

  Data was analyzed across both the daytime and nighttime periods for each respective day, allowing Walker to determine whether vehicles were parked for up to 10 hours per day. Vehicles observed during all 10 hours were marked as "all day" parkers. Walker also kept track of 15 minute "to go" spaces separately and noted whether it observed any vehicles violating the time limit. Such loading spaces were recently established along Page Avenue in order to facilitate increased levels of food delivery activity resulting from the 2020 pandemic.

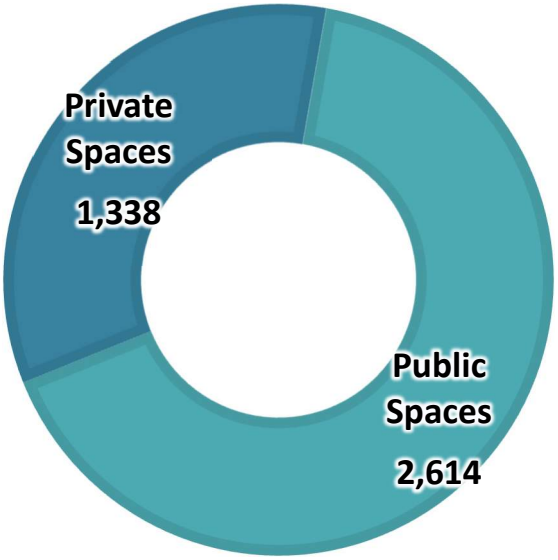
- **Representative destination observations from key parking facilities**

  In order to attain an approximate idea of where visitors to downtown Gilbert go after parking, Walker conducted sampling of origin and destination observations. This process involved personnel positioned at key vantage points near the entrances of the two Vaughn Avenue garages who were tasked with recording the general direction that visitors walked after parking, or the direction that visitors came from when returning to their parked vehicle. No personal information was recorded other than the general direction of travel per person or party.

  These passive observations, which involved no formal interception, were conducted between the hours of 3 PM and 5 PM during the weekend data collection day.

CURRENT PARKING SUPPLY

Within the boundaries of the Heritage District, Walker determined an overall off-street parking supply of 4,002 non-residential parking spaces. This consisted of 2,614 public spaces and 1,338 private spaces. For purposes of this study, private spaces were defined as spaces within lots that were not owned and operated by the Town of Gilbert, or lots that were not available for general public parking. Thus, parking at the Gilbert Community Senior Center and Heritage Center was classified as private parking.



When broken down by sub-area, there were 3,355 off-street spaces northeast of the railroad tracks and 647 off-street spaces southwest of the tracks. Within the core District area, bounded by the railroad tracks, Powerline Trail, and Elm Street, there were 2,706 spaces.

At the three multi-family residential complexes studied, there were a total of 450 parking spaces, including 47 single-space garages at the District Lofts.

Finally, Walker noted a total on-street parking supply of 978 spaces within the District boundaries, with 586 spaces northeast of the railroad tracks and 392 spaces to the southwest. In the Core Area, there were 405 spaces counted.

Systemwide, across all types of parking and all land uses, Walker counted 5,430 spaces.

Table 5, **Table 6**, and **Table 7** outline off-street and on-street parking inventory by parking facility or corridor, sorted by type of space and/or parking restriction.

Table 5: Off-street Parking Supply by Residential Area/Facility

Facility ID	Residential Facility Description	Type of Facility	Type of Space				Notes
			General	ADA	Other	Total	
11	WanderJaunt Downtown Gilbert Apts.	Private	83	3		86	
27	District Lofts	Private	221	6	47	274	Other are garages
28	Mercy Commons Apts.	Private	79	11		90	
Total Multi-Family Residential			**383**	**20**	**47**	**450**	

Source: Walker Consultants

Table 6: Off-street Parking Supply by Non-Residential Area/Facility

Facility ID	Facility Description	Type of Facility	Type of Space			Total	Notes
			General	ADA	Other		
1	Falconer Funeral Home	Private	30	1		31	
2	Burger King	Private	39	2		41	
3	Dutch Bros. Coffee	Private	10	1		11	
4	Dairy Queen	Private	30	2		32	
5	Gilbert Commerce Center	Private	441	15		456	
6	Gravel Lot Between Ash and Gilbert Road S of Juniper	Public	571	13		584	
7	Lot on NW Corner of Ash and Vaughn	Public	32	6		38	
8	Vaughn West Garage	Public	362	10		372	
9	Interior Lot East of Vaughn West Garage	Private	43	6	13	62	Other spaces are "to go" spaces
10	Vaughn East Garage	Public	580	16		596	Most of first two levels reserved for Culinary Dropout
12	Lot W of Oak	Public	79			79	
13	Lot SW Corner of Ash and Vaughn	Public	356	7		363	
14	Parking Around New Building on SE Corner of Vaughn and Ash	Private		7	9	16	Other spaces are reserved
15	Parking in Front of Oregano's	Private	4	3	5	12	Other spaces are 15 min spaces
16	Hale Theater Parking	Private		5	9	14	Other spaces are reserved
17	Parking Behind Snooze and Postino East	Private		2	5	7	Other spaces are "to go" and loading spaces
18	Private Parking Behind Whiskey Row and Joe's BBQ	Private	20	2	12	34	Other spaces are 15 min and reserved spaces
19	Lot NW Corner of Elm and Page	Public	129	10		139	
20	Lot SW Corner of Ash and Page	Public	122	4		126	
21	Interior Lot SWC of Gilbert and Page	Public	15	1		16	
22	Lot SW Corner of Elm and Page	Public	171	6		177	
23	Interior Lot NW Corner of Gilbert and Cullumber	Private	70	1		71	
24	Lot SE Corner of Gilbert and Cullumber	Public	36			36	
25	Clement's Auto Repair	Private	5			5	
26	Cullumber Church of Christ	Private	33	4		37	
29	Community Senior Center & Gilbert Heritage Center	Private	81	16		97	
30	Gilbert Community Church	Private	73	5	2	80	Other are police spaces
31	GCM Liquor	Private	6	1		7	
32	Gilbert Chamber of Commerce	Public	84	4		88	
33	Hundred North	Private	15	2		17	
34	St. Thomas Byzantine Catholic Church W Lot	Private	26			26	
35	St. Thomas Byzantine Catholic Church E Lot	Private	4	2		6	
36	Arthouse Gilbert	Private	7	1		8	
37	Gilbert Now Realty	Private	11			11	
38	Antique Gardens	Private	3			3	
39	Dentist	Private	6	1		7	
40	Daniel's Jewelry	Private	10	1		11	
41	Arizona Hardwood Floor Supply	Private	16	2		18	
42	Gilbert Historical Society Lot	Private	19	3		22	
43	Gilbert Public Schools Education Complex	Private	228	14	4	246	Other are loading spaces
		Total (Public)	**2,537**	**77**	**-**	**2,614**	
		Total (Private)	**1,230**	**99**	**59**	**1,388**	
		Total (Northeast of Tracks)	**3,178**	**124**	**53**	**3,355**	
		Total (Southwest of Tracks)	**589**	**52**	**6**	**647**	
		Total (Core Area)	**2,554**	**99**	**53**	**2,706**	
		Total (All)	**3,767**	**176**	**59**	**4,002**	

Source: Walker Consultants

Table 7: On-street Parking Supply by Corridor

Corridor ID	Corridor Description	Type of Space					NE	SW	Total	Notes
		Unrestricted	15-Minute	ADA	Loading	Other				
44	Juniper Ave. (Gilbert to Elm)	8					0	8	8	
45	Juniper Ave. (Elm to Sage)	28					15	13	28	
46	Shaylee Ln.	21					12	9	21	
47	Sage Ln.	27					13	14	27	
48	Vaughn Ave. (Study Area Boundary to Oak)	30					14	17	30	
49	Vaughn Ave. (Oak to Ash)	14					4	10	14	
50	Vaughn Ave. (Ash to Gilbert)	17					13	9	22	
51	Vaughn Ave. (Gilbert to Elm)	7					1	6	7	
52	Vaughn Ave. (Elm to Palm)	29					14	15	29	
53	Page Ave. (Ash to Gilbert)	37	2	6			28	17	45	
54	Page Ave. (Gilbert to Elm)	19	8	5		3	13	22	35	Church only
55	Page Ave. (Elm to Palm)	23					11	12	23	
56	Cullumber Ave. (Gilbert to Elm)	29					17	11	29	
57	Cullumber Ave. (Elm to Palm)	21					10	11	21	
58	Cullumber Ave. (Palm to Study Area Boundary)	19					10	9	19	
59	Park Ave. (Elm to Palm)	25					13	13	25	
60	Ash St. (Juniper to Vaughn)	6					6	0	6	
61	Ash St. (Vaughn to Page)	26					13	15	28	
62	Ash St. (Page to Dead End)	15					7	8	15	
63	Elm St. (Vaughn to Page)	28					13	14	28	
64	Elm St. (Page to Cullumber)	27					12	15	27	
65	Elm St. (Cullumber to Park)	17					10	7	17	
66	Elm St. (Park to Study Area Boundary)	10					4	6	10	
67	Palm St. (Vaughn to Page)	22					11	11	22	
68	Palm St. (Page to Cullumber)	24					12	12	24	
69	Palm St. (Cullumber to Park)	15					7	8	15	
70	Palm St. (Park to Study Area Boundary)	11					6	6	11	
71	Cullumber Ave. (Oak to Ash)	27					14	13	27	
72	Park Ave. (Oak to Ash)	21				4	17	8	25	Com. Center Only, no overnight
73	Park Ave. (Ash to Gilbert)	30					17	13	30	
74	Bruce Ave. (Oak to Ash)	21		1		14	24	12	36	Com. Center Only, no overnight
75	Bruce Ave. (Ash to Gilbert)	18				6	20	3	24	Church only
76	Washington Ave. (Oak to Ash)	27					13	14	27	
77	Washington Ave. (Ash to Gilbert)	34					16	18	34	
78	Linda Ln. (Gilbert to Penny)	19					9	10	19	
79	Linda Ln. (Penny to Cul de Sac)	27					14	13	27	
80	Oak St. (Cullumber to Park)	18					9	9	18	
81	Oak St. (Park to Bruce)	10		4		9	23	0	23	Com. Center only, no overnight
82	Oak St. (Bruce to Washington)	18					8	10	18	
83	Oak St. (Washington to Elliot)	9					4	5	9	
84	Ash St. (Cullumber to Park)	19					10	9	19	
85	Ash St. (Park to Bruce)	18					10	8	18	
86	Ash St. (Bruce to Washington)	19					10	9	19	
87	Ash St. (Washington to Elliot)	8					4	4	8	
88	Penny Pl. (Linda to Cul de Sac)	12					6	6	12	
	Total (Northeast of Tracks)	**555**	**10**	**11**	**0**	**3**	**290**	**297**	**586**	
	Total (Southwest of Tracks)	**354**	**0**	**5**	**0**	**33**	**227**	**165**	**392**	
	Total (Core Area)	**374**	**10**	**11**	**0**	**3**	**199**	**206**	**405**	
	Total (All)	**909**	**10**	**16**	**0**	**36**	**516**	**462**	**978**	

Source: Walker Consultants

CURRENT PARKING RESTRICTIONS

The vast majority of both off-street and on-street parking within the District is unrestricted. However, there are a few exceptions. Four of the core-area surface lots have spaces reserved for "to go" or food delivery parking. Also, most of the first two levels of the Vaughn East Garage are marked as reserved for Culinary Dropout. A total of 176 off-street, non-residential spaces are reserved for accessible parking.

Restricted on-street parking can be found mostly along Page Avenue within the Core Area. Along Page on both sides of Gilbert Road, a total of 11 accessible spaces, 10 15-minute-only spaces, and 3 church-only spaces can be found. Outside of the Page corridor, on-street parking was also restricted adjacent to the Gilbert Senior Center and Heritage Center. In those spaces, no overnight parking is permitted, and they are reserved for guests of the Senior Center and Heritage Center only.

The locations of on-street parking restrictions are depicted in Figure 2 on page 13 above.

While not currently allocated, approximately 150 of the West Parking Garage parking spaces are designated for use by the University Building per an Administrative Use Permit. Should the parking garage become more utilized, signing spaces as reserved for the University Building's patrons may be necessary based on the Administrative Use Permit. Reserving spaces for specific users removes the ability for those spaces to be shared and may significantly impact the efficiency of the facility's use.

EFFECTIVE OFF-STREET PARKING SUPPLY

The effective parking supply is determined by applying an effective supply factor to the physical parking supply for each user group in the parking system inventory. It is a generally accepted principle in parking supply/demand analyses that a supply of parking operates at optimum efficiency when occupancy is no more than 85% to 95% of the total supply. The unused spaces provide a "cushion" to allow for the dynamics of vehicles moving in and out of parking stalls and to reduce the time required to search for the last few available spaces. This cushion also allows for daily, weekly, and seasonal variations/vacancies created by restricting facilities to certain users, mis-parked vehicles (such as vehicles straddling a striped delineation and therefore occupying more than one space), and minor construction.

An **Effective Supply Factor** is an industry standard factor intended to account for real world operating behaviors that typically prevent facilities from effectively operating at a true 100% utilization.

When occupancy exceeds optimum levels, there may be delays and frustration in finding available parking, patrons may be forced to use an undesirable space, such as one at a greater or uncomfortable walking distance. The parking supply may be perceived as inadequate, even though vacant spaces are still available somewhere in the system.

As a result, the effective parking supply is used for analysis of the adequacy of the parking system rather than the total supply. This cushion typically varies between 5% and 15% of the total parking capacity, depending on the type of parking area/facility.

For the Heritage District, an average effective supply factor of 10% was applied to the non-residential off-street public parking system. This average takes into account a factor of 15% that was applied to the one public parking lots with irregular geometry and a lack of visible space delineation/striping (the lot between Ash and Gilbert Road) and 10% that was applied to more formal public lots with clear striping. For residential parking, an effective supply factor of 5% was applied to account for the more habitual and familiar nature of parking in those spaces. Adjustments were not made to on-street supply as Walker already used conservative methods in calculating the majority of the on-street parking supply that already account for space usage inefficiencies.

Table 8 and **Table 9** show effective non-residential and residential off-street parking supply after making adjustments. Overall, the off-street supply decreases from 4,452 spaces to 4,000. This leaves a “cushion” of 452 spaces to allow for the dynamic nature of the parking system.

Table 8: Effective Off-street Parking Supply by Non-Residential Area/Facility

Facility ID	Facility Description	Type of Facility	Total Spaces	ESF Applied	Effectie Supply
1	Falconer Funeral Home	Private	31	10%	28
2	Burger King	Private	41	10%	37
3	Dutch Bros. Coffee	Private	11	10%	10
4	Dairy Queen	Private	32	10%	29
5	Gilbert Commerce Center	Private	456	10%	410
6	Gravel Lot Between Ash and Gilbert Road S of Juniper	Public	584	15%	497
7	Lot on NW Corner of Ash and Vaughn	Public	38	10%	34
8	Vaughn West Garage	Public	372	10%	335
9	Interior Lot East of Vaughn West Garage	Private	62	10%	56
10	Vaughn East Garage	Public	596	10%	536
12	Lot W of Oak	Public	79	10%	71
13	Lot SW Corner of Ash and Vaughn	Public	363	10%	327
14	Parking Around New Building on SE Corner of Vaughn and Ash	Private	16	10%	14
15	Parking in Front of Oregano's	Private	12	10%	11
16	Hale Theater Parking	Private	14	10%	13
17	Parking Behind Snooze and Postino East	Private	7	10%	6
18	Private Parking Behind Whiskey Row and Joe's BBQ	Private	34	10%	31
19	Lot NW Corner of Elm and Page	Public	139	10%	125
20	Lot SW Corner of Ash and Page	Public	126	10%	113
21	Interior Lot SWC of Gilbert and Page	Public	16	10%	14
22	Lot SW Corner of Elm and Page	Public	177	10%	159
23	Interior Lot NW Corner of Gilbert and Cullumber	Private	71	10%	64
24	Lot SE Corner of Gilbert and Cullumber	Public	36	10%	32
25	Clement's Auto Repair	Private	5	15%	4
26	Cullumber Church of Christ	Private	37	10%	33
29	Community Senior Center & Gilbert Heritage Center	Private	97	10%	87
30	Gilbert Community Church	Private	80	10%	72
31	GCM Liquor	Private	7	10%	6
32	Gilbert Chamber of Commerce	Public	88	10%	79
33	Hundred North	Private	17	10%	15
34	St. Thomas Byzantine Catholic Church W Lot	Private	26	10%	23
35	St. Thomas Byzantine Catholic Church E Lot	Private	6	10%	5
36	Arthouse Gilbert	Private	8	10%	7
37	Gilbert Now Realty	Private	11	10%	10
38	Antique Gardens	Private	3	10%	3
39	Dentist	Private	7	10%	6
40	Daniel's Jewelry	Private	11	10%	10
41	Arizona Hardwood Floor Supply	Private	18	10%	16
42	Gilbert Historical Society Lot	Private	22	10%	20
43	Gilbert Public Schools Education Complex	Private	246	10%	221
		Total (Public)	**2,614**		**2,324**
		Total (Private)	**1,388**		**1,249**
		Total (Northeast of Tracks)	**3,355**		**2,990**
		Total (Southwest of Tracks)	**647**		**582**
		Total (Core Area)	**2,706**		**2,439**
		Total (All)	**4,002**		**3,573**

Source: Walker Consultants

Table 9: Effective Off-street Parking Supply by Residential Area/Facility

Facility ID	Residential Facility Description	Type of Facility	Total Spaces	ESF Applied	Effectie Supply
11	WanderJaunt Downtown Gilbert Apts.	Private	86	5%	82
27	District Lofts	Private	274	5%	260
28	Mercy Commons Apts.	Private	90	5%	86
	Total Multi-Family Residential		**450**		**428**

Source: Walker Consultants

PARKING OCCUPANCY

Walker conducted counts of all parked vehicles in all surface parking lots, private and public, within the study areas as identified in Figure 1 on Page 5, as well as counts of parked vehicles along the key core area corridors that fall within the area bounded approximately by Vaughn and Cullumber Avenues and Ash and Elm Streets. Weekday counts were conducted on Thursday, June 18th, 2020 and weekend counts were conducted on Saturday, June 20th, 2020.

Weather on both survey days was typical for early summer in Gilbert, with hot and dry conditions prevailing all day.

NOTE ABOUT FIELD WORK

The ongoing COVID-19 pandemic in the United States delayed data collection for this study. Principal data collection for this study was scheduled to begin in mid-March, just as most states were implementing significant travel restrictions, business closure mandates, and "safe-at-home" or "safer-at-home" orders. Arizona's version of these mandates, in the form of an executive order sub-titled "Stay Home, Stay Healthy, Stay Connected," initially took effect on March 31 and lasted through the end of April. Due to the unprecedented nature of the situation, Walker, with the advice and consent of Town staff, agreed to postpone data collection until conditions warranted.

By late May and early June 2020, the overall infection curve in most states had flattened to the point where those states proceeded with allowing most businesses, restaurants, and bars to re-open, with restrictions. While those restrictions varied from state to state and from jurisdiction to jurisdiction, it should be noted that Arizona, on a statewide basis, had allowed most mandatory restrictions to expire at the end of April, in line with an overall relatively low infection rate that had prevailed in the state in spring and early summer.

Walker, with the advice of Town staff, concluded that conditions related to COVID-19 had lessened by early June to the point where a representative data collection plan could be scheduled and implemented. However, data collection in early June was postponed again due to safety concerns for Walker as a result of protest events that were taking place in the Phoenix metro area.

Walker was finally able to complete representative data collection mid-June, after protesting activity, and safety concerns as a function of that activity, had largely subsided. Initially, Walker had targeted completion of parking inventory and length of stay/duration data collection. However, while conducting inventory counts, Walker observed that Heritage District activity and foot traffic levels were robust, and that nearly all restaurants and bars were open for business with only minor restrictions. Also, the Farmer's Market was still operating normally.

At the time of Walker's visit, a handful of small businesses remained closed as a result of prior protest activity that had affected the District earlier in the month of June. Also, the Hale Theater was closed, as theaters and live performances were not in operation as a result of COVID-19-related restrictions. Finally, in-person classes were not taking place at Park University's Gilbert campus.

After observing mostly normalized activity within the core area of the Heritage District, Walker proceeded with parking occupancy data collection, as well as origin/destination analysis, with the understanding that June 2020 occupancy data would likely have to be calibrated in order to estimate or project what peak annual occupancy would have been in March 2020 under normal, non-pandemic conditions. Even without the effects or potential effects of both the pandemic and protest activity on overall Heritage District activity and parking demand, it is understood by Walker that there is typically a seasonal annual activity peak during February and March (spring break and baseball spring training). Summer represents an off-peak period for the District due to heat as well as due to the fact that winter season residents are typically away.

In order to calibrate counts, Walker utilized parking occupancy counts for some core area public surface lots that were conducted in February 2020, right before the pandemic situation materialized. These counts were furnished to Walker by Gilbert and were conducted by another firm for the Town related to another project. Also, certain monthly tax revenue data sets were used and compared between June 2020 and January and February 2020. Details on these calibration methodologies are provided later on in this section.

Walker determined that calibration for on-street data collection was not required. In June, Walker determined that most on-street parking in the core area was effectively full during all observations, and thus on-street parking demand levels would have been unchanged relative to March.

While it is possible that spillover on-street parking demand between Elm and Palm Streets may have occurred in March, it is typically the case in most downtown parking systems that close-in on-street parking will fill up before surface lots and well before parking structures, especially if unmanaged (available at no charge with no time limits). Because of this hierarchy of how parking demand typically "fills in," June on-street observed demand is likely representative for any other month of the year, given a particular day or time.

Also, parking demand resulting from residential land uses is likely to have been unaffected by either seasonal differences or the pandemic. Therefore, the off-street residential parking facility counts were also not calibrated.

OFF-STREET PARKING OCCUPANCY

UNCALIBRATED OFF-STREET OCCUPANCY COUNTS

Table 10 displays combined, raw occupancy data that was collected by Walker for all surface parking lots located within the study area. It also shows occupancy data for some core area surface lots, as well as the two parking structures, that was collected in February 2020. Cells left blank indicate that there is no occupancy data available for a lot or structured parking facility on a given day and time.

Table 10: Raw Occupancy Counts for All Off-Street Parking Facilities, February 2020 and June 2020

Facility ID	Facility Description	Total Supply	Demand							
			Thurs Eve	Fri Eve	Sat Aft	Sat Eve	Thurs Aft	Thurs Eve	Sat Aft	Sat Eve
			3/5/20	3/6/20	3/7/20	3/7/20	6/18/20	6/18/20	6/20/20	6/20/20
1	Falconer Funeral Home	31					8	6	5	6
2	Burger King	41					7	5	6	12
3	Dutch Bros. Coffee	11					0	0	0	0
4	Dairy Queen	32					3	12	17	23
5	Gilbert Commerce Center	456					162	23		
6	Gravel Lot Between Ash and Gilbert Road S of Juniper	584					12	69	26	68
7	Lot on NW Corner of Ash and Vaughn	38	21	3	26	6	4	0	0	0
8	Vaughn West Garage	372	155	289	266	225				
9	Interior Lot East of Vaughn West Garage	62	50	54	55	58	48	50	57	59
10	Vaughn East Garage	596	189	495	291	502				
12	Lot W of Oak	79	29	4	64	1	4	0	57	2
13	Lot SW Corner of Ash and Vaughn	363	236	361	351	363	71	128	143	96
14	Parking Around New Building on SE Corner of Vaughn and Ash	16					9	6	11	6
15	Parking in Front of Oregano's	12					4	2	7	2
16	Hale Theater Parking	14					7	1	2	3
17	Parking Behind Snooze and Postino East	7					2	1	3	1
18	Private Parking Behind Whiskey Row and Joe's BBQ	34					28	30	31	30
19	Lot NW Corner of Elm and Page	139	144	133	139	139	33	106	82	100
20	Lot SW Corner of Ash and Page	126	9	73	11	55	10	4	0	8
21	Interior Lot SWC of Gilbert and Page	16	17	14	17	15	15	16	16	15
22	Lot SW Corner of Elm and Page	177	166	177	161	173	84	54	68	97
23	Interior Lot NW Corner of Gilbert and Cullumber	71	29	31	58	32	43	25	28	29
24	Lot SE Corner of Gilbert and Cullumber	36	26	37	30	31	8	2	4	3
25	Clement's Auto Repair	5					0	0	0	0
26	Cullumber Church of Christ	37					0	0	0	0
29	Community Senior Center & Gilbert Heritage Center	97					19	12	22	8
30	Gilbert Community Church	80					13	3	19	3
31	GCM Liquor	7					7	4	5	7
32	Gilbert Chamber of Commerce	88					2	2	4	2
33	Hundred North	17					3	12	2	8
34	St. Thomas Byzantine Catholic Church W Lot	26					0	0	0	0
35	St. Thomas Byzantine Catholic Church E Lot	6					0	0	0	0
36	Arthouse Gilbert	8					1	1	1	1
37	Gilbert Now Realty	11					0	0	0	0
38	Antique Gardens	3					1	0	3	0
39	Dentist	7					2	0	1	0
40	Daniel's Jewelry	11					4	0	3	1
41	Arizona Hardwood Floor Supply	18					6	1	10	1
42	Gilbert Historical Society Lot	22					1	0	0	0
43	Gilbert Public Schools Education Complex	246					35	6	8	4

Source: Walker Consultants, Field Data Services of Arizona, Inc.

CALIBRATION METHODOLOGY

In order to populate the missing data items and complete the data set in order to allow us to estimate what peak systemwide off-street parking occupancy is during a typical March, Walker compared data directly for all parking facilities for which data was available from both February and June. It then calculated the difference between March and June for each facility.

In all, there were 10 parking facilities for which data was available for both months. Because percentage differences varied substantially from lot to lot, it was necessary to aggregate all the lots together in order to determine a representative sample for systemwide parking occupancy. For instance, Facility #9, the interior lot east of the Vaughn West Garage, was virtually full, not including to-go spaces, during both months. On the other hand, parking activity in Facility #7, which serves Park University, was high during the Thursday evening and Saturday afternoon counts in February but was nearly non-existent in June.

Table 11 compares February and June data for the 10 lots for which there was data from both months and shows percent differences and resultant scaling factors calculated. Note that there is no Thursday afternoon data from February and no Friday evening data from June, so those days were not included below.

Table 11: Percentage Differences between February and June 2020 Data for Selected Off-Street Parking Facilities

Facility ID	Facility Description	Total Supply	Scaling Factors (Difference between June and March Counts for Selected Lots)								
			Thurs Eve 3/5/20	Thurs Eve 6/18/20	Percent Difference	Sat Aft 3/7/20	Sat Aft 6/20/20	Percent Difference	Sat Eve 3/7/20	Sat Eve 6/20/20	Percent Difference
7	Lot on NW Corner of Ash and Vaughn	38	21	0	100%	26	0	100%	6	0	100%
9	Interior Lot East of Vaughn West Garage	62	50	50	0%	55	57	-4%	58	59	-2%
12	Lot W of Oak	79	29	0	100%	64	57	11%	1	2	-100%
13	Lot SW Corner of Ash and Vaughn	363	236	128	46%	351	143	59%	363	96	74%
19	Lot NW Corner of Elm and Page	139	144	106	26%	139	82	41%	139	100	28%
20	Lot SW Corner of Ash and Page	126	9	4	56%	11	0	100%	55	8	85%
21	Interior Lot SWC of Gilbert and Page	16	17	16	6%	17	16	6%	15	15	0%
22	Lot SW Corner of Elm and Page	177	166	54	67%	161	68	58%	173	97	44%
23	Interior Lot NW Corner of Gilbert and Cullumber	71	29	25	14%	58	28	52%	32	29	9%
24	Lot SE Corner of Gilbert and Cullumber	36	26	2	92%	30	4	87%	31	3	90%
	Total	**1,107**	**727**	**385**	**47%**	**912**	**455**	**50%**	**873**	**409**	**53%**
	Scaling Factors Applied				**1.89**			**2.00**			**2.13**

Source: Walker Consultants, Field Data Services of Arizona, Inc.

After comparison, there was approximately a 47% difference between Thursday evening data, a 50% difference between Saturday afternoon data, and a 53% difference between Saturday evening data.

As a result, for the 10 core area surface lots shown in Table 11, Walker estimates that occupancy in March, in aggregate, would have been approximately 1.89x higher in March on Thursday evening, twice as high during Saturday afternoon, and 2.13x higher during Saturday evening.

CALIBRATED OFF-STREET OCCUPANCY COUNTS

Table 12, on the next page, shows calibrated occupancy figures for all off-street parking facilities within the District.

Cells in light green indicate that the relevant scaling factor for a particular day and time was applied to the June data for that facility and then scaled up to populate missing March data.

Cells in beige indicate that the relevant scaling factor for a particular day and time was not applied, and June data was carried over unadjusted. March figures for such parking facilities were considered to be representative of March due to being substantially unaffected by either the pandemic or by seasonality or other factors.

For instance, the Falconer Funeral Home is an essential service. Also, its parking demand is mostly a function of its employees, and parking demand patterns therefore would have been unchanged as long as the business was not closed due to the pandemic. Church parking activity normally peaks on Sundays, with other days exhibiting relatively low parking activity. Therefore, church parking activity within the study area on a Saturday evening is likely to be zero or nearly zero regardless of seasonality or the pandemic, assuming no special church events are happening.

Cells highlighted in blue indicate that the relevant scaling factor for a particular day and time was applied to the March data for that facility (both parking structures) and then scaled down to populate missing June data.

Because no Thursday afternoon data was available from March for the structures, the Thursday evening counts from March were scaled down even further based on the calculated percent difference for each structure between Saturday afternoon and Saturday evening in March. This was done in order to estimate and populate the Thursday afternoon counts for the structures in June, highlighted in orange.

The observed peak system-wide and core area occupancies are highlighted in yellow. Walker estimates that the systemwide peak occurred during the evening of Friday, March 6th, 2020.

Table 12: Calibrated Occupancy Counts for All Non-Residential Off-Street Parking Facilities

Facility ID	Facility Description	Total Supply	Demand							
			Thurs Eve	Fri Eve	Sat Aft	Sat Eve	Thurs Aft	Thurs Eve	Sat Aft	Sat Eve
			3/5/20	3/6/20	3/7/20	3/7/20	6/18/20	6/18/20	6/20/20	6/20/20
1	Falconer Funeral Home	31	6	6	5	6	8	6	5	6
2	Burger King	41	5	12	6	12	7	5	6	12
3	Dutch Bros. Coffee	11	0	0	0	0	0	0	0	0
4	Dairy Queen	32	12	23	17	23	3	12	17	23
5	Gilbert Commerce Center	456	43	43	32	20	162	23	32	20
6	Gravel Lot Between Ash and Gilbert Road S of Juniper	584	23	145	52	145	12	69	26	68
7	Lot on NW Corner of Ash and Vaughn	38	21	3	26	6	4	0	0	0
8	Vaughn West Garage	372	155	289	266	225	63	82	133	106
9	Interior Lot East of Vaughn West Garage	62	50	54	55	58	48	50	57	59
10	Vaughn East Garage	596	189	495	291	502	62	100	146	236
12	Lot W of Oak	79	29	4	64	1	4	0	57	2
13	Lot SW Corner of Ash and Vaughn	363	236	361	351	363	71	128	143	96
14	Parking Around New Building on SE Corner of Vaughn and Ash	16	11	13	16	13	9	6	11	6
15	Parking in Front of Oregano's	12	4	12	12	12	4	2	7	2
16	Hale Theater Parking	14	2	4	4	4	7	1	2	3
17	Parking Behind Snooze and Postino East	7	2	6	6	6	2	1	3	1
18	Private Parking Behind Whiskey Row and Joe's BBQ	34	30	30	31	30	28	30	31	30
19	Lot NW Corner of Elm and Page	139	144	133	139	139	33	106	82	100
20	Lot SW Corner of Ash and Page	126	9	73	11	55	10	4	0	8
21	Interior Lot SWC of Gilbert and Page	16	17	14	17	15	15	16	16	15
22	Lot SW Corner of Elm and Page	177	166	177	161	173	84	54	68	97
23	Interior Lot NW Corner of Gilbert and Cullumber	71	29	31	58	32	43	25	28	29
24	Lot SE Corner of Gilbert and Cullumber	36	26	37	30	31	8	2	4	3
25	Clement's Auto Repair	5	0	0	0	0	0	0	0	0
26	Cullumber Church of Christ	37	0	0	0	0	0	0	0	0
29	Community Senior Center & Gilbert Heritage Center	97	23	17	44	17	19	12	22	8
30	Gilbert Community Church	80	3	3	19	3	13	3	19	3
31	GCM Liquor	7	4	7	5	7	7	4	5	7
32	Gilbert Chamber of Commerce	88	4	4	8	4	2	2	4	2
33	Hundred North	17	17	17	4	17	3	12	2	8
34	St. Thomas Byzantine Catholic Church W Lot	26	0	0	0	0	0	0	0	0
35	St. Thomas Byzantine Catholic Church E Lot	6	0	0	0	0	0	0	0	0
36	Arthouse Gilbert	8	2	2	2	2	1	1	1	1
37	Gilbert Now Realty	11	0	0	0	0	0	0	0	0
38	Antique Gardens	3	0	0	3	0	1	0	3	0
39	Dentist	7	0	0	2	0	2	0	1	0
40	Daniel's Jewelry	11	0	2	6	2	4	0	3	1
41	Arizona Hardwood Floor Supply	18	6	1	10	1	6	1	10	1
42	Gilbert Historical Society Lot	22	0	0	0	0	1	0	0	0
43	Gilbert Public Schools Education Complex	246	11	9	16	9	35	6	8	4
	Total (Public)	**2,614**	**1,018**	**1,735**	**1,416**	**1,659**	**368**	**563**	**679**	**733**
	Total (Private)	**1,388**	**260**	**292**	**353**	**274**	**413**	**200**	**273**	**224**
	Total (Northeast of Tracks)	**3,355**	**1,209**	**1,965**	**1,650**	**1,872**	**687**	**722**	**874**	**922**
	Total (Southwest of Tracks)	**647**	**70**	**62**	**119**	**62**	**94**	**41**	**78**	**35**
	Total (Core Area)	**2,706**	**1,117**	**1,845**	**1,560**	**1,780**	**499**	**674**	**810**	**858**
	Total (All)	**4,002**	**1,279**	**2,028**	**1,769**	**1,934**	**781**	**763**	**952**	**957**

Source: Walker Consultants, Field Data Services of Arizona, Inc.

Table 13 shows off-street percent occupancy across all days.

Table 13: Calibrated Percent Occupancy for All Non-Residential Off-Street Parking Facilities

Facility ID	Facility Description	Percent Occupancy							
		Thurs Eve	Fri Eve	Sat Aft	Sat Eve	Thurs Aft	Thurs Eve	Sat Aft	Sat Eve
		3/5/20	3/6/20	3/7/20	3/7/20	6/18/20	6/18/20	6/20/20	6/20/20
1	Falconer Funeral Home	19%	19%	16%	19%	26%	19%	16%	19%
2	Burger King	12%	29%	15%	29%	17%	12%	15%	29%
3	Dutch Bros. Coffee	0%	0%	0%	0%	0%	0%	0%	0%
4	Dairy Queen	38%	72%	53%	72%	9%	38%	53%	72%
5	Gilbert Commerce Center	10%	9%	7%	4%	36%	5%	7%	4%
6	Gravel Lot Between Ash and Gilbert Road S of Juniper	4%	25%	9%	25%	2%	12%	4%	12%
7	Lot on NW Corner of Ash and Vaughn	55%	8%	68%	16%	11%	0%	0%	0%
8	Vaughn West Garage	42%	78%	72%	60%	17%	22%	36%	28%
9	Interior Lot East of Vaughn West Garage	81%	87%	89%	94%	77%	81%	92%	95%
10	Vaughn East Garage	32%	83%	49%	84%	10%	17%	24%	40%
12	Lot W of Oak	37%	5%	81%	1%	5%	0%	72%	3%
13	Lot SW Corner of Ash and Vaughn	65%	99%	97%	100%	20%	35%	39%	26%
14	Parking Around New Building on SE Corner of Vaughn and Ash	71%	80%	100%	80%	56%	38%	69%	38%
15	Parking in Front of Oregano's	31%	100%	100%	100%	33%	17%	58%	17%
16	Hale Theater Parking	13%	30%	29%	30%	50%	7%	14%	21%
17	Parking Behind Snooze and Postino East	27%	91%	86%	91%	29%	14%	43%	14%
18	Private Parking Behind Whiskey Row and Joe's BBQ	88%	88%	91%	88%	82%	88%	91%	88%
19	Lot NW Corner of Elm and Page	104%	96%	100%	100%	24%	76%	59%	72%
20	Lot SW Corner of Ash and Page	7%	58%	9%	44%	8%	3%	0%	6%
21	Interior Lot SWC of Gilbert and Page	106%	88%	106%	94%	94%	100%	100%	94%
22	Lot SW Corner of Elm and Page	94%	100%	91%	98%	47%	31%	38%	55%
23	Interior Lot NW Corner of Gilbert and Cullumber	41%	44%	82%	45%	61%	35%	39%	41%
24	Lot SE Corner of Gilbert and Cullumber	72%	103%	83%	86%	22%	6%	11%	8%
25	Clement's Auto Repair	0%	0%	0%	0%	0%	0%	0%	0%
26	Cullumber Church of Christ	0%	0%	0%	0%	0%	0%	0%	0%
29	Community Senior Center & Gilbert Heritage Center	23%	18%	45%	18%	20%	12%	23%	8%
30	Gilbert Community Church	4%	4%	24%	4%	16%	4%	24%	4%
31	GCM Liquor	57%	100%	71%	100%	100%	57%	71%	100%
32	Gilbert Chamber of Commerce	4%	5%	9%	5%	2%	2%	5%	2%
33	Hundred North	100%	100%	24%	100%	18%	71%	12%	47%
34	St. Thomas Byzantine Catholic Church W Lot	0%	0%	0%	0%	0%	0%	0%	0%
35	St. Thomas Byzantine Catholic Church E Lot	0%	0%	0%	0%	0%	0%	0%	0%
36	Arthouse Gilbert	24%	27%	25%	27%	13%	13%	13%	13%
37	Gilbert Now Realty	0%	0%	0%	0%	0%	0%	0%	0%
38	Antique Gardens	0%	0%	100%	0%	33%	0%	100%	0%
39	Dentist	0%	0%	29%	0%	29%	0%	14%	0%
40	Daniel's Jewelry	0%	19%	55%	19%	36%	0%	27%	9%
41	Arizona Hardwood Floor Supply	0%	0%	0%	0%	33%	6%	56%	6%
42	Gilbert Historical Society Lot	0%	0%	0%	0%	5%	0%	0%	0%
43	Gilbert Public Schools Education Complex	5%	3%	7%	3%	14%	2%	3%	2%
	Total (Public)	**39%**	**66%**	**54%**	**63%**	**14%**	**22%**	**26%**	**28%**
	Total (Private)	**18%**	**21%**	**25%**	**20%**	**30%**	**14%**	**20%**	**16%**
	Total (Northeast of Tracks)	**36%**	**59%**	**49%**	**56%**	**20%**	**22%**	**26%**	**27%**
	Total (Southwest of Tracks)	**10%**	**9%**	**17%**	**9%**	**15%**	**6%**	**12%**	**5%**
	Total (Core Area)	**41%**	**68%**	**58%**	**66%**	**18%**	**25%**	**30%**	**32%**
	Total (All)	**32%**	**51%**	**44%**	**48%**	**20%**	**19%**	**24%**	**24%**

Source: Walker Consultants, Field Data Services of Arizona, Inc.

Table 14: Occupancy and Percent Occupancy for All Residential Off-Street Parking Facilities

Facility ID	Residential Facility Description	Total Supply	Demand	
			Thurs Late Night 6/18/20	Percent Occupancy
11	WanderJaunt Downtown Gilbert Apts.	86	68	79%
27	District Lofts	274	256	93%
28	Mercy Commons Apts.	90	63	70%
	Total Multi-Family Residential	**450**	**387**	**86%**

Source: Walker Consultants

PEAK OFF-STREET OCCUPANCY

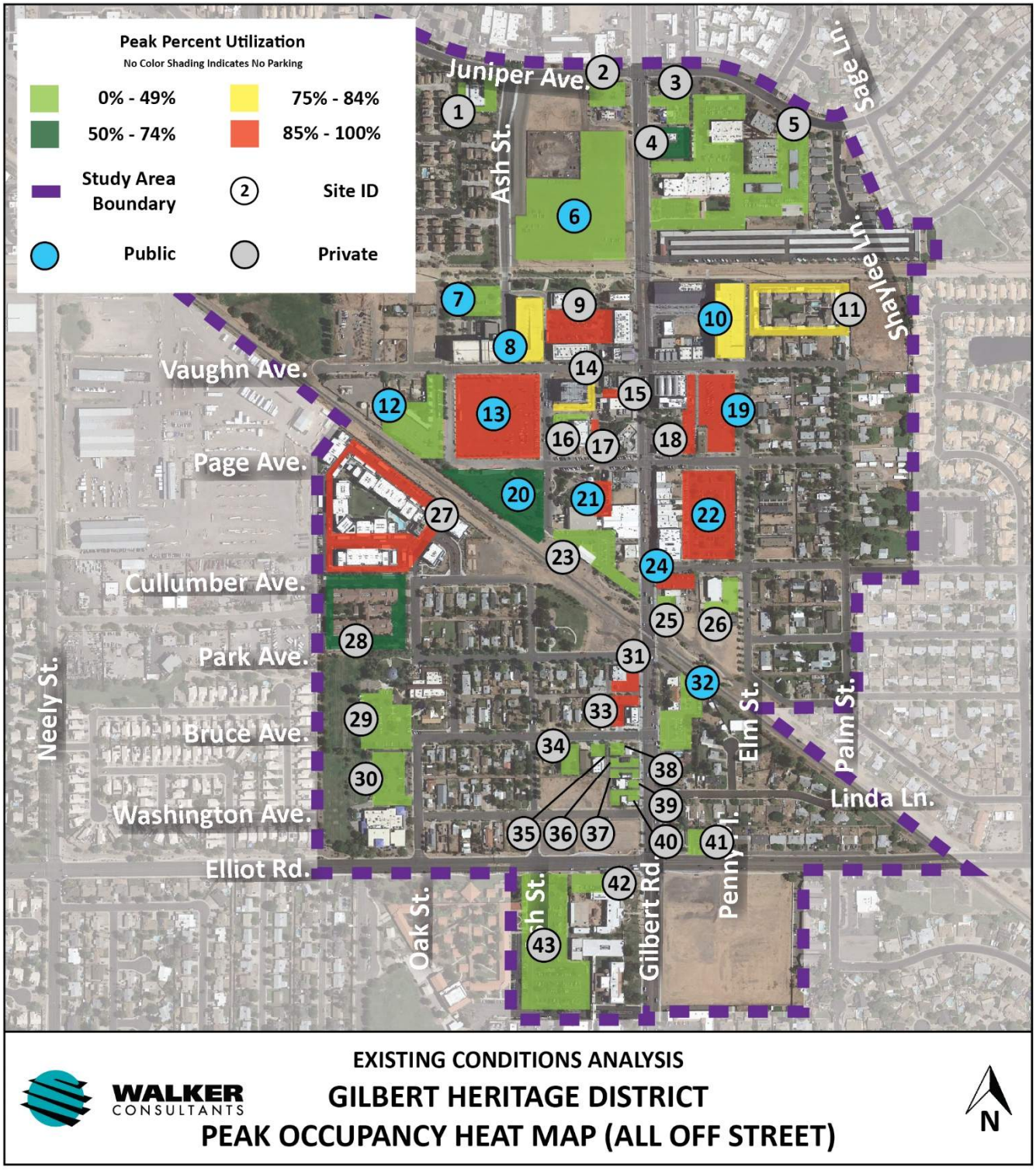
As shown in the previous tables, Walker estimates that the systemwide and core-area parking off-street parking peaks occurred on the Friday evening in March. Core area (non-residential) parking demand peaked at 1,845 vehicles, or 68% (66% system wide), while the entire area peaked at 2,027 vehicles, or 51%. Public parking across the HD peaked at 66%.

Percent occupancy by facility is estimated to have ranged from 0% at nine parking facilities to 100% at five facilities, though note that actual occupancy for the 100% full lots would have likely been between 85% and 95%, with the remaining lot demand being accommodated elsewhere in the system in nearby lots or structures that were less than 85% full.

Residential peak occupancy was observed to be 387 vehicles, or 86%, across all three residential apartment complexes studied, ranging from 70% at Mercy Commons to 93% at the District Lofts. The figure for District Lofts assumes that the single-space garages were occupied at 75%.

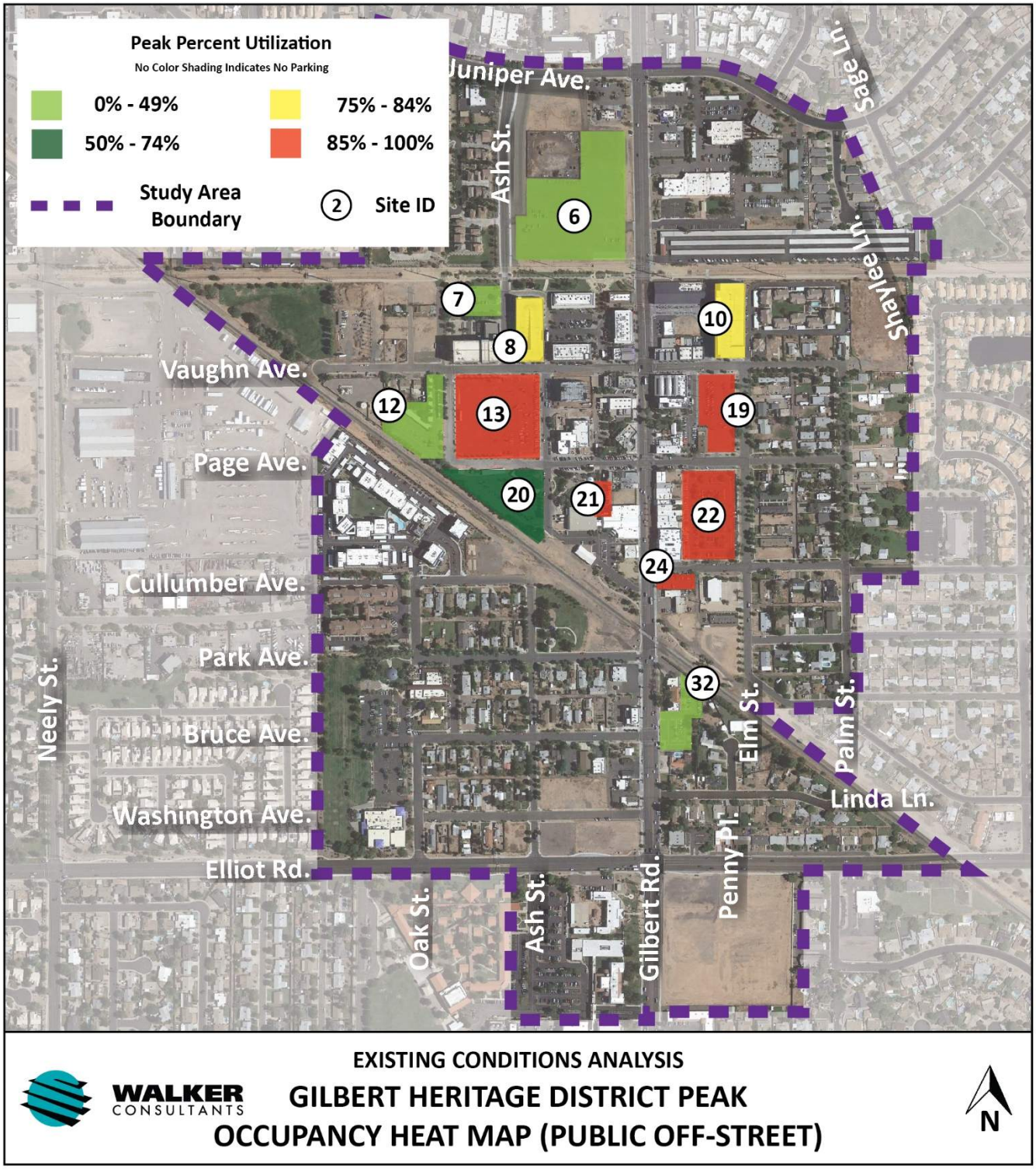
Figure 5, on the next page, shows an off-street occupancy heat map for all off-street parking facilities, as it would have occurred on Friday, March 6th with **Figure 6** showing just the public off-street parking facilities during the same time.

Figure 5: Peak Occupancy Heat Map (Off-street Parking)



Source: Walker Consultants

Figure 6: Peak Occupancy Heat Map (Public Off-street Parking Only)



Source: Walker Consultants

OFF-STREET PARKING ADEQUACY

Parking adequacy is the ability of the parking supply to handle the parking demand. This calculation is made by subtracting the peak parking demand from the effective parking supply. Systemwide, there was a non-residential parking adequacy, or surplus, observed during the Friday evening off-street peak of + 1,545 spaces. Within the core area, there was a parking surplus, of + 594 spaces.

For residential facilities, there was a surplus observed of + 41 spaces, ranging from + 4 to + 23 spaces.

Table 15 shows parking adequacy for off-street residential parking facilities, with non-residential parking facilities shown in **Table 16**.

Table 15: Off-street Parking Adequacy by Residential Parking Facility

Facility ID	Residential Facility Description	Type of Facility	Effective Supply	Peak Survey Day Demand (Typical Weekday Late Night)	Parking Adequacy
11	WanderJaunt Downtown Gilbert Apts.	Private	82	68	14
27	District Lofts	Private	260	256	4
28	Mercy Commons Apts.	Private	86	63	23
	Total Multi-Family Residential		**428**	**387**	**41**

Source: Walker Consultants

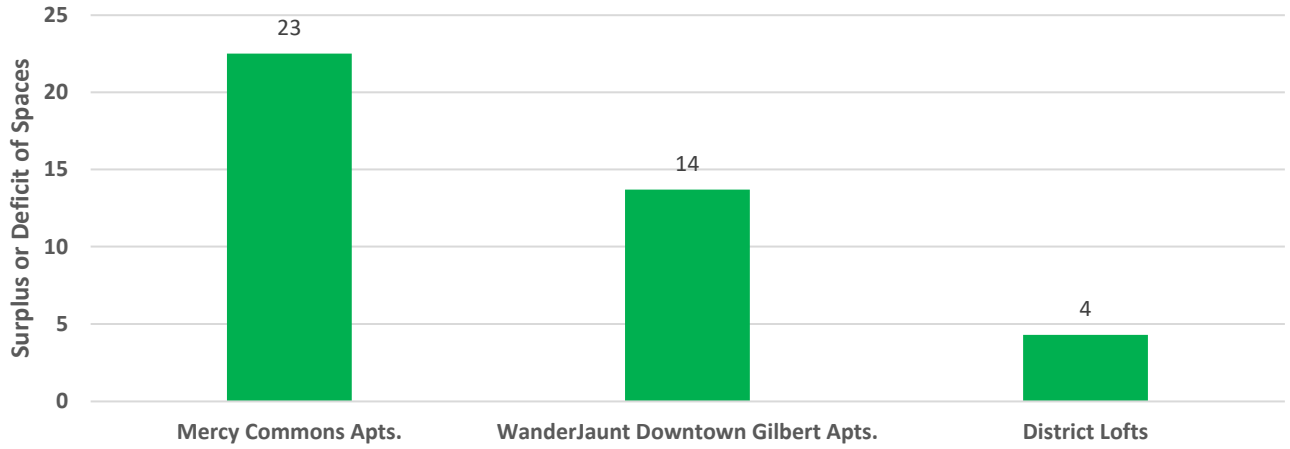
Table 16: Off-street Parking Adequacy by Non-Residential Parking Facility

Facility ID	Facility Description	Type of Facility	Effective Supply	Peak Survey Day Demand (Typical Friday Peak)	Parking Adequacy
1	Falconer Funeral Home	Private	28	6	22
2	Burger King	Private	37	12	25
3	Dutch Bros. Coffee	Private	10	0	10
4	Dairy Queen	Private	29	23	6
5	Gilbert Commerce Center	Private	410	43	368
6	Gravel Lot Between Ash and Gilbert Road S of Juniper	Public	497	145	352
7	Lot on NW Corner of Ash and Vaughn	Public	34	3	31
8	Vaughn West Garage	Public	335	289	46
9	Interior Lot East of Vaughn West Garage	Private	56	54	2
10	Vaughn East Garage	Public	536	495	41
12	Lot W of Oak	Public	71	4	67
13	Lot SW Corner of Ash and Vaughn	Public	327	361	-34
14	Parking Around New Building on SE Corner of Vaughn and Ash	Private	14	13	2
15	Parking in Front of Oregano's	Private	11	12	-1
16	Hale Theater Parking	Private	13	4	8
17	Parking Behind Snooze and Postino East	Private	6	6	0
18	Private Parking Behind Whiskey Row and Joe's BBQ	Private	31	30	1
19	Lot NW Corner of Elm and Page	Public	125	133	-8
20	Lot SW Corner of Ash and Page	Public	113	73	40
21	Interior Lot SWC of Gilbert and Page	Public	14	14	0
22	Lot SW Corner of Elm and Page	Public	159	177	-18
23	Interior Lot NW Corner of Gilbert and Cullumber	Private	64	31	33
24	Lot SE Corner of Gilbert and Cullumber	Public	32	37	-5
25	Clement's Auto Repair	Private	4	0	4
26	Cullumber Church of Christ	Private	33	0	33
29	Community Senior Center & Gilbert Heritage Center	Private	87	17	70
30	Gilbert Community Church	Private	72	3	69
31	GCM Liquor	Private	6	7	-1
32	Gilbert Chamber of Commerce	Public	79	4	75
33	Hundred North	Private	15	17	-2
34	St. Thomas Byzantine Catholic Church W Lot	Private	23	0	23
35	St. Thomas Byzantine Catholic Church E Lot	Private	5	0	5
36	Arthouse Gilbert	Private	7	2	5
37	Gilbert Now Realty	Private	10	0	10
38	Antique Gardens	Private	3	0	3
39	Dentist	Private	6	0	6
40	Daniel's Jewelry	Private	10	2	8
41	Arizona Hardwood Floor Supply	Private	16	1	15
42	Gilbert Historical Society Lot	Private	20	0	20
43	Gilbert Public Schools Education Complex	Private	221	9	213
		Total (Public)	**2,324**	**1,735**	**588**
		Total (Private)	**1,249**	**292**	**957**
		Total (Northeast of Tracks)	**2,990**	**1,965**	**1,025**
		Total (Southwest of Tracks)	**582**	**62**	**520**
		Total (Core Area)	**2,439**	**1,845**	**594**
		Total (All)	**3,573**	**2,028**	**1,545**

Source: Walker Consultants

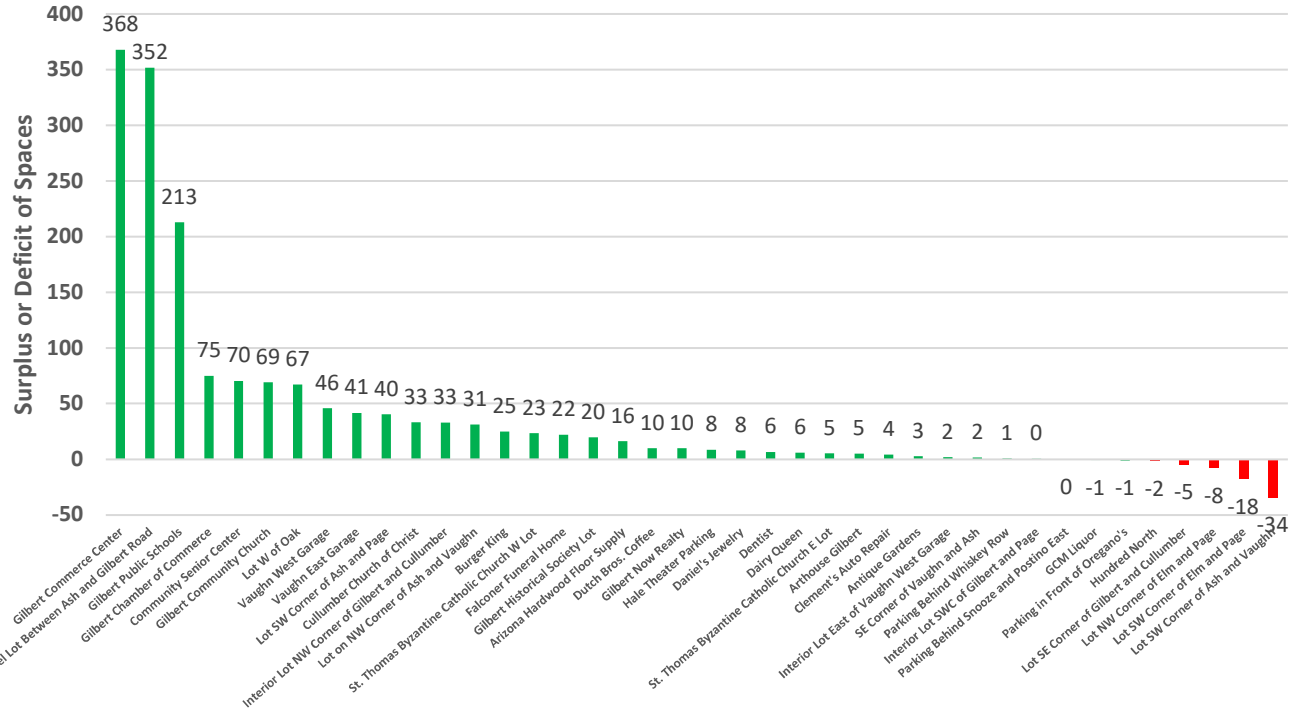
The figures below show off-street parking adequacy by non-residential and residential parking facility, ordered from highest adequacy to highest inadequacy, during the Friday evening off-street peak.

Figure 7: Off-street Residential Parking Adequacy by Facility



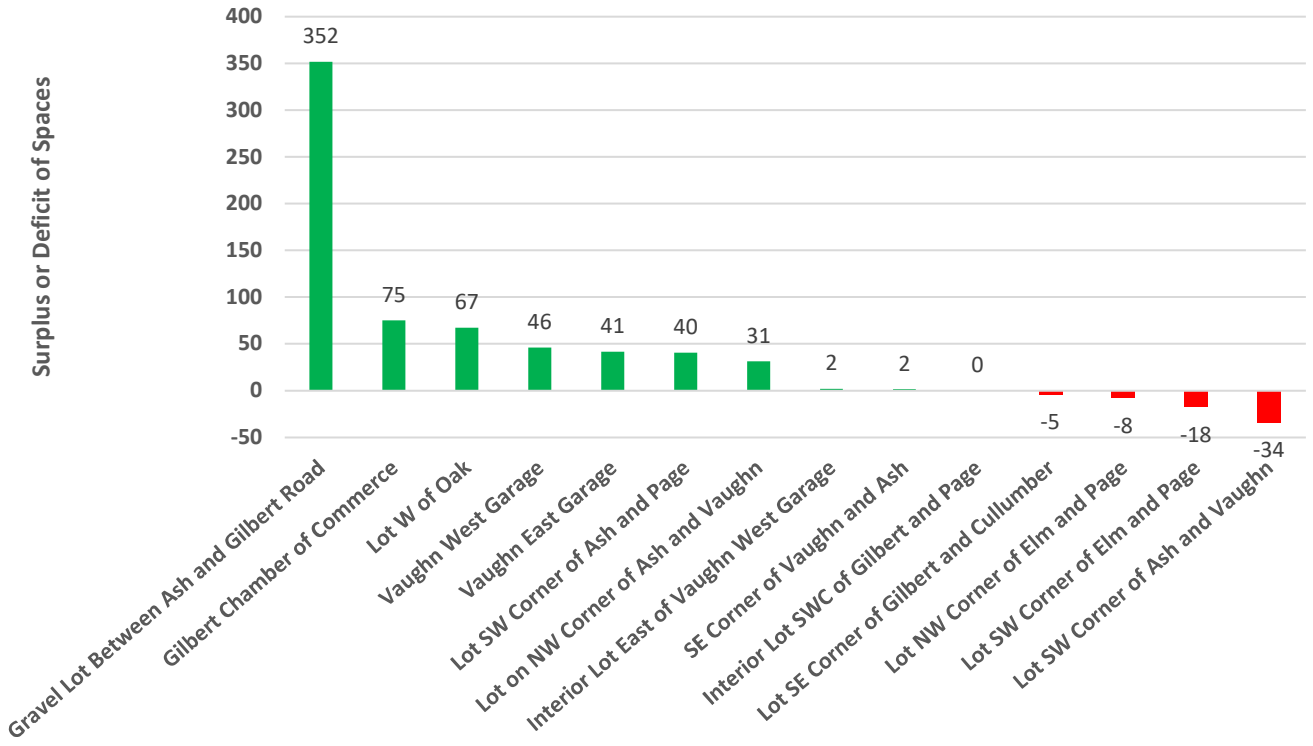
Source: Walker Consultants

Figure 8: Off-street Non-Residential Parking Adequacy by Facility



Source: Walker Consultants

Figure 9: Off-street Non-Residential Parking Adequacy by Facility (Public Parking Only)



Source: Walker Consultants

ON-STREET PARKING OCCUPANCY

ON-STREET OCCUPANCY COUNTS

Table 17 and **Table 18** illustrate on-street parking occupancy counts and percent occupancy for the on-street facilities that were counted as part of this study.

The systemwide on-street peak is highlighted in yellow, which occurred on Saturday, June 20th.

Table 17: Occupancy for Selected On-Street Parking Corridors

Corridor ID	Core Area Corridor Description	Side of Street	Supply	Demand			
				Thurs Aft	Thurs Eve	Sat Aft	Sat Eve
				6/18/20	6/18/20	6/20/20	6/20/20
50	Vaughn Ave. (Ash to Gilbert)	North or East	13	10	12	13	13
		South or West	9	3	6	5	7
51	Vaughn Ave. (Gilbert to Elm)	North or East	1	0	0	0	1
		South or West	6	5	6	5	5
52	Vaughn Ave. (Elm to Palm)	North or East	14	7	8	8	7
		South or West	15	9	9	10	9
53	Page Ave. (Ash to Gilbert)	North or East	28	24	23	24	25
		South or West	17	16	16	15	16
54	Page Ave. (Gilbert to Elm)	North or East	13	7	7	7	9
		South or West	22	9	16	19	18
55	Page Ave. (Elm to Palm)	North or East	11	4	5	5	4
		South or West	12	1	0	0	0
56	Cullumber Ave. (Gilbert to Elm)	North or East	17	13	16	12	16
		South or West	11	8	9	10	11
60	Ash St. (Juniper to Vaughn)	North or East	6	4	3	0	1
		South or West	0	0	0	0	0
61	Ash St. (Vaughn to Page)	North or East	13	12	11	13	9
		South or West	15	14	15	12	14
62	Ash St. (Page to Dead End)	North or East	7	3	2	7	5
		South or West	8	3	1	8	7
63	Elm St. (Vaughn to Page)	North or East	13	1	2	2	5
		South or West	14	1	5	4	3
67	Palm St. (Vaughn to Page)	North or East	11	0	3	2	3
		South or West	11	4	4	6	4
Total (Core Area Corridors Counted)			**288**	**158**	**179**	**187**	**192**
Total (Core Area Corridors Within One Block of Gilbert Road)			**215**	**133**	**150**	**156**	**165**

Source: Walker Consultants

Table 18: Percent Occupancy for Selected On-Street Parking Corridors

Corridor ID	Core Area Corridor Description	Side of Street	Percent Occupancy			
			Thurs Aft	Thurs Eve	Sat Aft	Sat Eve
			6/18/20	6/18/20	6/20/20	6/20/20
50	Vaughn Ave. (Ash to Gilbert)	North or East	77%	92%	100%	100%
		South or West	33%	67%	56%	78%
51	Vaughn Ave. (Gilbert to Elm)	North or East	0%	0%	0%	100%
		South or West	83%	100%	83%	83%
52	Vaughn Ave. (Elm to Palm)	North or East	50%	57%	57%	50%
		South or West	60%	60%	67%	60%
53	Page Ave. (Ash to Gilbert)	North or East	86%	82%	86%	89%
		South or West	94%	94%	88%	94%
54	Page Ave. (Gilbert to Elm)	North or East	54%	54%	54%	69%
		South or West	41%	73%	86%	82%
55	Page Ave. (Elm to Palm)	North or East	36%	45%	45%	36%
		South or West	9%	0%	0%	0%
56	Cullumber Ave. (Gilbert to Elm)	North or East	75%	92%	69%	92%
		South or West	70%	79%	88%	96%
60	Ash St. (Juniper to Vaughn)	North or East	67%	50%	0%	17%
		South or West	0%	0%	0%	0%
61	Ash St. (Vaughn to Page)	North or East	92%	85%	100%	69%
		South or West	93%	100%	80%	93%
62	Ash St. (Page to Dead End)	North or East	42%	28%	97%	69%
		South or West	38%	13%	100%	88%
63	Elm St. (Vaughn to Page)	North or East	8%	15%	15%	38%
		South or West	7%	35%	28%	21%
67	Palm St. (Vaughn to Page)	North or East	0%	28%	19%	28%
		South or West	35%	35%	53%	35%
Total (Core Area Corridors Counted)			**55%**	**62%**	**65%**	**67%**
Total (Core Area Corridors Within One Block of Gilbert Road)			**62%**	**70%**	**73%**	**77%**

Source: Walker Consultants

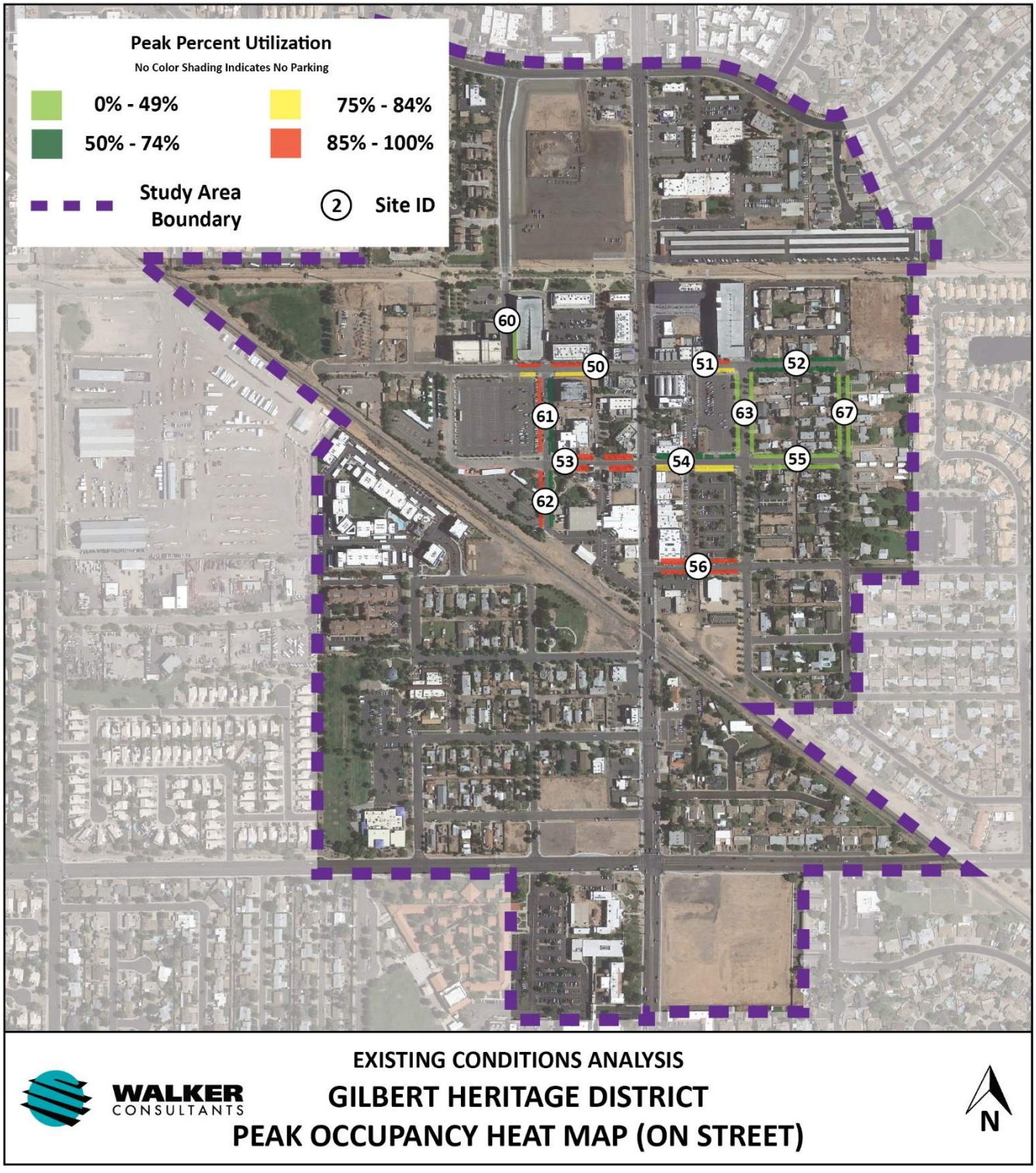
PEAK ON-STREET OCCUPANCY

As shown in the previous tables, Walker estimates that the systemwide and core-area parking off-street parking peaks occurred on the Saturday evening In June. Amongst all corridors studied, occupancy peaked at 192 vehicles out of 288 spaces, or 67%. However, amongst the corridor segments falling within one block of Gilbert Road, peak occupancy was 165 vehicles out of 215 spaces, or 77%. Percent occupancy by facility ranged from 0% along one side of Page Avenue between Elm and Palm and Ash Street between Juniper and Vaughn to 100% along segments of Vaughn Avenue between Ash and Gilbert and Vaughn Avenue between Gilbert and Elm.

On-street occupancy met or exceeded 80% on 10 corridor segments studied.

Figure 10, on the next page, shows an on-street occupancy heat map for selected on-street parking facilities, as it would have occurred on Friday, March 6th.

Figure 10: Peak Occupancy Heat Map (On-street Parking)



Source: Walker Consultants

PARKING LENGTH OF STAY

On the same days that occupancy counts were conducted for off-street and on-street parking facilities, Walker collected data on length of stay for vehicles parked on-street within the core area. The methodology is detailed above in the section on Study Methodology.

Table 19 and **Table 20** detail the number of unique vehicles observed parked on-street over a 10-hour period on the weekday and weekend, sorted by the number of times that vehicle was observed. 15-Minute parkers and all-day parkers were tracked separately.

WEEKDAY LENGTH OF STAY

Table 19: Length of Stay for On-Street Parking Along Selected Corridors in Core Area on Weekday

Corridor ID	Core Area Corridor Description	Side of Street	Length of Stay (Number of Hours/Points in Time Where Unique Vehicle Was Observed)							Average Vehicle Was Parked This Many Hours or Fewer (Excluding All Day Parkers & 15-Minute Parkers)	Number of Vehicles Parked Less Than 4 Hours	Number of Vehicles Parked 4 or More Hours	Total
			15 Minute Parkers	1 Hour	2 Hours	3 Hours	4 Hours	5 - 9 Hours	Parked All Day				
50	Vaughn Ave. (Ash to Gilbert)	North or East	0	21	12	5	0	5	0	2.21	38	5	43
		South or West	0	16	4	2	1	2	0	1.92	22	3	25
51	Vaughn Ave. (Gilbert to Elm)	North or East	0	5	0	0	0	0	0	1.00	5	0	5
		South or West	0	8	7	0	1	1	0	1.94	15	2	17
52	Vaughn Ave. (Elm to Palm)	North or East	0	1	1	0	0	0	6	1.50	2	6	8
		South or West	0	0	2	0	1	1	5	3.75	2	7	9
53	Page Ave. (Ash to Gilbert)	North or East	0	79	21	11	3	4	0	1.64	111	7	118
		South or West	5	41	14	10	0	3	0	1.76	70	3	73
54	Page Ave. (Gilbert to Elm)	North or East	30	7	1	0	0	0	0	1.13	38	0	38
		South or West	7	42	18	1	0	1	0	1.42	68	1	69
55	Page Ave. (Elm to Palm)	North or East	0	3	1	0	0	0	4	1.25	4	4	8
		South or West	0	1	1	0	0	0	0	1.50	2	0	2
56	Cullumber Ave. (Gilbert to Elm)	North or East	0	18	14	4	0	3	0	2.03	36	3	39
		South or West	0	7	18	1	1	2	0	2.21	26	3	29
61	Ash St. (Vaughn to Page)	North or East	0	23	22	6	2	3	2	2.04	51	7	58
		South or West	0	11	20	6	3	4	1	2.48	37	8	45
63	Elm St. (Vaughn to Page)	North or East	0	0	0	1	0	0	1	3.00	1	1	2
		South or West	0	2	0	1	1	2	1	3.83	3	4	7
67	Palm St. (Vaughn to Page)	North or East	0	1	0	2	0	1	0	3.50	3	1	4
		South or West	0	0	2	0	0	1	2	3.67	2	3	5
Total (Core Area Corridors Counted/Studied for Length of Stay)			**42**	**286**	**158**	**50**	**13**	**33**	**22**	**2.19**	**536**	**68**	**604**
Total (Core Area Corridors Within One Block of Gilbert Road)			**42**	**280**	**151**	**48**	**12**	**30**	**5**	**2.04**	**521**	**47**	**568**

Source: Walker Consultants

On the weekday, the average vehicle was parked for 2.19 hours across all selected core area corridors studied for length of stay and for 2.04 hours along corridors within one block of Gilbert Road. 11% of total vehicles were parked for more than four hours, or 8% if excluding corridors more than a block away from Gilbert Road. This indicates that approximately 1 in 10 parking spaces are occupied by longer-term parkers, impeding the ability to accommodate customer and visitors at locations close to their destinations.

WEEKEND LENGTH OF STAY

Table 20: Length of Stay for On-Street Parking Along Selected Corridors in Core Area on Weekend

Corridor ID	Core Area Corridor Description	Side of Street	Length of Stay (Number of Hours/Points in Time Where Unique Vehicle Was Observed)							Average Vehicle Was Parked This Many Hours or Fewer (Excluding All Day Parkers & 15-Minute Parkers)	Number of Vehicles Parked Less Than 4 Hours	Number of Vehicles Parked 4 or More Hours	Total
			15 Minute Parkers	1 Hour	2 Hours	3 Hours	4 Hours	5 - 9 Hours	Parked All Day				
50	Vaughn Ave. (Ash to Gilbert)	North or East	0	35	16	4	3	5	0	2.00	55	8	63
		South or West	0	13	5	3	0	4	0	2.40	21	4	25
51	Vaughn Ave. (Gilbert to Elm)	North or East	0	1	0	0	0	0	0	1.00	1	0	1
		South or West	0	3	1	2	2	3	1	3.64	6	6	12
52	Vaughn Ave. (Elm to Palm)	North or East	0	0	0	4	0	3	3	4.71	4	6	10
		South or West	0	0	0	1	0	2	9	5.67	1	11	12
53	Page Ave. (Ash to Gilbert)	North or East	0	60	31	8	4	11	0	2.10	99	15	114
		South or West	4	39	25	6	1	5	0	1.92	74	6	80
54	Page Ave. (Gilbert to Elm)	North or East	34	12	2	0	0	0	0	1.14	48	0	48
		South or West	12	53	21	4	1	2	2	1.54	90	5	95
55	Page Ave. (Elm to Palm)	North or East	0	1	0	0	0	1	4	4.00	1	5	6
		South or West	0	0	0	0	0	0	0	0.00	0	0	0
56	Cullumber Ave. (Gilbert to Elm)	North or East	0	38	15	4	3	0	0	1.53	57	3	60
		South or West	0	30	10	6	2	0	0	1.58	46	2	48
61	Ash St. (Vaughn to Page)	North or East	0	25	20	3	0	1	1	1.65	48	2	50
		South or West	0	13	23	8	3	2	0	2.22	44	5	49
63	Elm St. (Vaughn to Page)	North or East	0	0	3	0	0	2	1	4.00	3	3	6
		South or West	0	5	4	2	0	2	0	2.54	11	2	13
67	Palm St. (Vaughn to Page)	North or East	0	0	0	0	0	1	2	7.00	0	3	3
		South or West	0	1	1	0	0	0	4	1.50	2	4	6
Total (Core Area Corridors Counted/Studied for Length of Stay)			**50**	**329**	**177**	**55**	**19**	**44**	**27**	**2.61**	**611**	**90**	**701**
Total (Core Area Corridors Within One Block of Gilbert Road)			**50**	**327**	**176**	**50**	**19**	**37**	**5**	**2.09**	**603**	**61**	**664**

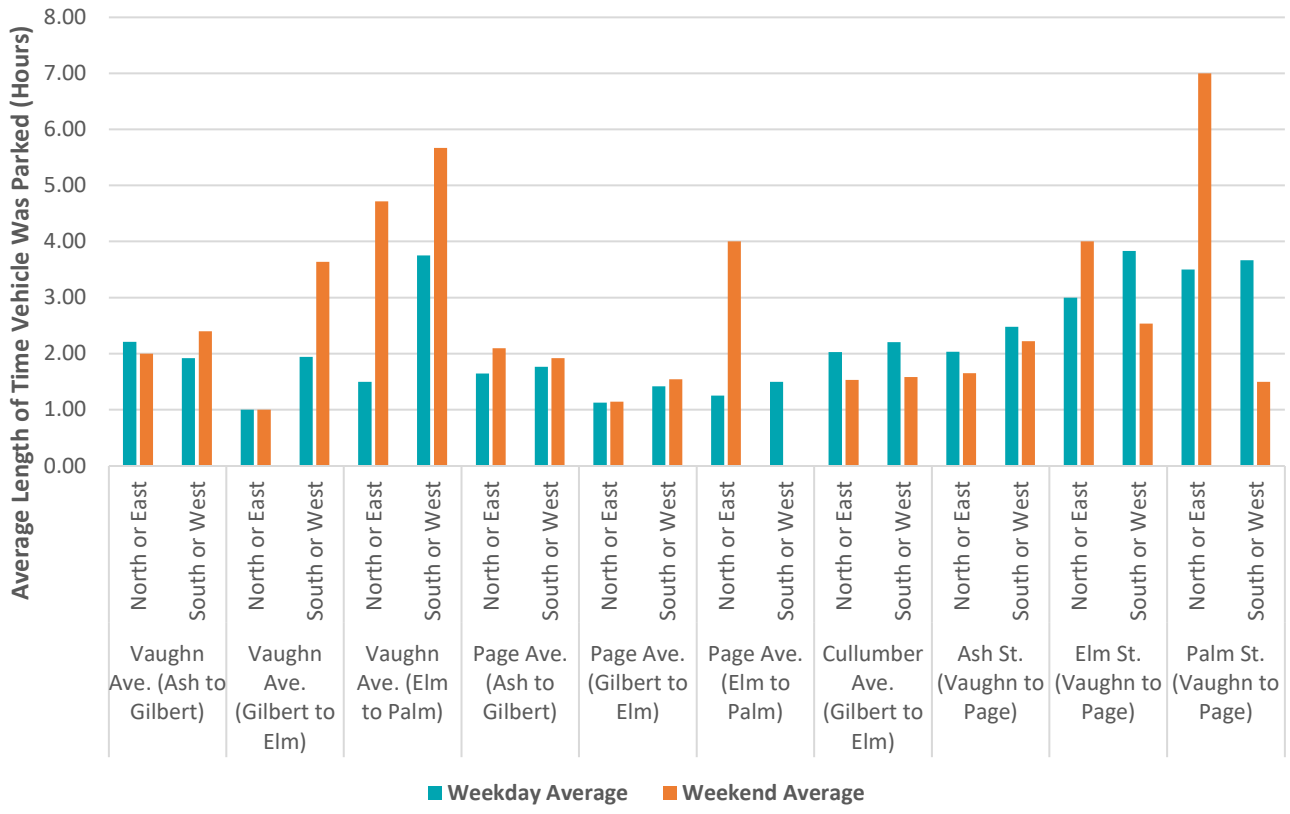
Source: Walker Consultants

On the weekend, the average vehicle was parked for 2.61 hours across all selected core area corridors studied for length of stay and for 2.09 hours along corridors within one block of Gilbert Road. 13% of total vehicles were parked for more than four hours, or 9% if excluding corridors more than a block away from Gilbert Road.

Figure 11 charts the differences in average length of stay for each corridor between the weekday and weekend.

WEEKDAY VERSUS WEEKEND

Figure 11: Length of Stay, Weekday versus Weekend Along Selected Core Area Corridors



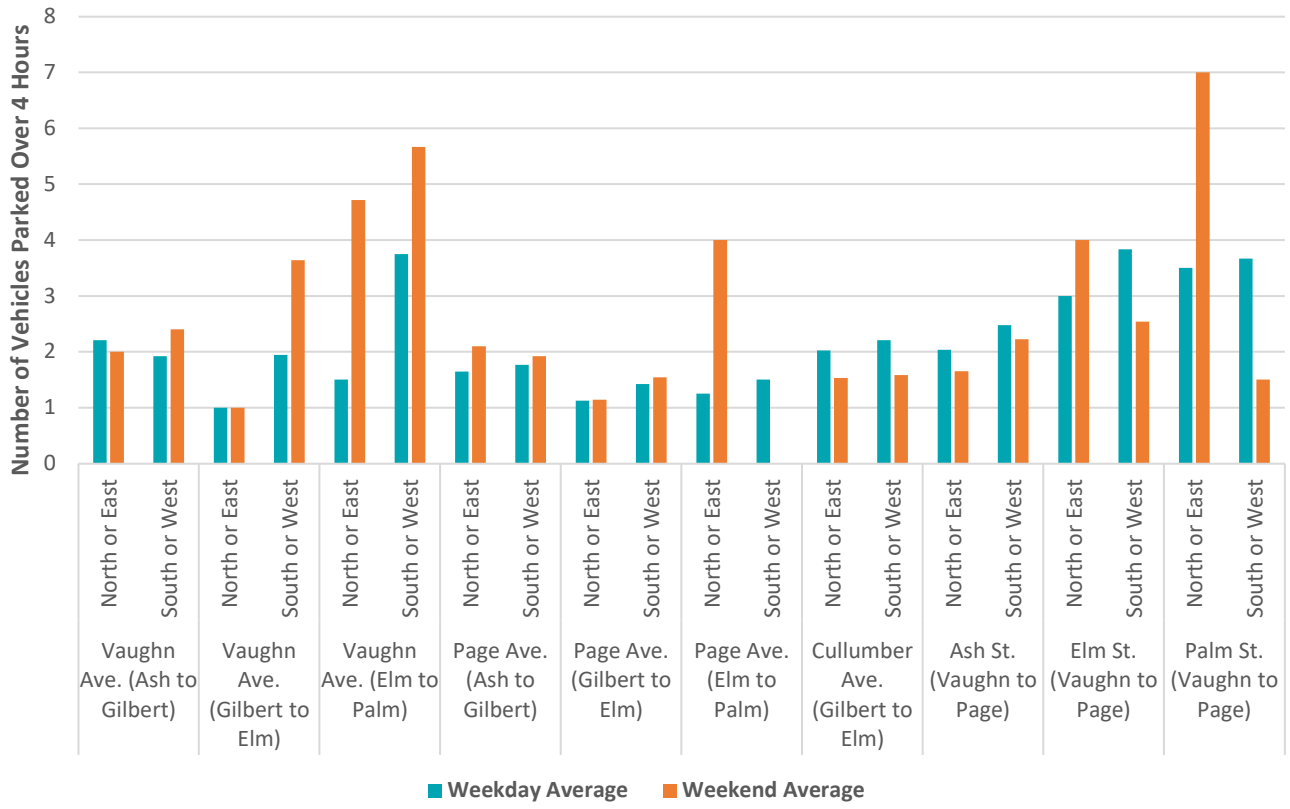
Source: Walker Consultants

For a majority of corridor segments, sorted by side of street (13 out of 20), length of stay amongst vehicles not parked for 15 minutes or all day was higher on the weekend than the weekday. The corridors with the largest observed differences were all more than a block away from Gilbert Road, largely in the residential areas east of Elm Street.

The corridors with the shortest average time parked were the north side of Vaughn Avenue between Gilbert and Elm and the north side of Page Avenue between Gilbert and Elm. The corridors with the longest average time parked were the south side of Vaughn Avenue between Elm and Palm and the east side of Palm Street between Vaughn and Page.

Figure 12 shows the number of vehicles parked for more than 4 hours, sorted by selected on-street corridor and side of street.

Figure 12: Number of Vehicles Parked for More than 4 Hours Along Selected Core Area Corridors



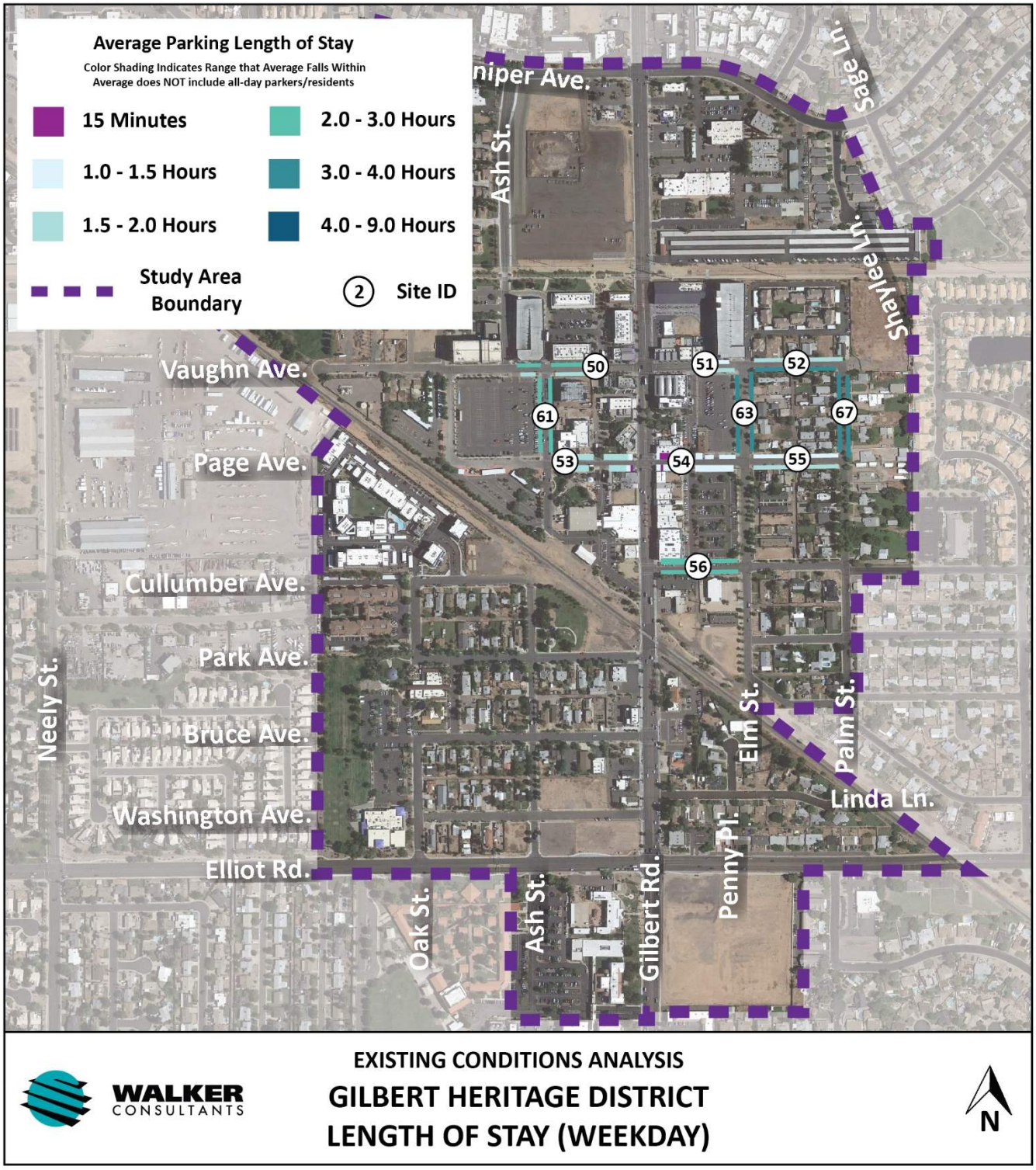
Source: Walker Consultants

The above chart includes all-day parkers and 15-minute parkers.

The east side of Palm Street between Vaughn and Page, the south side of Vaughn between Elm and Palm, both sides of Vaughn Avenue between Elm and Palm, and the north side of Page between Elm and Palm all exhibited high numbers of vehicles parked for more than 4 hours, particularly on the weekend.

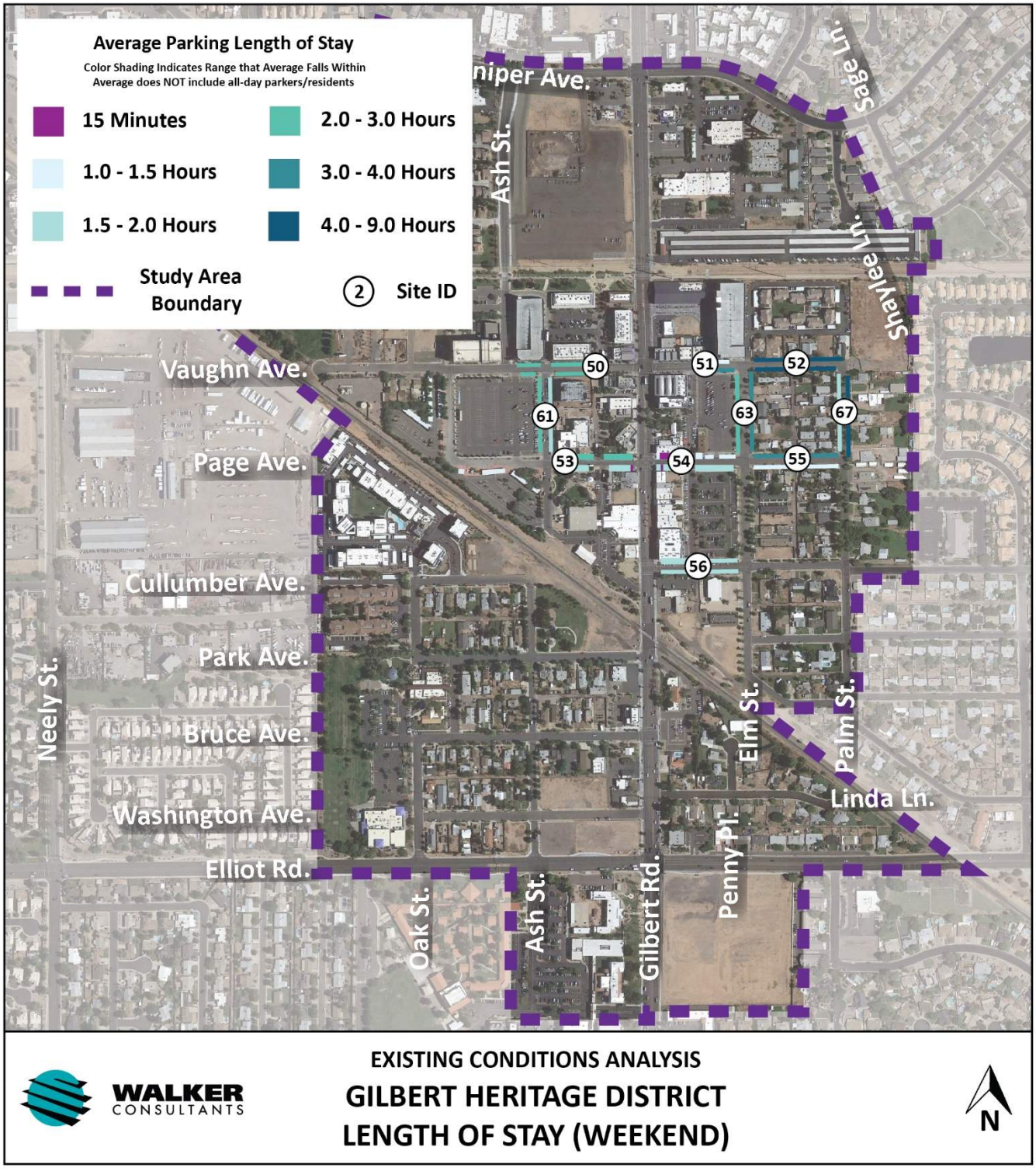
Figure 13 and **Figure 14** are length of stay "heat maps," showing the average length of stay by corridor and side of street for the weekday and weekend.

Figure 13: Length of Stay Heat Map for On-Street Parking Along Selected Corridors in Core Area on Weekday



Source: Walker Consultants

Figure 14: Length of Stay Heat Map for On-Street Parking Along Selected Corridors in Core Area on Weekend



Source: Walker Consultants

ORIGIN AND DESTINATION OBSERVATIONS

During the weekend, Walker, over the course of approximately an hour, observed 62 persons either parking their vehicles and leaving the Vaughn West Garage or returning to their vehicles. In the Vaughn East Garage, Walker observed 45 persons either parking their vehicles and leaving or returning to their vehicles.

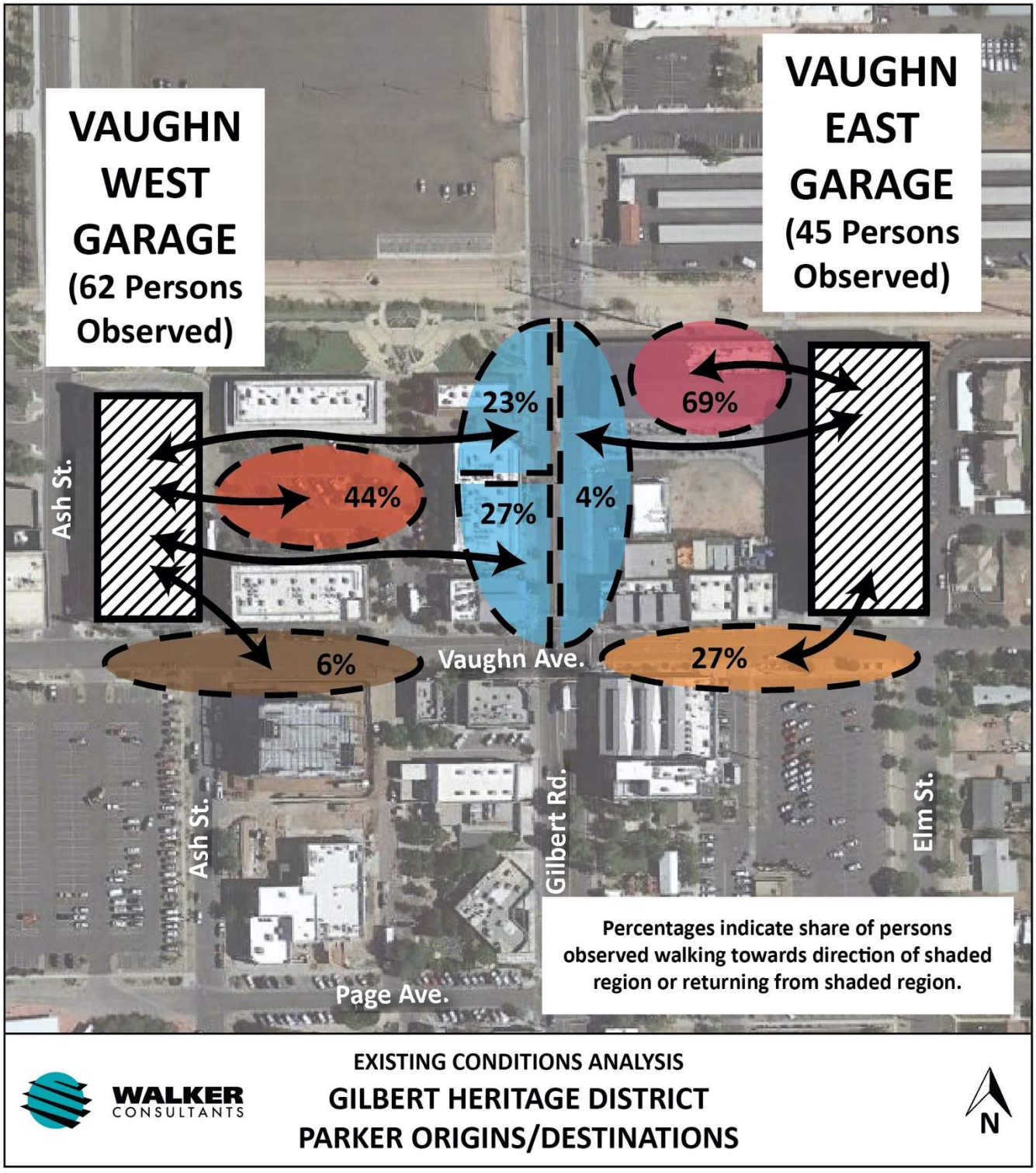
Walker chose vantage points on the ground level that allowed them to maximize the number of persons that could be observed while also ensuring that the approximate paths of travel could also be observed. In the case of the Vaughn West Garage, personnel were stationed on the northwest corner of the surface parking lot immediately to the east of the garage. For the Vaughn East Garage, personnel were positioned inside a vehicle parked in the parking garage on the ground level that allowed them to observe both the west and south entrances.

For the West Garage, the majority of persons parking in the garage were going to or coming from one of the businesses or restaurants surrounding the surface parking lot immediately to the east of the garage (44%). Most of the remainder were observed walking towards Gilbert Road, about half going north and half going south (23% and 27% respectively). Finally, only 6% of persons were observed walking south or exiting south towards Vaughn Avenue.

For the East Garage, the majority of persons parking in the garage were going to or coming from the Culinary Dropout facility immediately to the northwest of the garage (69%). Most of the remainder were observed going towards or coming from Vaughn Avenue through the south entrance. Only 4% of East Garage parkers headed towards Gilbert Road, bypassing the Culinary Dropout facility.

Figure 15, on the next page, displays the general destination areas for each garage and the associated percentage of persons from each garage who walked towards or returned from those areas.

Figure 15: Origin and Destination Areas for Both Parking Structures on Weekend



Source: Walker Consultants

03 Future Conditions

FUTURE CONDITIONS KEY TAKEAWAYS

FUTURE PARKING NEEDS

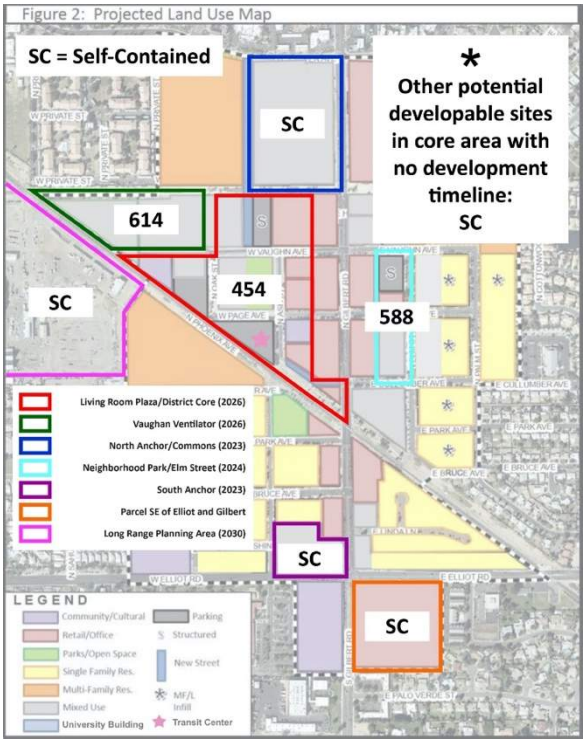
12
Existing Public Lots to be Redeveloped at Buildout

1,655
Total New, New Spaces Needed with Shared Parking

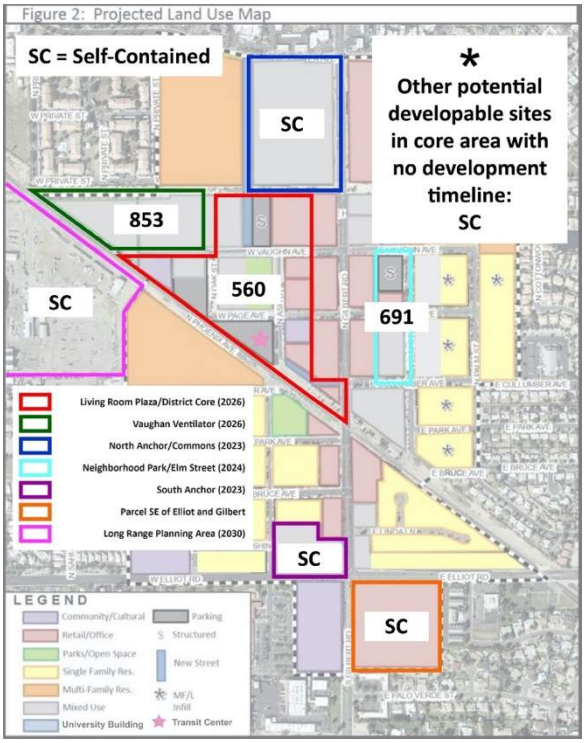
2,104
Total New, New Spaces Needed with No Shared Parking

1,094
Number of Future Public Parking Spaces Needed to Accommodate Existing Public Parking Demand After Removal of Lots

1,023,018
Total Developable Land in Core Area (Square Feet)



Number of Spaces Needed with Shared Parking by Project Area



Number of Spaces Needed with No Shared Parking by Project Area

HERITAGE DISTRICT REDEVELOPMENT PLAN BUILDOUT

The Heritage District Redevelopment Plan contains projections that examine what buildout of the District may look like, given various constraints and considering anticipated maximum market demand and market saturation. Using economic and land use data that was collected for the study, it describes the cumulative amount/number of new retail space, new office space, new hotel rooms, and new multi-family dwelling units that the Heritage District may be able to support through the year 2028, when buildout is assumed to occur.

Table 21 shows the cumulative growth in retail, office, hotel, and multi-family residential projected for the District through the year 2028. It should be noted that, for purposes of these projections, the District is also assumed to include the Long Range Development Area within its boundaries by buildout year.

Table 21: Cumulative Growth in Selected Land Uses through 2028

Land Use	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Average Annual Growth from 2020	Total Percent Growth in New Development (2020 - 2028)
Retail	Square Feet	0	40,000	40,000	80,000	80,000	120,000	120,000	120,000	120,000	151,500	16,833	279%
Office	Square Feet	0	100,000	100,000	150,000	150,000	200,000	200,000	200,000	322,000	322,000	35,778	222%
Hotel	Rooms	0	120	120	120	120	120	120	320	320	320	36	167%
Multi-family	Dus	0	200	400	600	800	1,000	1,200	1,500	1,800	2,010	223	905%

Source: Town of Gilbert

As indicated by the table, this development will occur in stages, with the table above estimating when new space per land use type might be added according to the information on future new developments that was available at the time. However, regardless of the exact year in which new space is to be added per each land use, it is assumed that the new additions will eventually total to the final buildout figures shown for 2028.

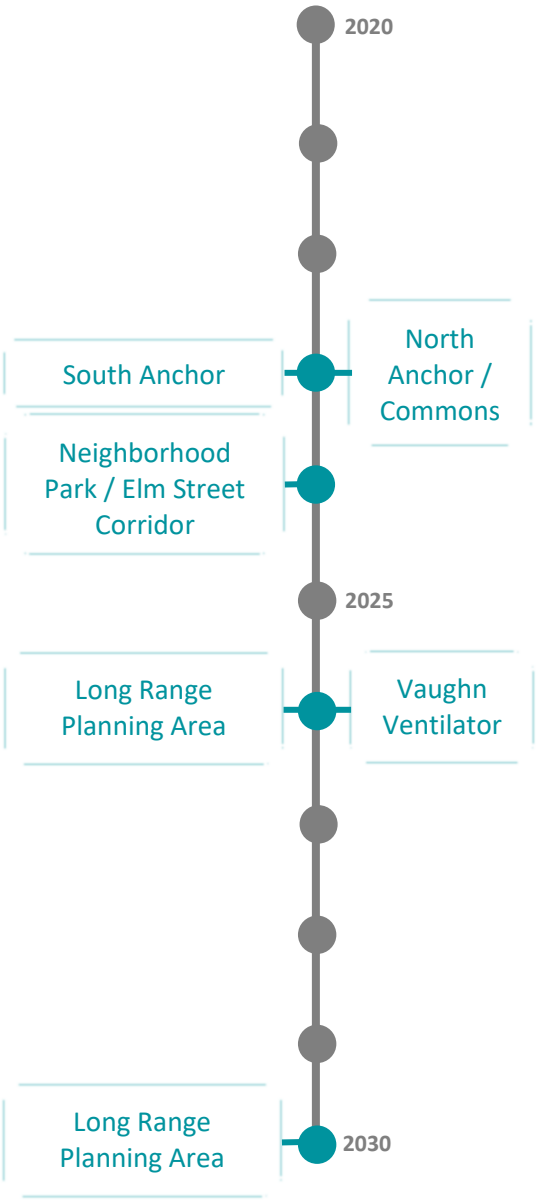
The Plan anticipates that, starting in 2020 and running through 2028, the District will add an average of 16,833 square feet of retail space, presumed to include all associated uses such as restaurants, 35,778 square feet of office space, 36 new hotel rooms, and 223 new dwelling units per year. By buildout, this will result in a total of 151,000 square feet of new retail space, 322,000 square feet of new office space, 320 new hotel rooms, and 2,010 new dwelling units.

Between 2020 and 2028, in terms of percent growth, this equates to a near tripling of new retail/restaurant space, a doubling of new office space and number of hotel rooms, and a 9x increase in the number of new multi-family dwelling units. Note that these figures only consider percent growth for all new development, and do not represent percent growth using existing amounts of retail and office square footage and number of hotel rooms and multi-family dwelling units as the baseline.

NEW DEVELOPMENTS

According to information furnished to Walker by the Town regarding the latest anticipated developments and approximate development timetables, all new projects can be classified into six general areas or groups, as outlined in the HD Development Plan. The following timeline lists those areas/groups, along with the anticipated year of completion or buildout for each.

- North Anchor/Commons (2023)
- South Anchor (2023)
- Neighborhood Park/Elm Street Corridor (2024)
- Living Room Plaza/District Core (2026)
- Vaughn Ventilator (2026)
- Long Range Planning Area (2030)



In addition, there are other areas or specific parcels that are highlighted or identified in the latest iteration of the Town's future land use map for the District where future new development is expected to occur, currently without a specific timeframe. Walker classified these sites into three additional areas/groups. These are:

- The large parcel immediately southeast of Elliot Road and Gilbert Road, currently undeveloped
- Other sites currently undeveloped
- Other potential sites currently occupied by existing development

The other sites currently undeveloped are dispersed throughout the District. Other potential sites currently occupied by existing development are sites that lie within areas designated by the future land use map as future mixed use, future retail/office, or future multi-family. For instance, much of the land in between Elm Street and Palm Street is identified as areas that can accommodate an unspecified amount of new multi-family development, as denoted by an asterisk. This land is currently occupied mostly by single-family homes.

Table 22, on the next page, shows each area/group, as described above, with each key development area sorted by intended future land use and approximate amount of developable square feet for each use. Parcel land area figures were derived from geographical information systems data furnished by the Town.

Note that **Table 22**, and the remainder of this analysis, does not include parcels designated as a potential future transit center or transit center parking. Currently, the site of the future transit center is being determined and may either go on the northeast of the railroad tracks, within the Living Room Plaza/District Core, or on the southwest of the railroad tracks, within the Long Range Planning Area. The transit center in either location is assumed to have its own self-contained parking supply and demand for purposes of this study.

Pending further development of the transit center plan, it also should be noted that parcels currently designated for the transit center on the northwest side would be available for development under a different land use category if the transit center were to be located to the southwest, within the Long Range Planning Area. Therefore, the numbers for other land uses provided in the table below for the Living Room Plaza/District Core and Long Range Planning Area are subject to change.

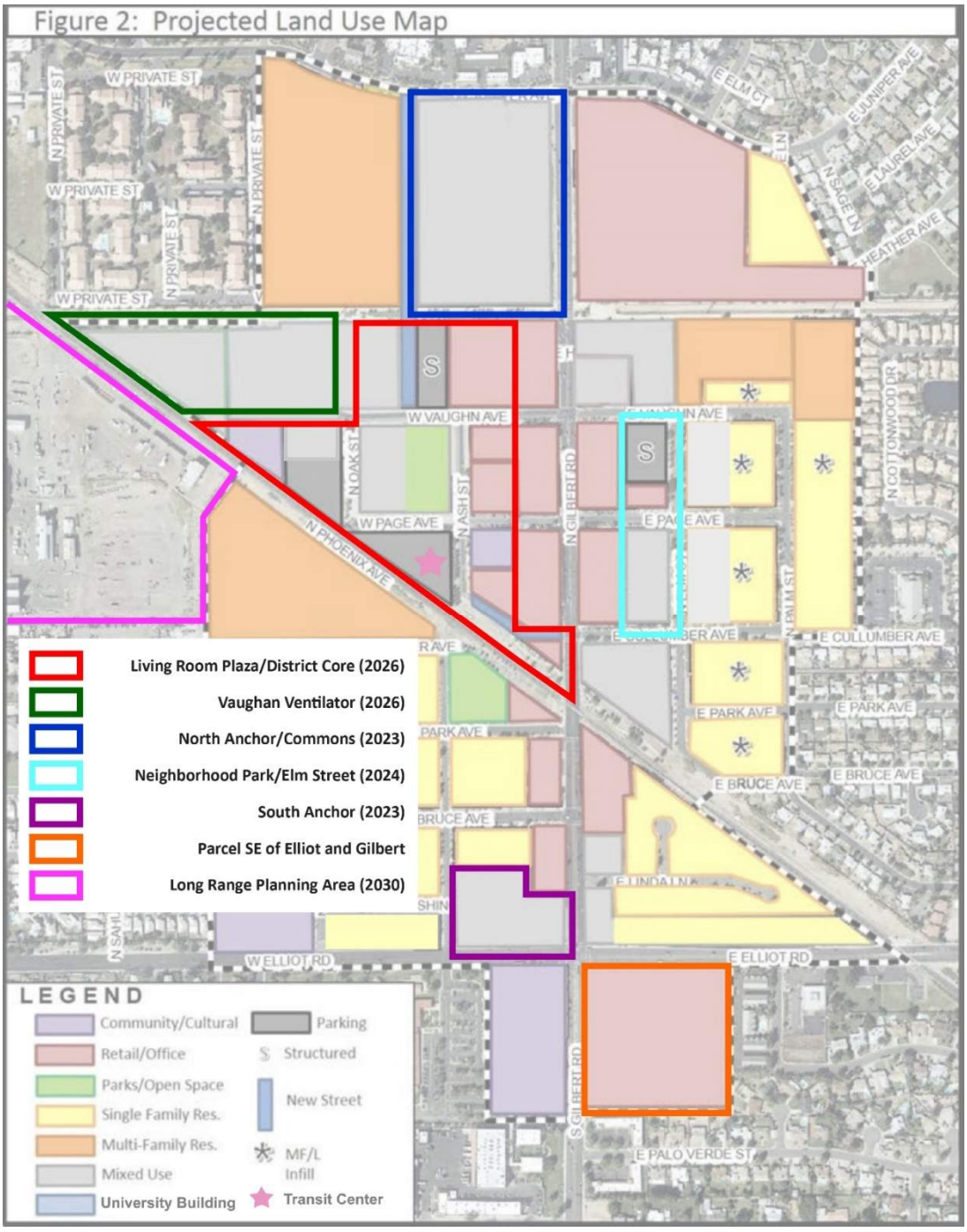
Table 22: Cumulative Growth in Selected Land Uses through 2028

Key Redevelopment Area	Assumed/Intended Land Uses	Developable Parcel Square Feet
Living Room Plaza/District Core	Park, Event	60,922
	Mixed Use	102,851
	Retail, Office	45,088
	Community/Cultural	42,255
	Total	251,116
Vaughn Ventilator	Mixed Use	430,048
	Total	430,048
North Anchor/Commons	Park	50,000
	Mixed Use	347,404
	Total	397,404
Neighborhood Park/Elm Street Corridor	Retail, Office	55,735
	Park	25,098
	Mixed Use	41,892
	Total	122,725
South Anchor	Mixed Use	95,598
	Total	95,598
Parcel Southeast of Elliot and Gilbert	Retail/Office	340,033
	Total	340,033
Other Potential Sites Currently Undeveloped	Residential	102,939
	Retail, Office	24,000
	Total	126,939
Other Potential Sites with Existing Older/Established Development	Retail, Office	139,263
	Mixed Use	291,882
	Residential	545,021
	Total	976,166
Long Range Planning Area	Residential	770,000
	Park	377,000
	Total	1,147,000
Total Parcel Area (Areas or Potential Redevlopment Areas Excluding Long Range Planning Area & Established Existing)		**1,763,863**
Total Parcel Area (Areas or Potential Redevlopment Areas Excluding Long Range Planning Area & Including Established Existing)		**2,740,029**
Total Parcel Area (Long Range Planning Area Only)		**1,147,000**
Total Parcel Area Targeted for Planned or Potential Redevelopment		**3,887,029**

Source: Town of Gilbert, Walker Consultants

Figure 16 depicts the future land use map for the Heritage District overlaid with the key redevelopment areas as described above. Note that the Long Range Planning Area extends off the map to the west.

Figure 16: Projected Land Use Map with Site and Redevelopment Area Overlay



Source: Town of Gilbert, Walker Consultants

FUTURE PARKING CONDITIONS METHODOLOGY

In order to estimate how much parking may be needed for each core redevelopment area, it is necessary to follow a three-step process.

1. Estimate future parking demand resulting from new development
2. Calculate future losses of existing parking resulting from new development and redevelopment
3. Account for existing parking demand in each key redevelopment area

The vision for full buildout of each key redevelopment area envisions the removal of most or all of the existing surface parking, both private and public, with the surface parking to be replaced by buildings and other land uses.

While it is likely that some limited surface parking would likely remain or be reconstructed, the vision is for the majority of new parking to be constructed as structured parking or underground parking. The HD Redevelopment Plan does not specify whether or not parking needs for new development in any key redevelopment area are to be public resources that are shared by surrounding Heritage District development, are to be private resources that are self-contained and serve only the development to which they belong, or a combination.

In all likelihood, new development will have mostly self-contained parking supplies that are not shared, though it is likely that smaller developments in the District Core and the Living Room Plaza will be served by shared parking and/or public parking.

In any case, the resultant projections of future parking needs represent the total number of spaces that might be needed, given full buildout, loss of all surface parking, and no decreases in existing carryover demand from all existing development.

Also, these projections should only be considered at a high-level, and in aggregate for each key redevelopment area.

AUTONOMOUS VEHICLES IMPACT ON FUTURE PARKING DEMAND

Autonomous vehicles (AVs) are currently being developed and most industry experts believe these vehicles will be available within the next decade, first to ride-hailing companies (or transportation network companies, TNCs), like Uber and Lyft, and then to consumers. AVs could disrupt transportation since households would likely need fewer cars to meet transportation needs. For example, one AV could drop off a family member, and then drive itself to pick up another. Once the service is driverless, it is generally expected that the cost of using ride-hailing for daily travel for urban residents will be 30 to 50% less than owning a personal vehicle. Numerous players, including tech companies like Google, Apple, and Amazon as well as auto manufacturers such as Ford and GM, are reportedly planning to enter the ride-hailing market and competition will likely be strong. If many urban residents then give up their cars and use TNCs, personal vehicle ownership rates could decline significantly, and parking could be impacted.

Based on a research review and our own data collection, Walker does not anticipate mass acceptance and purchase of fully autonomous personal vehicles before 2040, assuming continued advancement of AV technology at the current pace. However, autonomous vehicle options are already having an impact on circulation and first/last mile connections in urban environments. For example, municipalities like Ann Arbor, Michigan, Las Vegas, Nevada, San Rafael, California, and Arlington, Texas have incorporated autonomous shuttles and vans as a circulation option, taking passengers from central locations to different stops within 1 to 2 miles of the origin point.

Again, Walker does not anticipate that autonomous vehicles will have a significant impact on personal commuting behaviors—however, there is potential for autonomous vehicles in public use (such as driverless shuttles and vans) to play a role as an internal circulator. Autonomous shuttles and vans can offer an efficient and convenient first/last mile connection for visitors to the Heritage District.

FUTURE PARKING DEMAND FROM NEW DEVELOPMENT

Walker followed a three-step process for estimating future parking demand resulting from new development by site and by key redevelopment area/group. These steps are summarized as follows:

1. **Determine overall percentage share of total parcels targeted for planned or potential redevelopment**

   While buildout numbers for retail (including restaurants), office, hotels, and multi-family dwelling units are given, they are provided only in aggregate. Therefore, it was necessary for Walker to distribute the overall buildout numbers across the site in a non-arbitrary way, in order to estimate parking demand that would be generated by each site and for each key redevelopment area. Therefore, Walker aggregated all identified parcels within each site and area that were designated as mixed use, office/retail, and multi-family together, in accordance with the master plan buildout figures given, and divided that total area by the total area of all developable land for those uses across the entire District, including the Long Range Planning Area.

   Table 23, on the next page, shows the area of each key redevelopment area as a percentage share of overall developable or currently undeveloped areas, as identified by the future land use map, for the entire District. Note that these figures exclude other land uses both within and outside of these areas, and also do not include areas that are established and are unlikely to be substantially redeveloped.

Table 23: Percentage Share of Key Redevelopment Areas as a Function of Total Developable Area in the District

Key Redevelopment Area	Total Developable Area Designated as Mixed Use, Retail/Office, or Multi-Family on Projected Land Use Map	Percent of Total
North Anchor/Commons	347,404	10%
South Anchor	95,598	3%
Elm Street/Neighborhood Park	97,627	3%
Vaughn Ventilator	430,048	13%
Living Room Plaza	147,939	4%
Parcel Southeast of Elliot Road and Gilbert Road	340,033	10%
Other Undeveloped Sites	126,939	4%
Other Potential Sites with Existing Development	976,166	29%
Long Range Planning Area	770,000	23%
Total (Entire Heritage District + Long Range Area)	**3,331,754**	**100%**

Source: Town of Gilbert, Walker Consultants

Not including other undeveloped sites or potential sites, the Long Range Planning Area contained the most developable land for retail/office, mixed use, and/or multi-family, with 23% of the total. The Vaughn Ventilator are was next at 13%, while the North Anchor was third at 10%.

If considering only key redevelopment sites within the core area, then the percentage share of area for each site as a function of the total area for core sites is as shown in **Table 24**.

Table 24: Percentage Share of Core Area Redevelopment Sites as a Function of Total Developable Area in the Core

Key Redevelopment Sites in Core Area Only	Total Developable Area Designated as Mixed Use, Retail/Office, or Multi-Family on Projected Land Use Map	Percent of Total
North Anchor/Commons	347,404	34%
Elm Street/Neighborhood Park	97,627	10%
Vaughn Ventilator	430,048	42%
Living Room Plaza	147,939	14%
Total (Core Area Sites Only)	**1,023,018**	**100%**

Source: Town of Gilbert, Walker Consultants

2. Estimate share of retail/restaurant square feet, office square feet, number of hotel rooms, and number of multi-family dwelling units for each key development area or group of sites

At the time of this writing, detailed programming by land use type had not been completed for the North Anchor/Commons area. Because of this, it was necessary for Walker to estimate how much retail, office, hotel, and multi-family residential would go on each site. To do this, Walker multiplied the percent share for each area by the total buildout numbers given for each land use type. A floor-area ratio of 1.0 was assumed.

Note that the total amount of developable land across the District for all mixed use, office/retail, and multi-family areas, assuming a floor-ratio of 1.0, could accommodate larger buildout numbers than given by the Plan. Therefore, the figures contained below should not be construed to mean the maximum amount of the selected land use that could be constructed given the amount of developable land for the respective land use or uses.

Before arriving at final figures, certain adjustments needed to be made.

First, Walker accounted for unallowed uses, according to the future land use map. The parcel southeast of Elliot Road and Gilbert Road was designated as retail/office, which would disallow multi-family uses. Also, areas within the Long Range Planning Area that are not designated as future park or community uses are designated as multi-family only, which would disallow all non-residential uses.

Secondly, the Town furnished to Walker detailed programming information for the North Anchor/Commons redevelopment. The area, as of this writing, will comprise approximately 35,000 square feet of retail (including restaurants), 100,000 square feet of office, 150 hotel rooms, and 250 dwelling units. Because the apparent FAR of the North Anchor development is nearly 1.5, the remaining development areas must be adjusted down, in terms of how much development they would accommodate at buildout, with the difference distributed evenly across the remaining areas, in order not to exceed buildout numbers given for the District as a whole.

Finally, it is highly likely that the total number of hotel rooms across the District will be contained across only one or two key redevelopment areas. Because of this, Walker can consider hotel demand only in an aggregate sense, with the exception of the North Anchor/Commons, and not sorted by development area.

Table 25 summarizes the adjusted share of each constituent land use, as defined in the Heritage District Redevelopment Plan, for each key redevelopment area. For this step, we have aggregated other undeveloped sites with other potential sites with existing development into one group. Cells blacked out indicate that the land use group is not allowed within a respective key redevelopment area.

These figures were reviewed with and confirmed by Town staff prior to Walker proceeding with the next step of this analysis.

Table 25: Adjusted Percent of Total District + Long Range Area of Each Key Redevelopment Area for Selected Land Uses

Key Redevelopment Area	Retail (Square Feet) (Includes Restaurants and Associated Uses)	Office (Square Feet)	Hotel (Number of Rooms)	Multi-Family Residential (Number of Dwelling Units)
North Anchor/Commons	35,000	100,000	150	250
South Anchor	6,606	10,381		81
Elm Street/Neighborhood Park	6,698	10,577		82
Vaughn Ventilator	21,814	42,704		283
Living Room Plaza	8,986	15,439		113
Parcel Southeast of Elliot Road and Gilbert Road	17,720	34,005		
Other Sites	54,677	108,894		713
Long Range Planning Area				488
Total	**151,500**	**322,000**	**320**	**2,010**

Source: Town of Gilbert, Walker Consultants

3. Calculate estimated new peak parking demand that will be generated for each key redevelopment area or group of sites

In order to model future parking demand, Walker aggregated the North Anchor/Commons, Elm Street/Neighborhood Park, Vaughn Ventilator, and Living Room Plaza together into one *de facto* shared parking area. This is due to the fact that these areas are contiguous and form the core of commercial activity within the entire District, comprised of a mix of uses that allow parking efficiencies to be realized by sharing the overall parking supply. The other key redevelopment areas were treated independently, as they are not contiguous with the commercial core and are not within reasonable walking distance, and thus necessitate their own respective parking supplies.

Our parking demand projections utilize the recently-released 3rd Edition of our Shared Parking Model.

THE SHARED PARKING MODEL

Shared parking methodology was developed in the 1980s and has been a widely accepted industry standard for rightsizing parking facilities over the past 30+ years. Adopted by cities throughout the U.S., and codified in zoning ordinances as an accepted practice, shared parking is endorsed by the Urban Land Institute (ULI), the American Planning Association (APA), the National Parking Association (NPA), and International Council of Shopping Centers (ICSC), as an acceptable method of parking planning and management.

Shared parking allows for the sharing of parking spaces among uses in a mixed-use environment—in lieu of providing a minimum number of parking spaces for each individual use. Shared parking commonly results in a reduction of required parking spaces, or in this instance, a variety of land use programming options.

Shared Parking is defined as the ability to use the same parking resource by multiple nearby or adjacent land uses without encroachment. Shared parking takes into account the parking demand for more than 45 different

land uses; the availability and use of alternative modes of transportation; captive market effects[1]; and daily, hourly, and seasonal variations. In the case of the Heritage District, this shared parking analysis recognizes the interrelationship of parking among employees, visitors and customers. A shared parking model generates 456 parking demand computations as follows:

- 19 hours during a day, beginning at 6 a.m. and concluding at 1 a.m.
- 2 days per week, a weekday and a weekend day
- 12 months of the year
- 19 x 2 x 12 = 456 different calculations

The parking need for the modeled land use mix is derived based on the highest figure generated from these 456 computations. Therefore, the intent is to design for the busiest hour of the year, busiest day of the year, and busiest month of the year, at an 85th percentile level relative to similar properties and under typical conditions.

A shared parking analysis begins first by taking the land use quantities of the Project (i.e., square footage of office space, number of hotel rooms, number of dwelling units) and multiplying by a base parking demand ratio and monthly and hourly adjustment factors. All base ratios and hourly and monthly adjustments are industry standards that are based on thousands of parking occupancy studies, vetted by leading parking consultants and real estate professionals, and documented within the Third Edition of ULI/ICSC's *Shared Parking* and the Institute of Transportation Engineers (ITE) Fifth Edition of *Parking Generation*.

Walker, as the consultant for this particular study and in accordance with standard shared-parking methodology, applies two additional adjustments to the base parking demand ratios, one to reflect an estimate of the local transportation modal split (called the driving ratio) and another to account for the best estimate of captive market effects[2] (called the non-captive ratio). These will all be described in more detail in the sections to follow.

Figure 17 provides an illustrative view of the steps involved in the shared parking analysis.

Figure 17: Steps of the Shared Parking Model

Land Use Units (Number of rooms, square footage, etc.)	X	Standard or Base Parking Generation Ratio	X	Monthly Factor	X	Hourly Factor	X	Driving Ratio	X	Non-Captive Ratio	=	TOTAL

Source: Walker Consultants

For most land uses, shared parking is based on the 85th percentile of peak-hour observations, a standard espoused by the ITE, the NPA's Parking Consultants Council, the International Parking and Mobility Institute, and renowned parking planners. This 85th percentile is a significant and high threshold to meet in terms of supplying parking capacity in that it is provides a parking supply that will not be needed by a majority of developments.

[1] Recognition of a user group already on site for another primary purpose and not generating incremental parking demand for an accessory use. For example, a sandwich shop located in an office tower generates very little, if any, outside parking demand. Since the parking demand for the office tower tenants has already been accounted for, to avoid double counting, a non-captive adjustment factor is applied to the parking demand calculation for the sandwich shop. In this extreme example, the non-captive ratio may be 0 percent.
[2] Captive market means attendees who are on-site for more than one reason and are not creating additive parking demand.

The 85th percentile recommendation is informed by field data counts in the fifth edition of ITE's *Parking Generation*[3] and this threshold represents the 85th percentile of peak-hour observations supplied during the study. Comparatively, an average commercial project could be expected to generate parking needs near the 50th percentile level of activity.

The key goal of a shared parking analysis is to find the balance between providing adequate parking to support a development from a commercial and operational standpoint and protect the interests of neighboring property owners, while minimizing the negative aspects of excessive land area or resources devoted to parking. The ultimate goal of a shared parking analysis is to find a peak period, reasonably predictable worst-case scenario, or design day condition.

MODELLING FUTURE PARKING DEMAND FROM NEW DEVELOPMENT

As stated in the methodology, future parking needs were projected based on shared parking opportunities. As such, Walker constructed five parking models to represent the entirety of the District's future needs according to the analysis conducted in Steps 1 and 2. These are:

1. Key redevelopment sites in core area with known timeframes of buildout/completion
    a. North Anchor/Commons
    b. Elm Street/Neighborhood Park
    c. Vaughn Ventilator
    d. Living Room Plaza
2. Other sites in core area with unknown timeframes of buildout/completion
    a. Other currently undeveloped sites
    b. Other sites with existing development that are candidates for redevelopment
3. South Anchor
4. Parcel southeast of Elliot Road and Gilbert Road
5. Long Range Planning Area

NOTES ABOUT MODELS

Any projects completed within the second model would comprise the same *de facto* shared parking area as all key redevelopment areas in the first model. Therefore, the second model includes parking needs identified in the first model in addition to needs for sites in 2a and 2b above.

Also, most of the observed peak months and times for the various models differ from currently understood parking peaks, which occur on evenings and weekends during March. This is due to the differing land use mix of new development being proposed, which consists mostly of office, multi-family residential, and hotel development, all of which have parking demand patterns that differ from those for retail, restaurant, and entertainment.

The following numbers only represent aggregate total new parking needed to support future programming information as assumed in Steps 1 and 2. The numbers do not take into account existing parking supply that will

[3] Parking Generation, Fifth Edition. Washington DC: Institute of Transportation Engineers, 2019.

be lost, nor do they account for changes in land use or developments outside of what has been assumed in this report.

As stated previously, parking demand for the new transit center is not considered here, and is assumed to be self-contained, regardless of where the center is eventually located.

Finally, these models only account for typical peak parking demand scenarios. They do not take into account atypical parking demand resulting from events such as the Farmer's Market or other special events in the District.

In all models, peak total estimated parking demand per user group is highlighted in yellow.

In general, conservative driving ratios and non-captive ratios were utilized, given the suburban context of the Heritage District and typical suburban automobile ownership patterns in most Phoenix suburbs. Hourly peak adjustments were made for bar/lounge/nightlife uses.

KEY REDEVELOPMENT SITES IN CORE AREA

For the sites within the core area, peak annual demand will occur on a typical weekday in May at 11 AM.

Walker estimates that a total of approximately 1,839 spaces will be needed at buildout for the core area, representing an effective reduction of 28% versus calculating the parking demand loads of each constituent land use in these sites separately and then summing (no shared parking).

Table 26: Base Ratios for Demand, Mode Share, and Captivity (Key Redevelopment Sites) - Weekday

Land Use	Project Data	per Unit	Weekday				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	36,248	sf GLA	2.90	100%	95%	2.75	ksf GLA
Retail (Employees)			0.70	100%	98%	0.69	ksf GLA
Restaurant	18,124	sf GLA	12.40	100%	54%	6.66	ksf GLA
Restaurant (Employees)			2.00	100%	98%	1.96	ksf GLA
Bar/Lounge/Nightlife	18,124	sf GLA	15.25	100%	80%	12.20	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.25	100%	98%	1.22	ksf GLA
Park	2	acre	4.00	100%	10%	0.40	acre
Park (Employees)			0.40	100%	98%	0.39	acre
Community/Cultural	42,255	sf GLA	2.00	100%	95%	1.90	ksf GLA
Community/Cultural (Employees)			0.25	100%	98%	0.24	ksf GLA
Hotel	150	keys	1.00	59%	100%	0.59	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	728	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.10	100%	100%	0.10	unit
Office	168,721	sf GFA	0.20	100%	100%	0.20	ksf GFA
Office (Employees)			2.83	100%	96%	2.71	ksf GLA

Source: Walker Consultants

Table 27: Base Ratios for Demand, Mode Share, and Captivity (Key Redevelopment Sites) - Weekend

Land Use	Project Data	per Unit	Weekend				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	36,248	sf GLA	3.20	100%	96%	3.06	ksf GLA
Retail (Employees)			0.80	100%	97%	0.77	ksf GLA
Restaurant	18,124	sf GLA	12.70	100%	69%	8.75	ksf GLA
Restaurant (Employees)			2.00	100%	97%	1.94	ksf GLA
Bar/Lounge/Nightlife	18,124	sf GLA	17.50	100%	80%	14.00	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.50	100%	97%	1.45	ksf GLA
Park	2	acre	5.00	100%	10%	0.50	
Park (Employees)			0.50	100%	97%	0.48	acre
Community/Cultural	42,255	sf GLA	1.90	100%	96%	1.82	ksf GLA
Community/Cultural (Employees)			0.20	100%	97%	0.19	ksf GLA
Hotel	150	keys	1.00	69%	100%	0.69	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	728	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.15	100%	100%	0.15	unit
Office	168,721	sf GFA	0.03	100%	100%	0.03	ksf GFA
Office (Employees)			0.28	100%	96%	0.27	ksf GLA

Source: Walker Consultants

Table 28: Design Day Peak Parking Demand Loads (Key Redevelopment Sites)

Land Use	Weekday			Weekend		
	Peak Hour	Peak Month	Estimated Parking Demand	Peak Hour	Peak Month	Estimated Parking Demand
	11 AM	May		12 PM	May	
Retail	75%	72%	54	95%	72%	76
Retail (Employees)	95%	82%	20	100%	82%	23
Restaurant	85%	99%	102	100%	99%	158
Restaurant (Employees)	100%	100%	36	100%	100%	36
Bar/Lounge/Nightlife	0%	97%	0	25%	97%	62
Bar/Lounge/Nightlife (Employees)	5%	100%	1	5%	100%	1
Park	65%	100%	1	75%	100%	1
Park (Employees)	100%	100%	1	100%	100%	1
Community/Cultural	98%	90%	71	80%	90%	56
Community/Cultural (Employees)	100%	95%	10	100%	95%	8
Hotel	60%	95%	51	55%	95%	54
Hotel (Employees)	100%	95%	21	100%	95%	21
Multi-family (Residents, All Unit Types)	100%	100%	983	100%	100%	983
Multi-family (Visitors)	20%	100%	15	20%	100%	22
Office	45%	100%	16	90%	100%	5
Office (Employees)	100%	100%	457	90%	100%	41
Design Day Peak Demand Totals		**Customer/Visitor**	**309**		**Customer/Visitor**	**434**
		Employees	**547**		**Employees**	**132**
		Residents	**983**		**Residents**	**983**
		Total	**1,839**		**Total**	**1,549**
Shared Parking Reduction		**Weekday**	**28%**		**Weekend**	**29%**

Source: Walker Consultants

KEY REDEVELOPMENT SITES + OTHER CORE AREA SITES

For these sites, peak annual demand will occur on a typical weekday in December at 2 PM.

For these sites, which include parking needs determined previously, Walker estimates that a total of approximately 3,158 spaces will be needed at buildout, representing an effective reduction of 27% versus calculating the parking demand loads of each constituent land use in these sites separately and then summing (no shared parking). When considered separately, demand for these sites peaks during weekends, with a need of about 1,412 spaces.

Table 29: Base Ratios for Demand, Mode Share, and Captivity (Other Sites + Key Redevelopment Sites) - Weekday

Land Use	Project Data	per Unit	Weekday				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	63,587	sf GLA	2.90	100%	95%	2.76	ksf GLA
Retail (Employees)			0.70	100%	98%	0.68	ksf GLA
Restaurant	31,794	sf GLA	12.40	100%	57%	7.11	ksf GLA
Restaurant (Employees)			2.00	100%	98%	1.95	ksf GLA
Bar/Lounge/Nightlife	31,794	sf GLA	15.25	100%	80%	12.20	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.25	100%	98%	1.22	ksf GLA
Park		acre	4.00	100%	100%	4.00	acre
Park (Employees)			0.40	100%	98%	0.39	acre
Community/Cultural		sf GLA	2.00	100%	95%	1.90	ksf GLA
Community/Cultural (Employees)			0.25	100%	98%	0.24	ksf GLA
Hotel	320	keys	1.00	59%	100%	0.59	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	1,440	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.10	100%	100%	0.10	unit
Office	277,615	sf GFA	0.13	100%	100%	0.13	ksf GFA
Office (Employees)			2.32	100%	94%	2.17	ksf GLA

Source: Walker Consultants

Table 30: Base Ratios for Demand, Mode Share, and Captivity (Other Sites + Key Redevelopment Sites) - Weekend

Land Use	Project Data	per Unit	Weekend				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	63,587	sf GLA	3.20	100%	91%	2.92	ksf GLA
Retail (Employees)			0.80	100%	95%	0.76	ksf GLA
Restaurant	31,794	sf GLA	12.70	100%	59%	7.50	ksf GLA
Restaurant (Employees)			2.00	100%	95%	1.90	ksf GLA
Bar/Lounge/Nightlife	31,794	sf GLA	17.50	100%	70%	12.25	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.50	100%	95%	1.43	ksf GLA
Park		acre	5.00	100%	100%	5.00	
Park (Employees)			0.50	100%	95%	0.48	acre
Community/Cultural		sf GLA	1.90	100%	91%	1.73	ksf GLA
Community/Cultural (Employees)			0.20	100%	95%	0.19	ksf GLA
Hotel	320	keys	1.00	69%	100%	0.69	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	1,440	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.15	100%	100%	0.15	unit
Office	277,615	sf GFA	0.03	100%	100%	0.03	ksf GFA
Office (Employees)			0.23	100%	94%	0.22	ksf GLA

Source: Walker Consultants

Table 31: Design Day Peak Parking Demand Loads (Other Sites + Key Redevelopment Sites)

Land Use	Weekday			Weekend		
	Peak Hour	Peak Month	Estimated Parking Demand	Peak Hour	Peak Month	Estimated Parking Demand
	2 PM	December		9 PM	May	
Retail	100%	100%	176	50%	72%	67
Retail (Employees)	100%	100%	44	65%	82%	26
Restaurant	90%	96%	196	30%	99%	71
Restaurant (Employees)	95%	100%	59	40%	100%	24
Bar/Lounge/Nightlife	0%	96%	0	100%	97%	379
Bar/Lounge/Nightlife (Employees)	10%	100%	4	100%	100%	46
Park	100%	75%	0	100%	100%	0
Park (Employees)	100%	85%	0	100%	100%	0
Community/Cultural	72%	65%	0	0%	90%	0
Community/Cultural (Employees)	100%	65%	0	0%	95%	0
Hotel	60%	60%	68	85%	95%	179
Hotel (Employees)	100%	60%	29	20%	95%	9
Multi-family (Residents, All Unit Types)	100%	100%	1,944	100%	100%	1,944
Multi-family (Visitors)	20%	100%	29	100%	100%	216
Office	95%	100%	35	0%	100%	0
Office (Employees)	95%	100%	574	0%	100%	0
Design Day Peak Demand Totals		**Customer/Visitor**	**504**		**Customer/Visitor**	**912**
		Employees	**710**		**Employees**	**105**
		Residents	**1,944**		**Residents**	**1,944**
		Total	**3,158**		**Total**	**2,961**
Shared Parking Reduction		**Weekday**	**27%**		**Weekend**	**25%**

Source: Walker Consultants

SOUTH ANCHOR

For these sites, peak annual demand will occur on a typical weekday in December at 2 PM.

For these sites, Walker estimates that a total of approximately 175 spaces will be needed at buildout, representing an effective reduction of 22% versus calculating the parking demand loads of each constituent land use in these sites separately and then summing (no shared parking).

Table 32: Base Ratios for Demand, Mode Share, and Captivity (South Anchor) - Weekday

Land Use	Project Data	per Unit	Weekday				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	3,303	sf GLA	2.90	100%	96%	2.77	ksf GLA
Retail (Employees)			0.70	100%	97%	0.68	ksf GLA
Restaurant	1,651	sf GLA	12.40	100%	62%	7.66	ksf GLA
Restaurant (Employees)			2.00	100%	97%	1.94	ksf GLA
Bar/Lounge/Nightlife	1,651	sf GLA	15.25	100%	80%	12.20	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.25	100%	97%	1.21	ksf GLA
Park		acre	4.00	100%	100%	4.00	acre
Park (Employees)			0.40	100%	97%	0.39	acre
Community/Cultural		sf GLA	2.00	100%	96%	1.91	ksf GLA
Community/Cultural (Employees)			0.25	100%	97%	0.24	ksf GLA
Hotel		keys	1.00	59%	100%	0.59	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	80	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.10	100%	100%	0.10	unit
Office	10,381	sf GFA	0.31	100%	100%	0.31	ksf GFA
Office (Employees)			3.57	100%	94%	3.35	ksf GLA

Source: Walker Consultants

Table 33: Base Ratios for Demand, Mode Share, and Captivity (South Anchor) - Weekend

Land Use	Project Data	per Unit	Weekend				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	3,303	sf GLA	3.20	100%	92%	2.94	ksf GLA
Retail (Employees)			0.80	100%	95%	0.76	ksf GLA
Restaurant	1,651	sf GLA	12.70	100%	64%	8.12	ksf GLA
Restaurant (Employees)			2.00	100%	95%	1.90	ksf GLA
Bar/Lounge/Nightlife	1,651	sf GLA	17.50	100%	70%	12.25	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.50	100%	95%	1.43	ksf GLA
Park		acre	5.00	100%	100%	5.00	
Park (Employees)			0.50	100%	95%	0.48	acre
Community/Cultural		sf GLA	1.90	100%	92%	1.75	ksf GLA
Community/Cultural (Employees)			0.20	100%	95%	0.19	ksf GLA
Hotel		keys	1.00	69%	100%	0.69	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	80	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.15	100%	100%	0.15	unit
Office	10,381	sf GFA	0.03	100%	100%	0.03	ksf GFA
Office (Employees)			0.36	100%	94%	0.33	ksf GLA

Source: Walker Consultants

Table 34: Design Day Peak Parking Demand Loads (South Anchor)

Land Use	Weekday			Weekend		
	Peak Hour	Peak Month	Estimated Parking Demand	Peak Hour	Peak Month	Estimated Parking Demand
	2 PM	December		7 PM	December	
Retail	100%	100%	10	60%	100%	6
Retail (Employees)	100%	100%	3	80%	100%	2
Restaurant	90%	96%	11	80%	96%	10
Restaurant (Employees)	95%	100%	4	90%	100%	3
Bar/Lounge/Nightlife	0%	96%	0	50%	96%	10
Bar/Lounge/Nightlife (Employees)	10%	100%	0	100%	100%	3
Park	100%	75%	0	80%	75%	0
Park (Employees)	100%	85%	0	100%	85%	0
Community/Cultural	72%	65%	0	0%	65%	0
Community/Cultural (Employees)	100%	65%	0	10%	65%	0
Hotel	60%	60%	0	75%	60%	0
Hotel (Employees)	100%	50%	0	20%	50%	0
Multi-family (Residents, All Unit Types)	100%	100%	108	100%	100%	108
Multi-family (Visitors)	20%	100%	2	100%	100%	12
Office	95%	100%	4	0%	100%	0
Office (Employees)	95%	100%	34	0%	100%	0
Design Day Peak Demand Totals		**Customer/Visitor**	**26**		**Customer/Visitor**	**38**
		Employees	**41**		**Employees**	**9**
		Residents	**108**		**Residents**	**108**
		Total	**175**		**Total**	**155**
Shared Parking Reduction		**Weekday**	**22%**		**Weekend**	**21%**

Source: Walker Consultants

PARCEL SOUTHEAST OF ELLIOT ROAD AND GILBERT ROAD

For this site, peak annual demand will occur on a typical weekday in December at 2 PM.

For these sites, Walker estimates that a total of approximately 196 spaces will be needed at buildout, representing an effective reduction of 34% versus calculating the parking demand loads of each constituent land use in these sites separately and then summing (no shared parking).

Table 35: Base Ratios for Demand, Mode Share, and Captivity (Parcel Southeast of Elliot and Gilbert) - Weekday

Land Use	Project Data	per Unit	Weekday				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	8,860	sf GLA	2.90	100%	97%	2.82	ksf GLA
Retail (Employees)			0.70	100%	100%	0.70	ksf GLA
Restaurant	4,430	sf GLA	12.40	100%	70%	8.69	ksf GLA
Restaurant (Employees)			2.00	100%	100%	2.00	ksf GLA
Bar/Lounge/Nightlife	4,430	sf GLA	15.25	100%	80%	12.20	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.25	100%	100%	1.25	ksf GLA
Park		acre	4.00	100%	100%	4.00	acre
Park (Employees)			0.40	100%	100%	0.40	acre
Community/Cultural		sf GLA	2.00	100%	97%	1.95	ksf GLA
Community/Cultural (Employees)			0.25	100%	100%	0.25	ksf GLA
Hotel		keys	1.00	59%	100%	0.59	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)		units	0.00	100%	100%	0.00	unit
Multi-family (Visitors)			0.10	100%	100%	0.10	unit
Office	34,005	sf GFA	0.29	100%	100%	0.29	ksf GFA
Office (Employees)			3.46	100%	100%	3.46	ksf GLA

Source: Walker Consultants

Table 36: Base Ratios for Demand, Mode Share, and Captivity (Parcel Southeast of Elliot and Gilbert) - Weekend

Land Use	Project Data	per Unit	Weekend				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail	8,860	sf GLA	3.20	100%	99%	3.17	ksf GLA
Retail (Employees)			0.80	100%	100%	0.80	ksf GLA
Restaurant	4,430	sf GLA	12.70	100%	91%	11.53	ksf GLA
Restaurant (Employees)			2.00	100%	100%	2.00	ksf GLA
Bar/Lounge/Nightlife	4,430	sf GLA	17.50	100%	80%	14.00	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.50	100%	100%	1.50	ksf GLA
Park		acre	5.00	100%	100%	5.00	
Park (Employees)			0.50	100%	100%	0.50	acre
Community/Cultural		sf GLA	1.90	100%	99%	1.88	ksf GLA
Community/Cultural (Employees)			0.20	100%	100%	0.20	ksf GLA
Hotel		keys	1.00	69%	100%	0.69	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)		units	0.00	100%	100%	0.00	unit
Multi-family (Visitors)			0.15	100%	100%	0.15	unit
Office	34,005	sf GFA	0.03	100%	100%	0.03	ksf GFA
Office (Employees)			0.35	100%	100%	0.35	ksf GLA

Source: Walker Consultants

Table 37: Design Day Peak Parking Demand Loads (Parcel Southeast of Elliot and Gilbert)

Land Use	Weekday			Weekend		
	Peak Hour	Peak Month	Estimated Parking Demand	Peak Hour	Peak Month	Estimated Parking Demand
	2 PM	December		12 PM	December	
Retail	100%	100%	25	100%	100%	29
Retail (Employees)	100%	100%	7	100%	100%	8
Restaurant	90%	96%	33	100%	96%	50
Restaurant (Employees)	95%	100%	9	100%	100%	9
Bar/Lounge/Nightlife	0%	96%	0	25%	96%	15
Bar/Lounge/Nightlife (Employees)	10%	100%	1	5%	100%	0
Park	100%	75%	0	75%	75%	0
Park (Employees)	100%	85%	0	100%	85%	0
Community/Cultural	72%	65%	0	80%	65%	0
Community/Cultural (Employees)	100%	65%	0	100%	65%	0
Hotel	60%	60%	0	55%	60%	0
Hotel (Employees)	100%	50%	0	100%	50%	0
Multi-family (Residents, All Unit Types)	100%	100%	0	100%	100%	0
Multi-family (Visitors)	20%	100%	0	20%	100%	0
Office	95%	100%	10	90%	100%	2
Office (Employees)	95%	100%	112	90%	100%	11
Design Day Peak Demand Totals		Customer/Visitor	68		Customer/Visitor	95
		Employees	128		Employees	28
		Residents	-		Residents	-
		Total	196		Total	123
Shared Parking Reduction		Weekday	34%		Weekend	39%

Source: Walker Consultants

LONG RANGE PLANNING AREA

For these sites, Walker determined that peak annual demand would occur on a typical weekend in January at 7 PM.

For these sites, Walker estimates that a total of approximately 733 spaces will be needed at buildout. As there is only one type of land use modelled, there is no reduction for shared parking.

Table 38: Base Ratios for Demand, Mode Share, and Captivity (Long Range Planning Area) - Weekday

Land Use	Project Data	per Unit	Weekday				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail		sf GLA	2.90	100%	100%	2.90	ksf GLA
Retail (Employees)			0.70	100%	100%	0.70	ksf GLA
Restaurant		sf GLA	12.40	100%	100%	12.40	ksf GLA
Restaurant (Employees)			2.00	100%	100%	2.00	ksf GLA
Bar/Lounge/Nightlife		sf GLA	15.25	100%	70%	10.68	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.25	100%	100%	1.25	ksf GLA
Park		acre	4.00	100%	100%	4.00	acre
Park (Employees)			0.40	100%	100%	0.40	acre
Community/Cultural		sf GLA	2.00	100%	100%	2.00	ksf GLA
Community/Cultural (Employees)			0.25	100%	100%	0.25	ksf GLA
Hotel		keys	1.00	59%	100%	0.59	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	488	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.10	100%	100%	0.10	unit
Office		sf GFA	0.32	100%	100%	0.32	ksf GFA
Office (Employees)			3.62	100%	100%	3.62	ksf GLA

Source: Walker Consultants

Table 39: Base Ratios for Demand, Mode Share, and Captivity (Long Range Planning Area) - Weekend

Land Use	Project Data	per Unit	Weekend				
			Base Ratio	Driving Ratio	Non-Captive Ratio	Project Ratio	Unit For Ratio
Retail		sf GLA	3.20	100%	100%	3.20	ksf GLA
Retail (Employees)			0.80	100%	100%	0.80	ksf GLA
Restaurant		sf GLA	12.70	100%	100%	12.70	ksf GLA
Restaurant (Employees)			2.00	100%	100%	2.00	ksf GLA
Bar/Lounge/Nightlife		sf GLA	17.50	100%	70%	12.25	ksf GLA
Bar/Lounge/Nightlife (Employees)			1.50	100%	100%	1.50	ksf GLA
Park		acre	5.00	100%	100%	5.00	
Park (Employees)			0.50	100%	100%	0.50	acre
Community/Cultural		sf GLA	1.90	100%	100%	1.90	ksf GLA
Community/Cultural (Employees)			0.20	100%	100%	0.20	ksf GLA
Hotel		keys	1.00	69%	100%	0.69	key
Hotel (Employees)			0.15	100%	100%	0.15	key
Multi-family (Residents, All Unit Types)	488	units	1.35	100%	100%	1.35	unit
Multi-family (Visitors)			0.15	100%	100%	0.15	unit
Office		sf GFA	0.03	100%	100%	0.03	ksf GFA
Office (Employees)			0.36	100%	100%	0.36	ksf GLA

Source: Walker Consultants

Table 40: Design Day Peak Parking Demand Loads (Long Range Planning Area)

Land Use	Weekday			Weekend		
	Peak Hour	Peak Month	Estimated Parking Demand	Peak Hour	Peak Month	Estimated Parking Demand
	7 PM	January		7 PM	January	
Retail	80%	59%	0	70%	59%	0
Retail (Employees)	100%	69%	0	80%	69%	0
Restaurant	80%	85%	0	80%	85%	0
Restaurant (Employees)	90%	96%	0	90%	96%	0
Bar/Lounge/Nightlife	50%	87%	0	50%	87%	0
Bar/Lounge/Nightlife (Employees)	100%	95%	0	100%	95%	0
Park	100%	25%	0	80%	25%	0
Park (Employees)	100%	50%	0	100%	50%	0
Community/Cultural	50%	75%	0	0%	75%	0
Community/Cultural (Employees)	50%	85%	0	10%	85%	0
Hotel	75%	60%	0	75%	60%	0
Hotel (Employees)	20%	80%	0	20%	80%	0
Multi-family (Residents, All Unit Types)	100%	100%	659	100%	100%	659
Multi-family (Visitors)	100%	100%	49	100%	100%	74
Office	2%	100%	0	0%	100%	0
Office (Employees)	15%	100%	0	0%	100%	0
Design Day Peak Demand Totals		**Customer/Visitor**	**49**		**Customer/Visitor**	**74**
		Employees	**-**		**Employees**	**-**
		Residents	**659**		**Residents**	**659**
		Total	**708**		**Total**	**733**
Shared Parking Reduction		**Weekday**	**0%**		**Weekend**	**0%**

Source: Walker Consultants

TOTAL ESTIMATED FUTURE PARKING NEEDS FOR NEW DEVELOPMENT

In order to serve all future development, as it is understood in these models and in this report, Walker estimates that a total of 4,237 parking spaces will be needed. If excluding the Long Range Planning Area, that number decreases to 3,529 spaces, as summarized in **Table 41**. Again, note that these figures do not account for losses in the existing parking supply that will result from new development and infill development proposed and were determined using the assumptions and programming information contained in this report.

Table 41: Heritage District Design Day Peak Parking Demand Loads for All New Development by Area

Key Redevelopment Area	Weekday Peak (Typical)	Weekend Peak (Typical)
Key Redevelopment Areas in Core Area (Known Timeframe)	1,839	1,549
Other Sites in Core Area	1,319	1,412
South Anchor	175	155
Parcel Southeast of Elliot and Gilbert Roads	196	123
Long Range Planning Area	708	733
Total	**4,237**	**3,972**
Total (Excluding Long Range Planning Area)	**3,529**	**3,239**

Source: Walker Consultants

DIFFERENCES BETWEEN SHARED PARKING MODEL AND TOWN CODE REQUIREMENTS

Walker performed a high-level analysis to compare our 85th percentile peak parking demand loads for all new development in all key redevelopment areas, as highlighted in our models above, to requirements for the respective land uses as stated in the Town of Gilbert Development Code.

Table 42 illustrates code parking supply requirements as outlined in the Code for the respective high-level land uses that we used in our model, as well as other uses found currently within the Heritage District.

Table 42: Town Code Requirements

Land Use Category from Code	Spaces Required	per	Unit of Measurement
Multi-Family	1	Studio, 1 Bed	DU
	2	2+ Beds	DU
	0.25	1	Guest
Retail Sales, General	1	250	Square Feet
Eating and Drinking Establishments	1	100	Square Feet
Outdoor Dining Area	1	400	Square Feet
Cultural Institutions	1	200	Square Feet
Office	1	250	Square Feet
Hotel	1.1	1	Room
College/University	1	200	Square Feet
Parks	No Requirement		

Source: Walker Consultants

It should also be noted that, though there do not appear to be any specific alternative parking minimum requirements for the Heritage District, the Code does permit reductions for shared parking under Chapter 4.203 Section H. With review and approval by Town staff, a shared parking reduction of up to 50% compared to the typical sum total of required parking for each individual constituent land use for a development is possible.

REQUIREMENTS BY CODE

The typical Town parking requirement by code, for the buildout programming analyzed, would be 6,242 spaces across all key redevelopment areas, as summarized in **Table 43**.

Table 43: Requirements by Land Use and Key Redevelopment Area per Town Code Requirements

Key Redevelopment Area	General Retail	Restaurant (Fast Casual)	Bar/Lounge	Park	Community	Hotel	Studio + 1 Bedroom	2 + Bedrooms	Office	Total
Key Redevelopment Areas in Core Area	145	181	181	-	211	165	455	819	675	2,833
Other Sites in Core Area	109	137	137	-	-	-	445	802	436	2,065
South Anchor	13	17	17	-	-	-	51	91	42	230
Southeast of Elliot and Gilbert	35	44	44	-	-	-	-	-	136	260
Long Range Planning Area	-	-	-	-	-	-	305	549	-	854
Total	**303**	**379**	**379**	**-**	**211**	**165**		**3,518**	**1,288**	**6,242**

Source: Walker Consultants

SHARED PARKING MODEL REQUIREMENTS & PERCENT REDUCTION

When comparing directly across land use categories as aggregated together above in **Table 43**, Walker's 85th percentile peak parking demand decreases to a total of 4,347 spaces, representing a decrease of about 30% after streamlining to account and adjust down for all shared parking opportunities. This decreased demand is summarized in **Table 44**.

Table 44: Requirements by Land Use and Key Redevelopment Area per Shared Parking Model

Key Redevelopment Area	General Retail	Restaurant (Fast Casual)	Bar/Lounge	Park	Community	Hotel	All Multi-Family	Office	Total	% Decrease from City Requirement
Key Redevelopment Areas in Core Area	74	138	1	2	81	72	998	473	1,839	-35%
Other Sites in Core Area	146	117	3	0	0	25	975	136	1,402	-32%
South Anchor	13	15	0	0	0	0	110	38	176	-23%
Southeast of Elliot & Gilbert	32	42	1	0	0	0	0	122	197	-24%
Long Range Planning Area	0	0	0	0	0	0	733	0	733	-14%
Total	**265**	**312**	**5**	**2**	**81**	**97**	**2,816**	**769**	**4,347**	**-30%**

Source: Walker Consultants

For all key redevelopment areas, the respective percent reduction in the parking needs we have calculated versus Town requirements is below the maximum 50% threshold permitted by the shared parking exception in the Town code. Therefore, we believe that, with Town staff approval, our model's projected reduced parking supply needs, as measured by 85th percentile peak demand, are permitted by current Code.

EFFECTS OF COVID-19 ON FUTURE GROWTH

The COVID-19 pandemic has resulted in an ongoing quarantine in the first half of 2020 that has disrupted typical economic and business demand patterns within the Heritage District. As of this writing, most US states have begun to transition to a "safer at home" quarantine model, where businesses have been allowed to reopen in a limited and regulated fashion.

While it is impossible to know the exact effects, in both the mid-term and the long-term, that the pandemic will have on economic activity, or the extent to which growth will be affected, Walker has examined a number of potential COVID-19-related growth scenarios at a high-level for the Heritage District that show the overall effect that the pandemic may have relative to historical growth for retail, restaurants, and hotels.

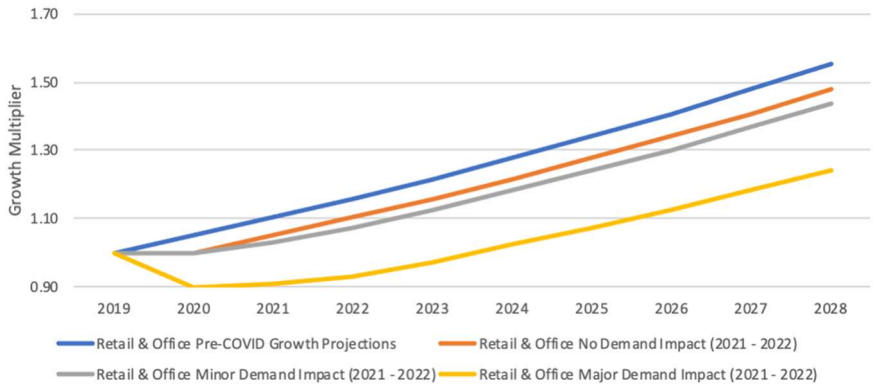
In general, Walker has assumed that the pandemic will effectively result in 0% new growth for 2020. Depending on the level of impact, it will take between one and three years for growth to resume its previous annual average. In our major-impact scenario, we have assumed a contraction of 10% in 2020, with growth resuming in 2021 from the point of contraction.

Note that these models are intended only to show how COVID-19-related effects may play out based on existing and historical growth of demand in the Heritage District and in the Town as a whole, assuming that new development were to take place at a steady rate that is consistent with historical trends. Therefore, these models should be considered in conjunction with, but separately from, the above future parking demand projections provided for new development as outlined in the Heritage District Master Plan.

RETAIL AND OFFICE

Based on historical growth since 2007, commercial retail has grown an average of 5% annually. According to pre-COVID growth projections, retail and office demand would have grown nearly 50% by 2028. Under a major impact scenario, however, that growth pattern could be cut in half, with only a 24% increase in the same time frame, with demand potentially not returning to pre-COVID levels until approximately 2024, representing a potential difference of 31% between the no-COVID scenario and the worst-case scenario in 2028. These scenarios are summarized in **Figure 18**.

Figure 18: Potential Effects on Retail and Office Growth through 2028

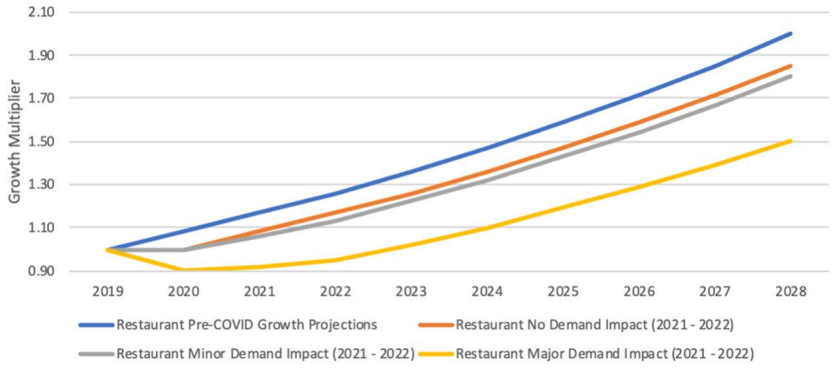


Source: Walker Consultants

RESTAURANT

Based on historical growth since 2007, restaurants have grown an average of 8% annually. According to pre-COVID growth projections, retail and office demand would have nearly doubled by 2028. Under a major impact scenario, however, restaurant growth might only be 50% in the same time frame, with demand potentially not returning to pre-COVID levels until approximately 2023, representing a potential difference of 50% between the no-COVID scenario and the worst-case scenario in 2028. These scenarios are summarized in **Figure 19**.

Figure 19: Potential Effects on Restaurant Growth through 2028

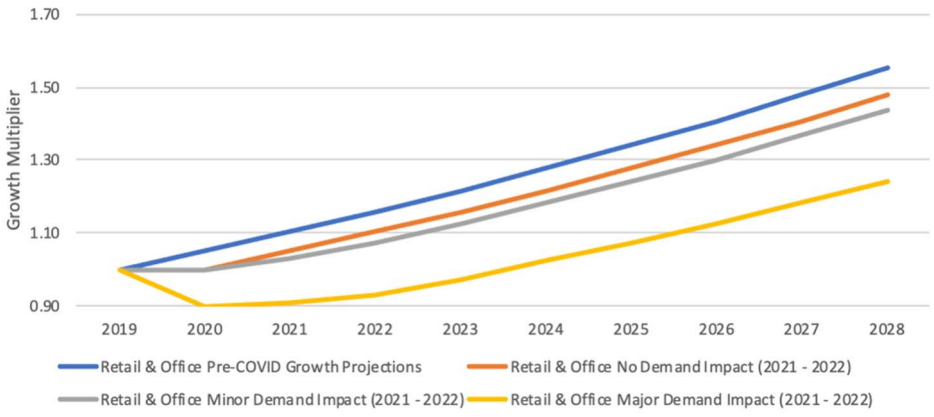


Source: Walker Consultants

HOTEL

Based on historical growth since 2012, hotels have grown an average of 15% annually. According to pre-COVID growth projections, retail and office demand would have grown 250% by 2028. Under a major impact scenario, however, that growth pattern could decrease to a little over 100%, with demand potentially not returning to pre-COVID levels until approximately 2024, representing a potential difference of 137% between the no-COVID scenario and the worst-case scenario in 2028. These scenarios are summarized in **Figure 20**.

Figure 20: Potential Effects on Retail and Office Growth through 2028



Source: Walker Consultants

TOTAL ESTIMATED PARKING LOSSES RESULTING FROM BUILDOUT

Table 45 shows the existing parking facilities that would be affected by buildout for each key redevelopment area, as identified in the HD Redevelopment Plan.

Note that the figures given represent the full removal of existing parking, assuming that all existing parking has been relocated, replaced, or removed.

Table 45: Total Future Parking Losses by Key Redevelopment Area and Site

Key Redevelopment Area	Site	Existing Parking Facilities Potentially Impacted	Estimated Maximum Parking Loss
Key Redevelopment Sites	North Anchor/Commons	2,6	625
	Elm Street/Neighborhood Park	18, 19, 22	350
	Vaughn Ventilator	None	0
	Living Room Plaza/District Core	7, 9, 12, 13, 20, 21, 23	755
		Total	**1,730**
Other Sites in Core Area	Other currently undeveloped sites	24, 25, 26	78
	Other sites with existing development that are candidates for redevelopment	None	0
		Total	**78**
South Anchor		None	0
Parcel southeast of Elliot Road and Gilbert Road		None	0
Long Range Planning Area		None	0
		Total (All)	**1,808**

Source: Walker Consultants

The vast majority of potential future parking losses fall within the Key Redevelopment Sites. Out of those sites, 625 spaces could be lost at buildout of the North Anchor/Commons, 350 spaces could be lost at full buildout of the Elm Street/Neighborhood Park, and 755 spaces could be lost at buildout of the Living Room Plaza/District Core. There is currently no existing surface parking at the Vaughn Ventilator site.

There are 78 additional surface parking spaces that could be lost with development of other sites in the core area, two of which are private lots belonging to existing businesses and one of which is a small public lot at the southeast corner of Gilbert Road and Cullumber Avenue.

The South Anchor, Elliot Road and Gilbert Road vacant parcel, and Long Range Planning Area all do not currently have any existing public-facing surface parking facilities that would be impacted, though it should be noted that the industrial uses in the Long Range Planning area do have a limited number of parking spaces that have not been accounted for in the table above.

In total, the Heritage District could lose approximately 1,800 spaces at full buildout, across all key redevelopment areas. Walker assumes that there would be no on-street parking losses.

FUTURE PARKING NEEDS AFTER ACCOUNTING FOR LOSSES AND CARRYOVER DEMAND

Table 46 shows peak weekday and weekend parking demand, as determined by our existing conditions analysis, within the parking facilities that will be or be potentially be impacted by buildout, sorted by key redevelopment area.

Table 46: Carryover Peak Demand for Parking Facilities within Each Key Redevelopment Area and Site

Key Redevelopment Area	Site	Facility ID	Facility Description	Weekday Peak	Weekend Peak	Remaining Adequacy
Key Redevelopment Sites	North Anchor/Commons	6	Gravel Lot Between Ash and Gilbert Road S of Juniper	145	145	0
			Sub-Total	**145**	**145**	**0**
	Vaughn Ventilator	7	Lot on NW Corner of Ash and Vaughn	3	6	0
		8	Vaughn West Garage	289	225	46
		9	Interior Lot East of Vaughn West Garage	54	58	0
			Sub-Total	**346**	**289**	**46**
	Elm Street/Neighborhood Park	10	Vaughn East Garage	495	502	41
		18	Private Parking Behind Whiskey Row and Joe's BBQ	30	30	1
		19	Lot NW Corner of Elm and Page	133	139	0
		22	Lot SW Corner of Elm and Page	177	173	0
			Sub-Total	**835**	**844**	**42**
	District Core/Living Room Plaza	12	Lot W of Oak	4	1	0
		13	Lot SW Corner of Ash and Vaughn	361	363	0
		14	Parking Around New Building on SE Corner of Vaughn and Ash	13	13	2
		15	Parking in Front of Oregano's	12	12	-1
		16	Hale Theater Parking	4	4	8
		17	Parking Behind Snooze and Postino East	6	6	0
		20	Lot SW Corner of Ash and Page	73	55	0
		21	Interior Lot SWC of Gilbert and Page	14	15	0
		23	Interior Lot NW Corner of Gilbert and Cullumber	31	32	0
			Sub-Total	**518**	**501**	**9**
			Total (Key Redevelopment Sites)	**1,845**	**1,780**	**97**
Other Sites in Core Area	All	24	Lot SE Corner of Gilbert and Cullumber	37	31	0
			Total (Other Sites in Core Area)	**37**	**31**	**0**
			Expected Decreases in Carryover Demand from Redevelopment	**(12)**	**(12)**	**0**
			Total (All)	**1,870**	**1,799**	**97**

Source: Walker Consultants

In all, there are 1,870 spaces' worth of existing parking demand on the weekday peak and 1,799 spaces' worth of existing parking demand on the weekend peak that must be accounted for. Broken down by site, there are 133 spaces' worth of demand to be accounted for in terms of the North Anchor/Commons site, and a maximum of 1,699 spaces' worth of demand to be accounted for in terms of the remaining Key Redevelopment Sites. Because most of the existing surface parking would be going away at buildout, only the two Vaughn parking structures would remain to absorb both existing carryover demand and any new parking demand generated in the future. Based on the peak parking surpluses observed in those two parking structures, there would be a total remaining parking surplus of + 97 spaces.

NET NEW PARKING NEEDED (SHARED PARKING)

Table 47 illustrates the net number of new parking spaces that will be needed to accommodate full buildout for each key redevelopment area.

In this table, calculated demand for all new development has been carried over from the previous section, which means that the figures are optimized in order to account for all possible shared parking reductions possible.

For the key redevelopment sites, existing carryover demand is distributed to each site approximately according to the areas from which it would have been displaced.

Table 47: Net New Parking Needed in Future by Key Redevelopment Area (Shared Parking)

Key Redevelopment Area	Key Statistic	Weekday Peak (Typical)	Weekend Peak (Typical)
Key Redevelopment Sites	Parking Needs for All New Development	1,839	1,549
	Existing Carryover Peak Off-Street Demand	1,833	1,768
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	2,016	1,944
	Remaining Off-Street Parking Surplus	-97	-97
	Net Future Parking Needed	**3,758**	**3,397**
Other Sites in Core Area	Parking Needs for All New Development	1,402	1,412
	Existing Carryover Peak Off-Street Demand	37	31
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	41	34
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**1,443**	**1,446**
South Anchor	Parking Needs for All New Development	175	155
	Existing Carryover Peak Off-Street Demand	0	0
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	0	0
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**175**	**155**
Parcel Southeast of Elliot and Gilbert Roads	Parking Needs for All New Development	196	123
	Existing Carryover Peak Off-Street Demand	0	0
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	0	0
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**196**	**123**
Long Range Planning Area	Parking Needs for All New Development	708	733
	Existing Carryover Peak Off-Street Demand	0	0
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	0	0
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**708**	**733**
Total (All)		**6,280**	**5,854**
Total (Excluding Long Range Planning Area)		**5,572**	**5,121**
Total (Excluding Long Range Planning Area & Other Core Area Sites With No Development Timetable)		**4,129**	**3,675**

Source: Walker Consultants

Under this scenario, during the weekday and weekend peaks, Walker estimates that 6,280 spaces and 5,854 spaces respectively would be needed to account for all demand across the entire HD at full buildout. This is allowing for a 10% supply cushion to service existing carryover peak demand. If excluding the Long Range Planning Area, those numbers decrease to 5,572 and 5,212 spaces respectively, or 4,129 and 3,675 if also excluding the other sites in the core area that have no redevelopment timetable.

NET NEW PARKING NEEDED (NO SHARED PARKING)

Table 48 illustrates the net number of new parking spaces that will be needed to accommodate full buildout for each key redevelopment area under a no-shared-parking scenario.

In this table, reductions from sharing parking amongst compatible land uses for each key redevelopment area have been reversed. Therefore, all parking needs for new development are considered separately, where all new development is assumed to be served by self-contained parking per each component land use. In this scenario, no parking is shared across any key redevelopment area for any new development.

Existing carryover demand, and how it was distributed to each site/area, remains unchanged.

Table 48: Net New Parking Needed in Future by Key Redevelopment Area (No Shared Parking)

Key Redevelopment Area	Key Statistic	Weekday Peak (Typical)	Weekend Peak (Typical)
Key Redevelopment Sites	Parking Needs for All New Development	2,519	2,066
	Existing Carryover Peak Off-Street Demand	1,833	1,768
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	2,016	1,944
	Remaining Off-Street Parking Surplus	-97	-97
	Net Future Parking Needed	**4,438**	**3,913**
Other Sites in Core Area	Parking Needs for All New Development	1,921	1,883
	Existing Carryover Peak Off-Street Demand	37	31
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	41	34
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**1,961**	**1,917**
South Anchor	Parking Needs for All New Development	224	196
	Existing Carryover Peak Off-Street Demand	0	0
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	0	0
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**224**	**196**
Parcel Southeast of Elliot and Gilbert Roads	Parking Needs for All New Development	298	202
	Existing Carryover Peak Off-Street Demand	0	0
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	0	0
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**298**	**202**
Long Range Planning Area	Parking Needs for All New Development	708	733
	Existing Carryover Peak Off-Street Demand	0	0
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	0	0
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**708**	**733**
Total (All)		**7,629**	**6,961**
Total (Excluding Long Range Planning Area)		**6,921**	**6,228**
Total (Excluding Long Range Planning Area & Other Core Area Sites With No Development Timetable)		**4,960**	**4,311**

Source: Walker Consultants

Under this scenario, during the weekday and weekend peaks, Walker estimates that 7,629 spaces and 6,961 spaces respectively would be needed to all demand across the entire HD at full buildout. This is allowing for a 10% supply cushion to service existing carryover demand. If excluding the Long Range Planning Area, those numbers decrease to 6,921 and 56,228 spaces respectively, or 4,690 and 4,311 if also excluding the other sites in the core area that have no redevelopment timetable.

NET NEW PARKING NEEDED IN CORE AREA SITES ONLY (SHARED PARKING)

Table 49 illustrates the net number of new parking spaces that will be needed to accommodate full buildout in the core area only, sorted by site.

In this table, calculated demand for all new development has been carried over from the previous section, which means that the figures are optimized in order to account for all possible shared parking reductions possible.

As noted before, existing carryover demand for these sites is distributed to each site approximately according to the areas from which it would have been displaced. For instance, while the Vaughn Ventilator site constitutes the largest share of total new redevelopment square footage of any core area redevelopment site, currently no existing parking supply or demand is being displaced from it. Therefore, distribution of future net parking needs is weighted less towards that site and more towards the other sites where existing carryover demand as well as parking supply are being displaced.

Table 49: Net Core Area New Parking Needed in Future by Core Area Site (Shared Parking)

Core Area Redevelopment Site	Key Statistic	Weekday Peak (Typical)	Weekend Peak (Typical)
North Anchor/Commons (2023)	Parking Needs for All New Development	625	527
	Existing Carryover Peak Off-Street Demand	133	133
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	146	146
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**772**	**673**
Vaughn Ventilator (2026)	Parking Needs for All New Development	772	651
	Existing Carryover Peak Off-Street Demand	346	289
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	381	318
	Remaining Off-Street Parking Surplus	-46	-46
	Net Future Parking Needed	**1,107**	**923**
Elm Street/Neighborhood Park (2024)	Parking Needs for All New Development	184	155
	Existing Carryover Peak Off-Street Demand	835	844
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	919	928
	Remaining Off-Street Parking Surplus	-42	-42
	Net Future Parking Needed	**1,060**	**1,041**
District Core/Living Room Plaza (2026)	Parking Needs for All New Development	257	217
	Existing Carryover Peak Off-Street Demand	518	501
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	570	552
	Remaining Off-Street Parking Surplus	-9	-9
	Net Future Parking Needed	**819**	**760**
	Total (Key Sites in Core Area Only)	**3,758**	**3,397**

Source: Walker Consultants

Under this scenario, shown in **Figure 21**, during the weekday and weekend peaks, Walker estimates that a maximum of 772 new, new spaces would be needed for the North Anchor/Commons Development, 1,107 spaces would be needed for the Vaughn Ventilator Development, 1,060 spaces would be needed for the Elm Street/Neighborhood Park Development, and 819 spaces would be needed for the District Core and Living Room Plaza.

NET NEW PARKING NEEDED IN CORE AREA SITES ONLY (NO SHARED PARKING)

Table 50 illustrates the net number of new parking spaces that will be needed to accommodate full buildout in the core area only under a no-shared-parking scenario, sorted by site.

In this table, reductions from sharing parking amongst compatible land uses for each core area site have been reversed. Therefore, all parking needs for new development are considered separately, where all new development is assumed to be served by self-contained parking per each component land use. In this scenario, no parking is shared across any key redevelopment area for any new development.

Existing carryover demand, and how it was distributed to each core area site, remains unchanged.

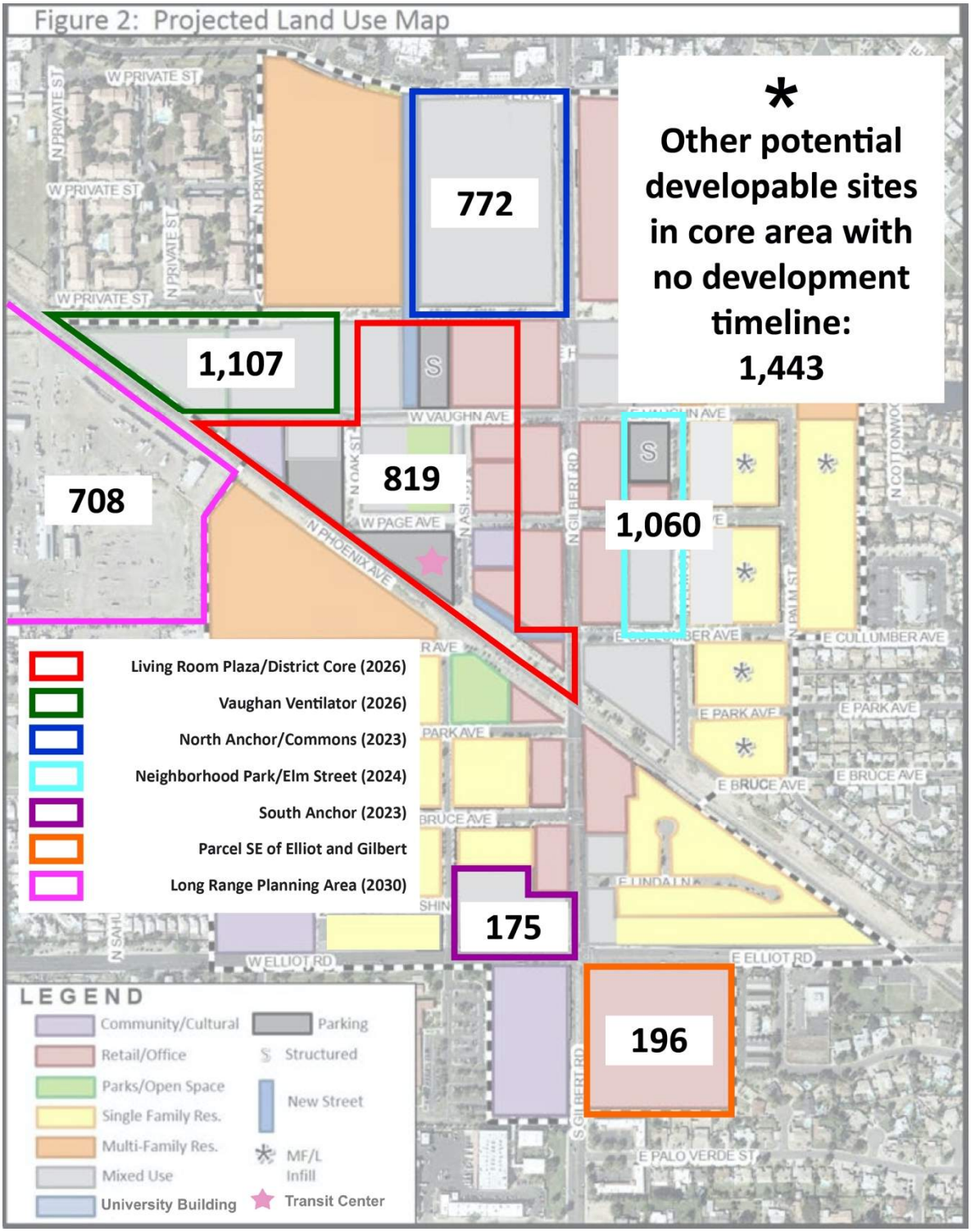
Table 50: Net Core Area New Parking Needed in Future by Core Area Site (No Shared Parking)

Core Area Redevelopment Site	Key Statistic	Weekday Peak (Typical)	Weekend Peak (Typical)
North Anchor/Commons (2023)	Parking Needs for All New Development	857	702
	Existing Carryover Peak Off-Street Demand	133	133
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	146	146
	Remaining Off-Street Parking Surplus	0	0
	Net Future Parking Needed	**1,003**	**849**
Vaughn Ventilator (2026)	Parking Needs for All New Development	1,058	868
	Existing Carryover Peak Off-Street Demand	346	289
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	381	318
	Remaining Off-Street Parking Surplus	-46	-46
	Net Future Parking Needed	**1,393**	**1,139**
Elm Street/Neighborhood Park (2024)	Parking Needs for All New Development	252	207
	Existing Carryover Peak Off-Street Demand	835	844
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	919	928
	Remaining Off-Street Parking Surplus	-42	-42
	Net Future Parking Needed	**1,128**	**1,093**
District Core/Living Room Plaza (2026)	Parking Needs for All New Development	353	289
	Existing Carryover Peak Off-Street Demand	518	501
	Parking Supply Needed to Accommodate Peak Carryover Off-Street Demand with 10% Cushion	570	552
	Remaining Off-Street Parking Surplus	-9	-9
	Net Future Parking Needed	**914**	**832**
	Total (Key Sites in Core Area Only)	**4,438**	**3,913**

Source: Walker Consultants

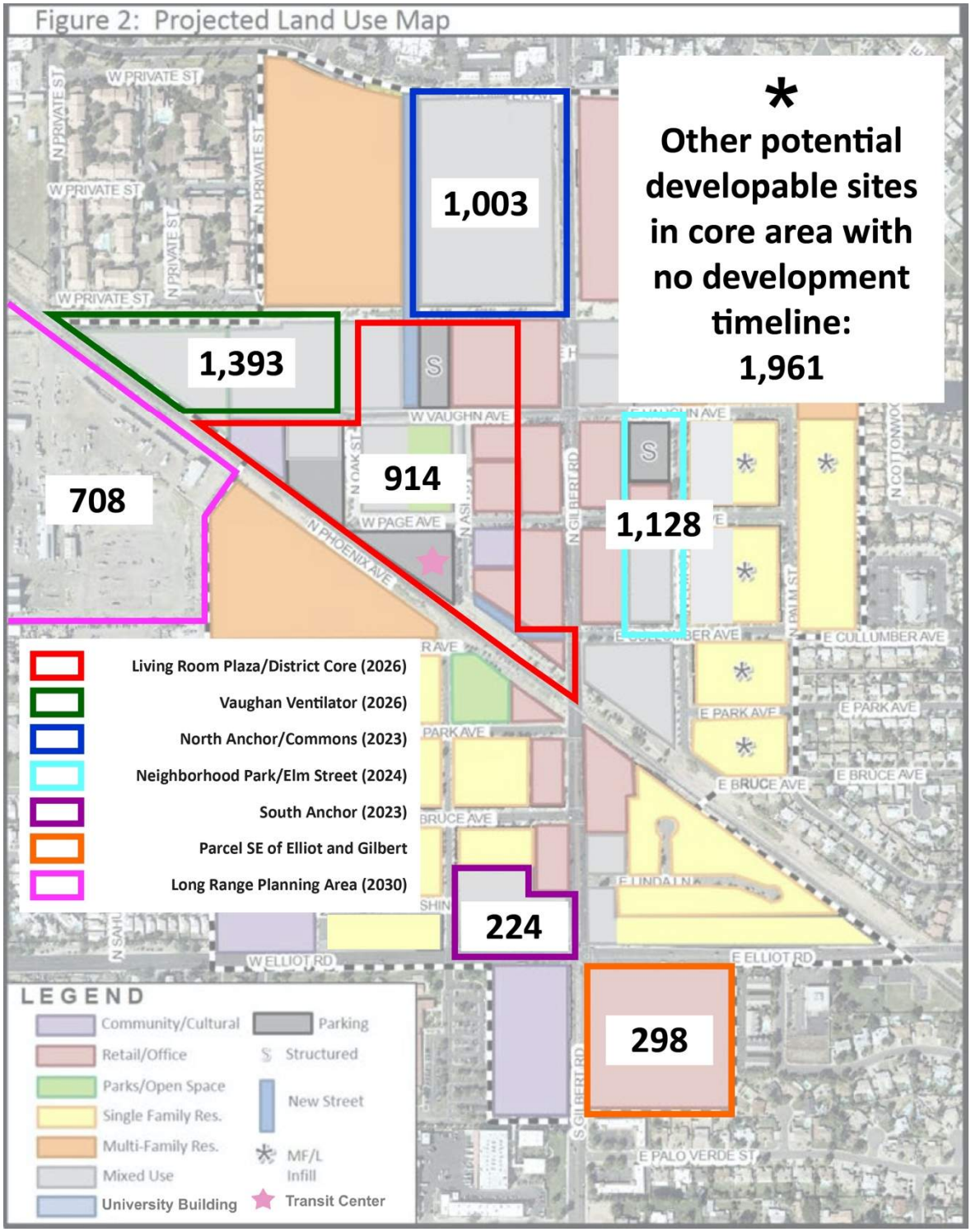
Under this scenario, shown in **Figure 22**,during the weekday and weekend peaks, Walker estimates that a maximum of 1,003 new, new spaces would be needed for the North Anchor/Commons Development, 1,393 spaces would be needed for the Vaughn Ventilator Development, 1,128 spaces would be needed for the Elm Street/Neighborhood Park Development, and 914 spaces would be needed for the District Core and Living Room Plaza.

Figure 21: Net Core Area New Parking Needed in Future by Key Redevelopment Site (Shared Parking)



Source: Walker Consultants

Figure 22: Net Core Area New Parking Needed in Future by Key Redevelopment Site (No Shared Parking)



Source: Walker Consultants

FUTURE PARKING NEEDS AFTER ACCOUNTING FOR KNOWN PRIVATE/SELF-CONTAINED PARKING

While the previous two figures depict net parking needs overall for each key redevelopment area, they do not differentiate between future public and future private parking, or between parking that will be self-contained and parking that will be shared amongst multiple developments or land uses.

As of this writing, Gilbert has indicated to Walker that the North Anchor/Commons redevelopment will be 100% self-parked. The developer will construct two parking structures, totaling to 1,111 spaces, to exclusively serve the site. Also, all residential parking across all key redevelopment sites must be self-parked, according to current Town policy. Finally, while the number of spaces has yet to be determined, the Town has indicated that parking supplies for the South Anchor and the Parcel Southeast of Elliot and Gilbert Road will be 100% privately self-parked.

Table 51 shows various core area parking needs statistics after accounting for and excluding all known self-contained/private parking and residential parking needs.

Note that any expected/future surplus of available parking for the North Anchor is assumed to be "off-limits" for purposes of serving other key redevelopment areas. Also note that all existing surface parking is assumed to be unavailable in the future upon completion/buildout of each key redevelopment area. Finally, the figures below do not account for parking needs for other potentially developable sites in the District with no known development timeline. All such parking is assumed to be self-contained and privately developed.

The totals below assume the same percent share distribution of existing carryover demand into the three key redevelopment areas discussed as shown previously in the last section and in Figures 20 and 21. In other words, the existing carryover demand is placed back approximately from where it was displaced.

Table 51: Net Core Area New Parking Needed Excluding Private and Self-Contained Parking

Core Area Parking Needs Statistic	Number of Spaces Needed	
	Optimized (Shared Parking)	No Shared Parking
Existing Carryover Core Area Peak Demand	1,870	1,870
Total Supply Needed To Accommodate Existing Carryover Core Area Demand	2,057	2,057
New Buildout Non-Residential Supply Needed (Elm Street/Neighborhood Park)	76	144
New Buildout Non-Residential Supply Needed (Vaughn Ventilator)	389	675
New Buildout Non-Residential Supply Needed (District Core/Living Room Plaza)	110	205
Total Supply Needed to Accommodate All Non-Residential Demand	2,631	3,080
Existing Public Supply	2,706	2,706
Future Remaining Supply After Losses	976	976
Total Net, New Non-Residential Parking Needed (Elm Street/Neighborhood Park)	**588**	**691**
Total Net, New Non-Residential Parking Needed (Vaughn Ventilator)	**614**	**853**
Total Net, New Non-Residential Parking Needed (District Core/Living Room Plaza)	**454**	**560**
Total Net, New Non-Residential Supply Needed (All Core Area Sites Excluding North Anchor)	**1,655**	**2,104**

Source: Walker Consultants

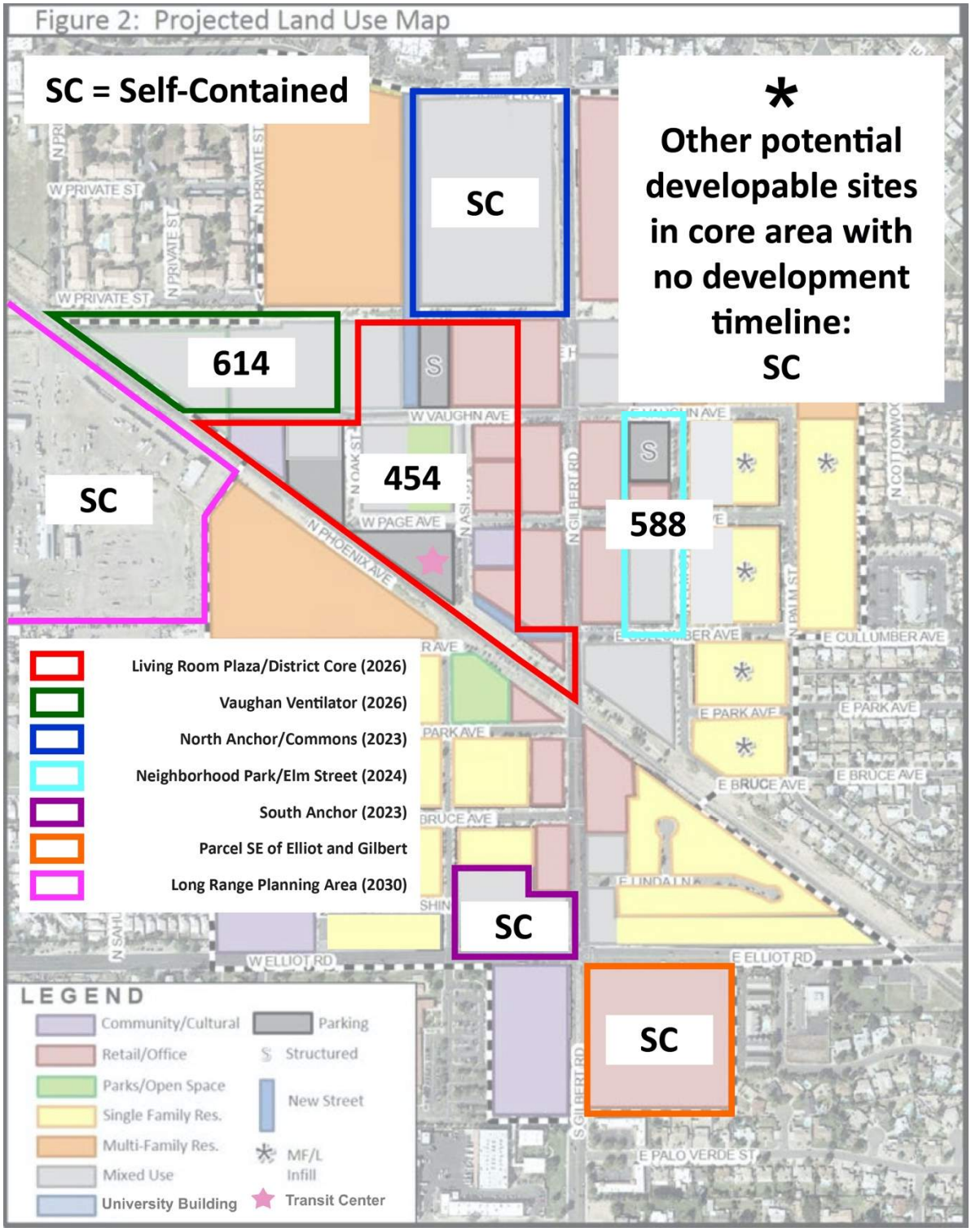
After accounting for known future self-contained/private parking and excluding residential parking needs, Walker projects that the District will need a total of 1,655 spaces under a shared parking scenario and 2,104 spaces under a no-shared-parking parking scenario with no shared parking.

By key redevelopment area, assuming no shared parking and with residential parking needs excluded, Walker projects that the Elm Street/Neighborhood Park would need 691 spaces, the Vaughn Ventilator would need 853 spaces, and the Living Room Plaza/District Core would need 560 spaces.

Assuming all optimizations are taken into consideration, Walker projects that the Elm Street/Neighborhood Park development would need 588 spaces, the Vaughn Ventilator would need 614 spaces, and the District Core/Living Room Plaza would need 454 spaces.

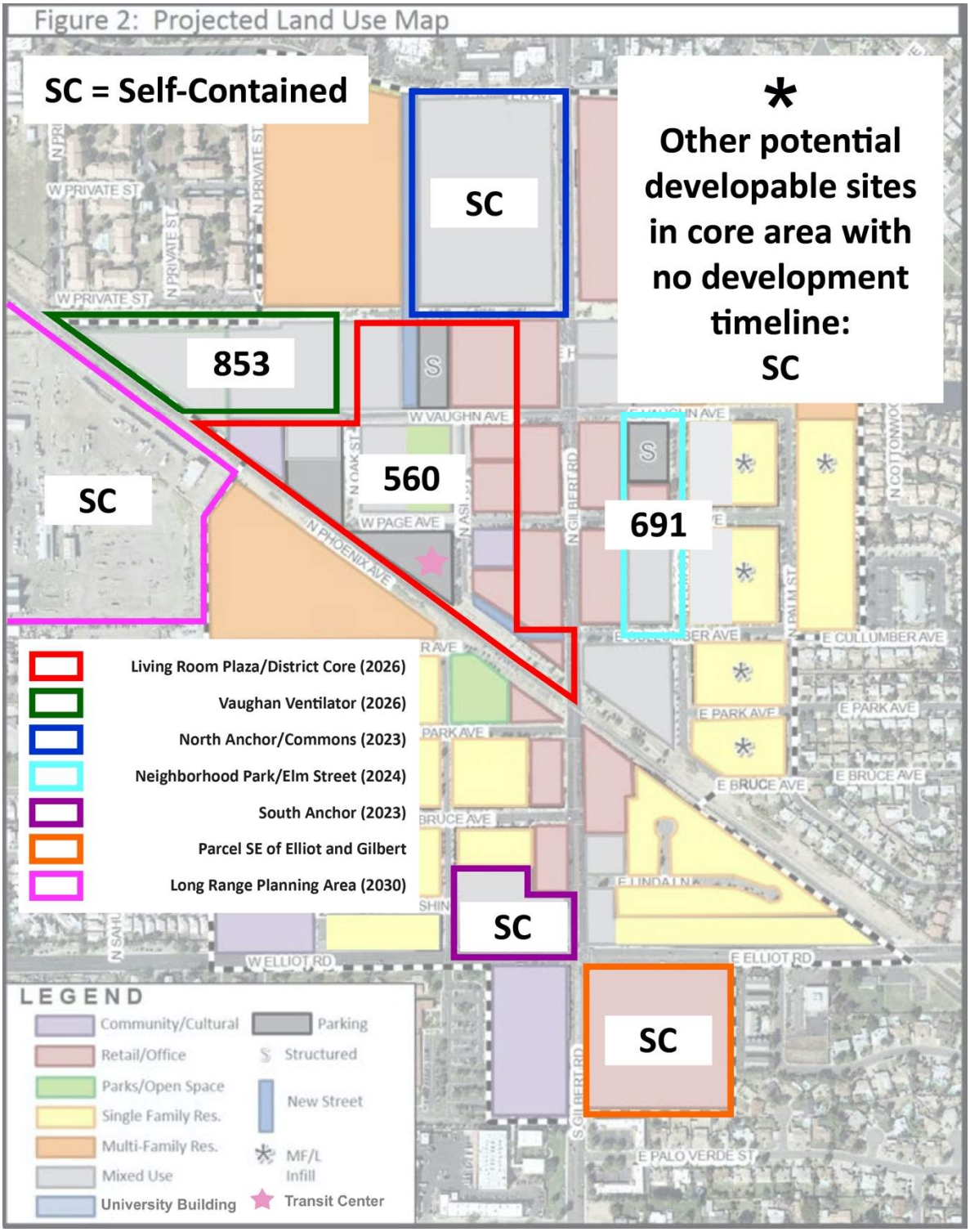
Figure 23 illustrates net core area new parking needed after excluding residential parking needs and known self-contained/private parking supplies in a shared parking environment, while **Figure 24** shows the new parking needed in an unshared parking environment.

Figure 23: Net Core Area New Parking Needed Excluding Private/Self-Contained Parking (Shared Parking)



Source: Walker Consultants

Figure 24: Net Core Area New Parking Needed Excluding Private/Self-Contained Parking (No Shared Parking)



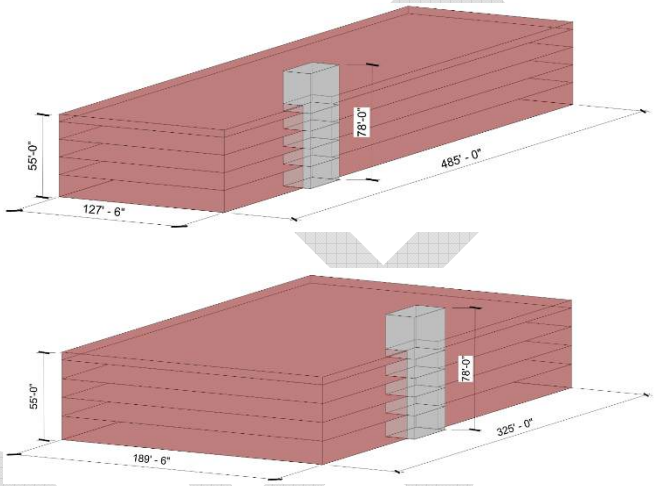
Source: Walker Consultants

04 Future Parking Structures

FUTURE PARKING STRUCTURES KEY TAKEAWAYS

OPTION 1: ONE LARGER CENTRALIZED GARAGE

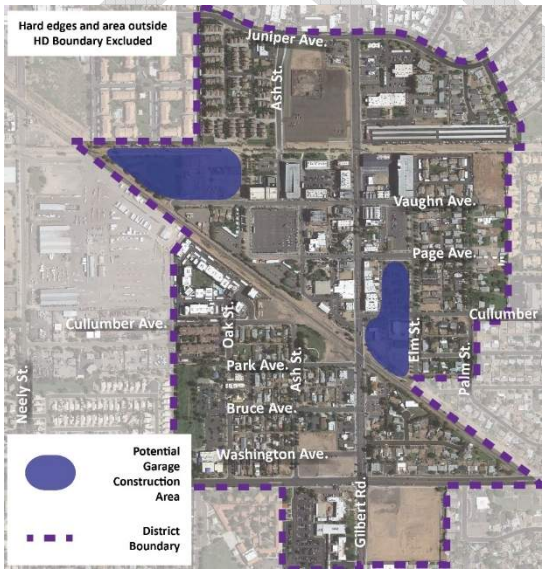
< Area for potential siting



Massing Alternative 1
900 spaces
2 bays wide

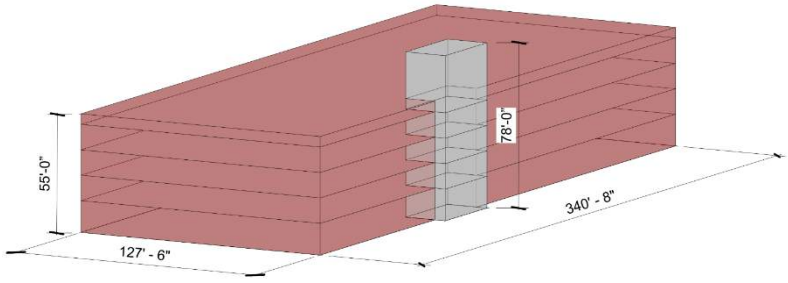
Massing Alternative 2
900 spaces
3 bays wide

OPTION 2: TWO SMALLER DECENTRALIZED GARAGE



< Areas for potential siting

Massing Concept
625 spaces **2** bays wide



SECTION 4 – FUTURE PARKING STRUCTURES

Future parking needs to support the non-residential or self-contained parking outlined in the Heritage District Redeveloped Plan is primarily associated with the following three major projects:

- Vaughn Ventilator project which generates a net new demand of 853 parking stalls
- Living Room Plaza project which generates a net new demand of 560 parking stalls
- Neighborhood Park and Elm Street project which generates a net new demand of 691 parking stalls

The cumulative parking demand from these projects totals 2,104 parking spaces. It's understood that the Town is interested in funding and constructing a portion of this demand and will rely on the developers of these projects to address the remaining parking in the form of surface, above-grade, below-grade, or a combination of these options.

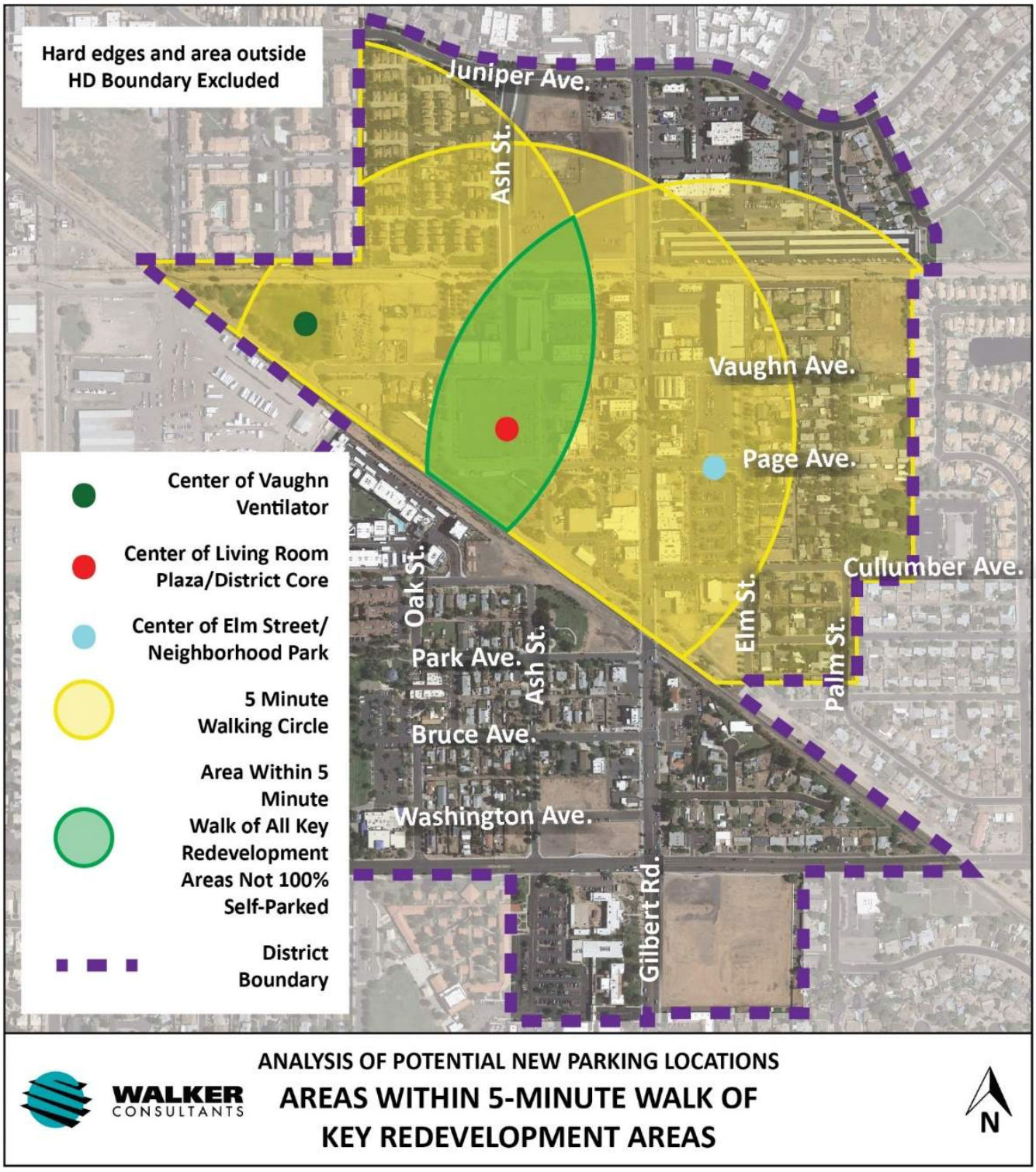
All the above-referenced projects are proposed to be located north of the rail line and within a five-minute walk east-west of Gilbert Road. The Living Room Plaza is located about halfway between the Vaughn Ventilator and the Neighborhood Park/ Elm Street project.

WALKING DISTANCE FROM KEY DEVELOPMENT SITES

Figure 25 on the following page illustrates 5-minute walking distance circles from the center of the three key redevelopment sites. This green area highlights the intercept area for all three developments. This centralized area highlights the area where a centralized parking facility would ideally be located. This centralized location is the redevelopment site for the Living Room Plaza site. This central location best represents parking option 1 discussed in this section.

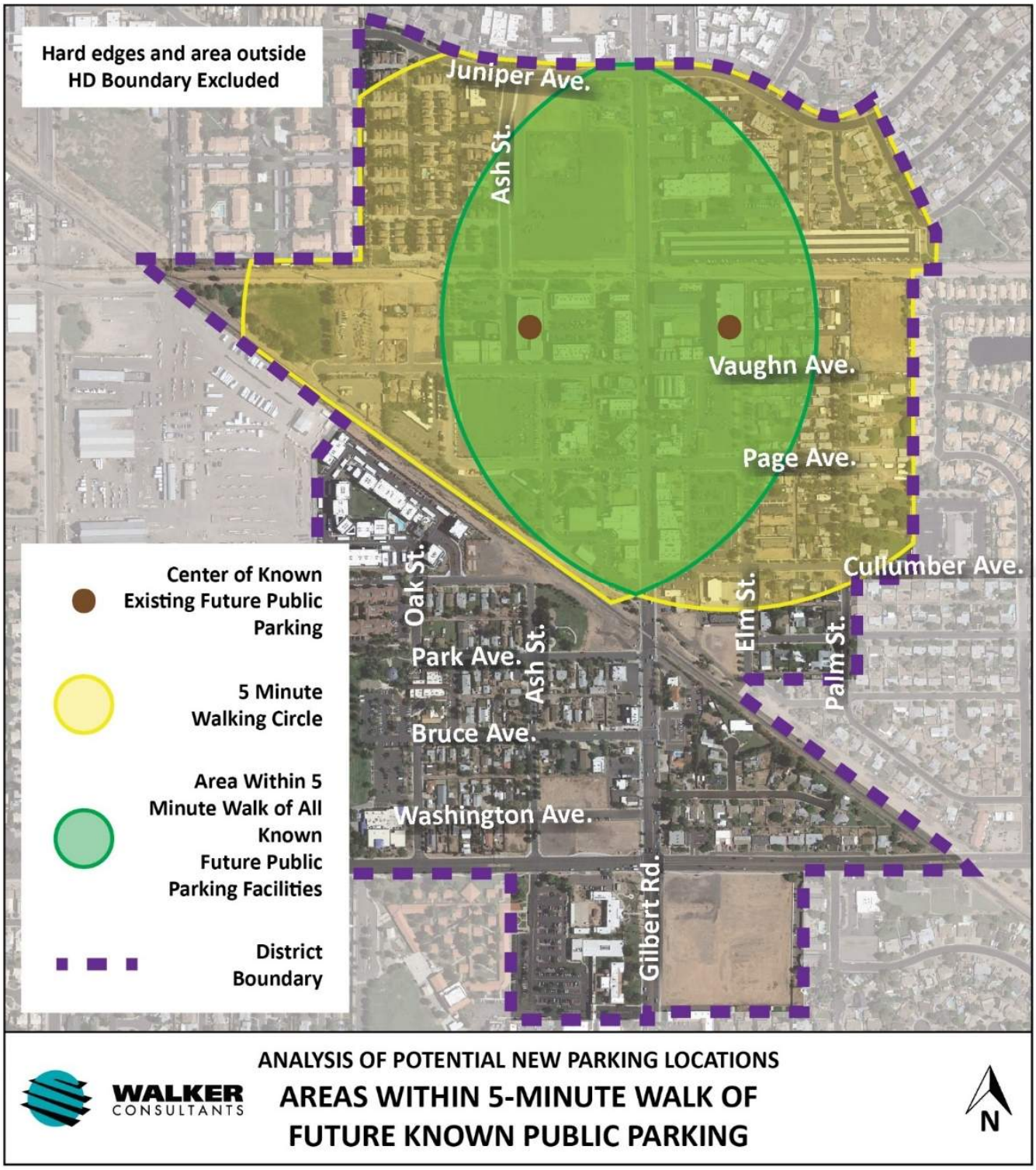
Figure 26 on page 94 illustrates the 5-minute walking distances from the two existing parking garages. This figure illustrates that the two current parking are both within a 5-minute walk to the three redevelopment projects; however, the existing parking assets cannot fully support the need for future parking. Therefore, additional parking is required. The yellow area outside the green are areas where overlap does not occur and future parking should support parking in these zones.

Figure 25: Area Within 5-Minute Walk of Key Redevelopment Areas



Source: Walker Consultants

Figure 26: Area Within 5-Minute Walk of Future Known Public Parking Areas (Existing Parking Structures)



Source: Walker Consultants

SIZING AND SITING OPTIONS FOR FUTURE PARKING STRUCTURE(S)

After consideration of existing and future parking conditions and needs, and after analysis of the Heritage District and its land uses and layout, Walker has evaluated various options for siting and sizing of future parking structures and has provided two different options for future structured parking. These options are:

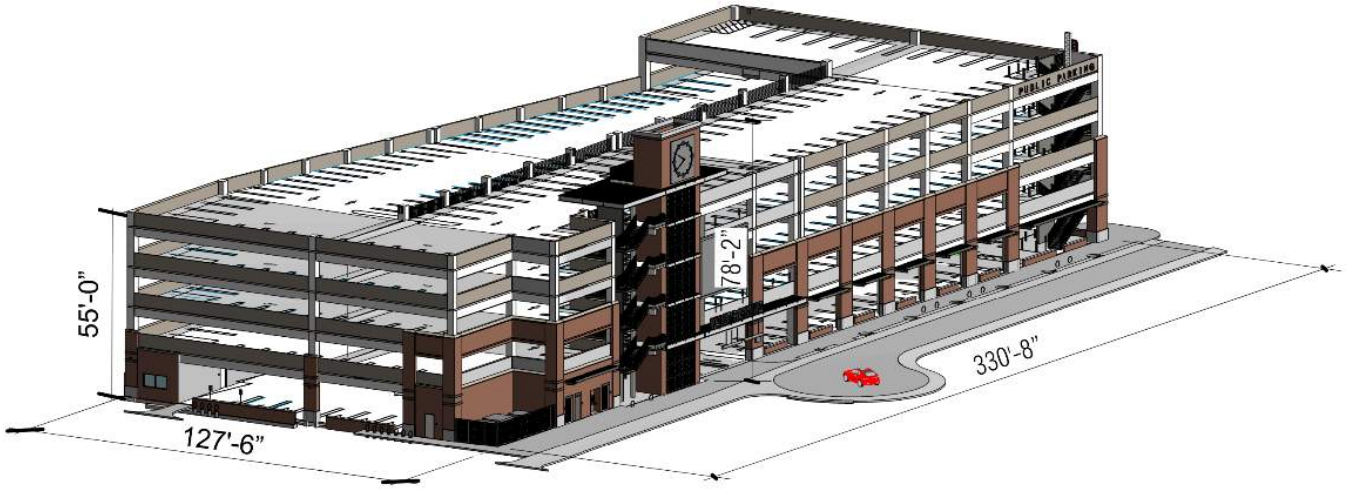
- Option 1: One Larger Centralized Garage
- Option 2: Two Smaller Decentralized Garages

These options are discussed and illustrated in further detail in the following sub-sections.

EXISTING PARKING STRUCTURE MASSING

The RD 120 rendering below (**Figure 27**) is used a point of reference for the massing options shown for both future parking structure design concepts for sizing and siting discussed in this section.

Figure 27: Rendering of Existing RD 120 Parking Structure



(600 stalls on the ground floor plus four supported levels, 2-bays wide)

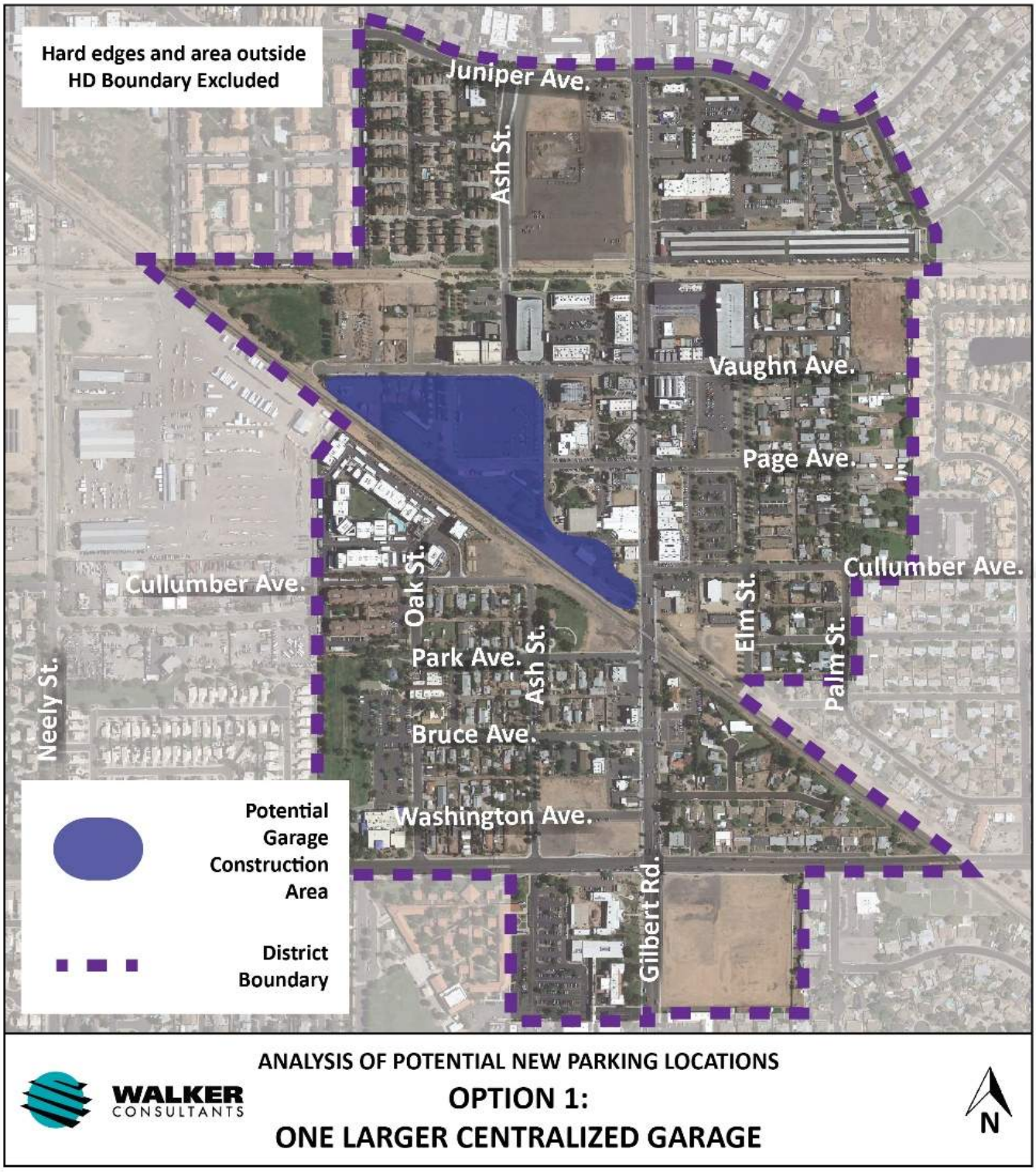
Source: Walker Consultants

PARKING STRUCTURE OPTION 1

For Option 1, the Town would construct one, 900-1,000 stall, above-grade parking structure, in the vicinity of the Living Room Plaza. The general proximity of this area in which this structure could be built is shown in the following **Figure 28**. Because the details of the redevelopment such as final land use mix, timing, and parcels are unknown at this time, a site-specific parking analysis is premature.

Detailed site analysis is understood to be completed separately from this Parking Master Plan. With this option, the Town is committing to providing parking at a centrally located facility. The three projects will share the load of providing around 1,000 parking stalls to address the remainder of the demand.

Figure 28: Future Parking Structure Option 1: One Larger Centralized Garage



Source: Walker Consultants

ADVANTAGES

- The Town constructs a centrally located parking facility which is within a five-minute walking distance (0.2 miles) from all three projects.
- The Town could have this project constructed before starting negotiations with the developers to show commitment to their "business-friendly" attitude. Example- A similar approach was adopted by the City of Chandler as part of their Oregon Street revitalization project in downtown Chandler.
- Compared to Option 2, the larger sized facility, proposed in this Option, benefits from economy of scale savings on construction cost.
- A 1,000 stall, above-grade parking structure, with similar construction and amenities as the existing RD 120 structure is anticipated to cost approximately $26,000 per stall or a total construction cost of $26M (excl. soft costs).
- The Town will have invested around $15.9M less in capital construction in its total parking assets as compared to Option 2, including fewer parking facilities to maintain in the long-term.
- The Living Room Plaza, which is slated to occupy the eastern half of the same parcel, can have an efficient below-grade parking structure within its footprint. As an alternative, the parcel can be split between the northern half and southern half, allowing an efficient parking structure in the southern half, off Page Avenue. This also allows for the relocation of vehicular traffic from Vaughn/ Gilbert Road intersection to Page/Gilbert Road intersection.

DISADVANTAGES

- The Town is providing less than 50% of the parking demand generated from the three projects. The developers of these projects will have to share the burden of making up most of the deficit.
- Unless the Town is considering constructing this structure is phases (future vertical or horizontal expansion), the Town is committing to constructing 100% of its share of parking in anticipation.

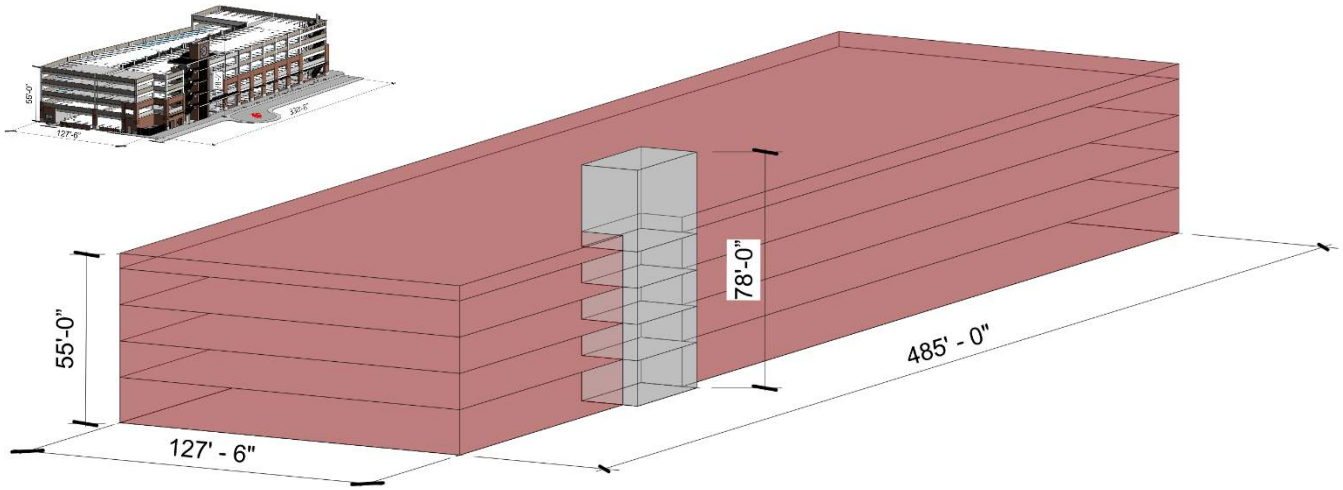
MASSING ALTERNATIVE #1

The massing of this structure is shown as outlined in **Figure 29** below. The massing concept was developed using general criteria for an efficient structure, maximum structure height (top of the bumper wall) at 55'.

The 900-stall structure shown in the image below is a 2-bay wide and utilizes a parking efficiency of 333 square feet per parking stall, which is the same as the RD 120 structure. With this parking efficiency, the structure will be approximately 127'-6" wide x 485'-0" long. The parking stalls will be 9'-0" x 18'-0", utilizes 90° parking, and 26'-0" wide two-way drive aisles.

The massing concept developed is shown against the Town's newest parking structure (RD 120) in the inset image. Similar to RD 120, the elevator tower is shown to be 78'-0" tall and is envisioned to include an architectural feature.

Figure 29: Massing Concept Alternative #1 for Parking Structure Option 1



(900 stalls on the ground floor plus four supported levels, 2-bays wide)

Source: Walker Consultants

MASSING ALTERNATIVE #2

The parking option illustrated in **Figure 30** is an alternate layout for a 900-stall structure using a 3-bay wide parking layout. Increasing the width to 189'-0" (from 127'-6") results in a length of 325'-0" which is significantly shorter than the previous option. This solution also uses similar parking geometrics as the option above.

Figure 30: Massing Concept Alternative #2 for Parking Structure Option 1

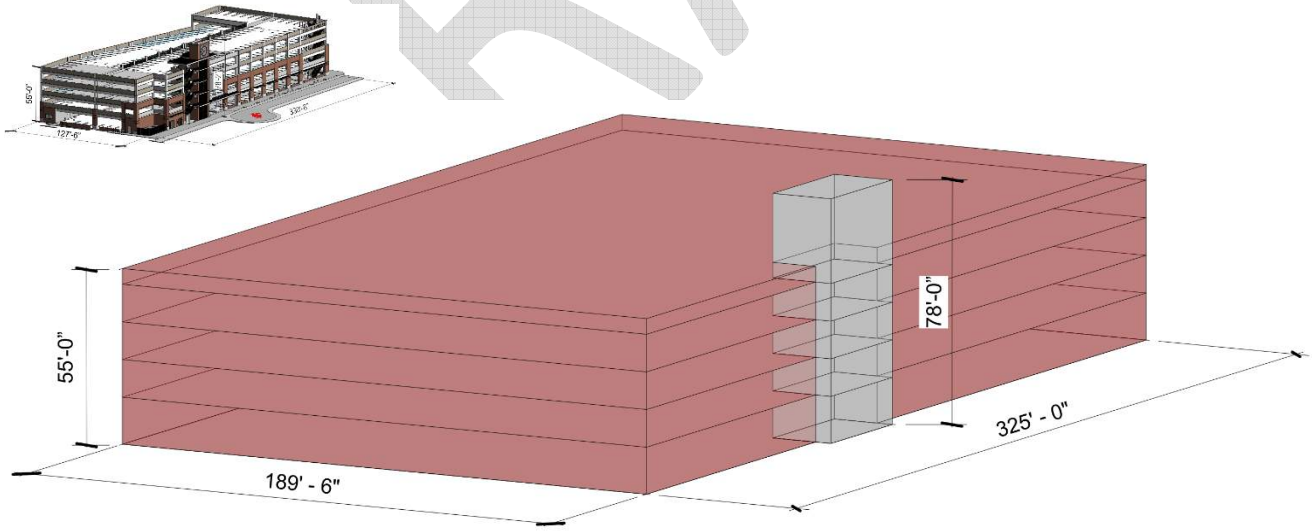


Image #3 (900 stalls on the ground floor plus four supported levels, 3-bays wide)

Source: Walker Consultants

PARKING STRUCTURE OPTION 2

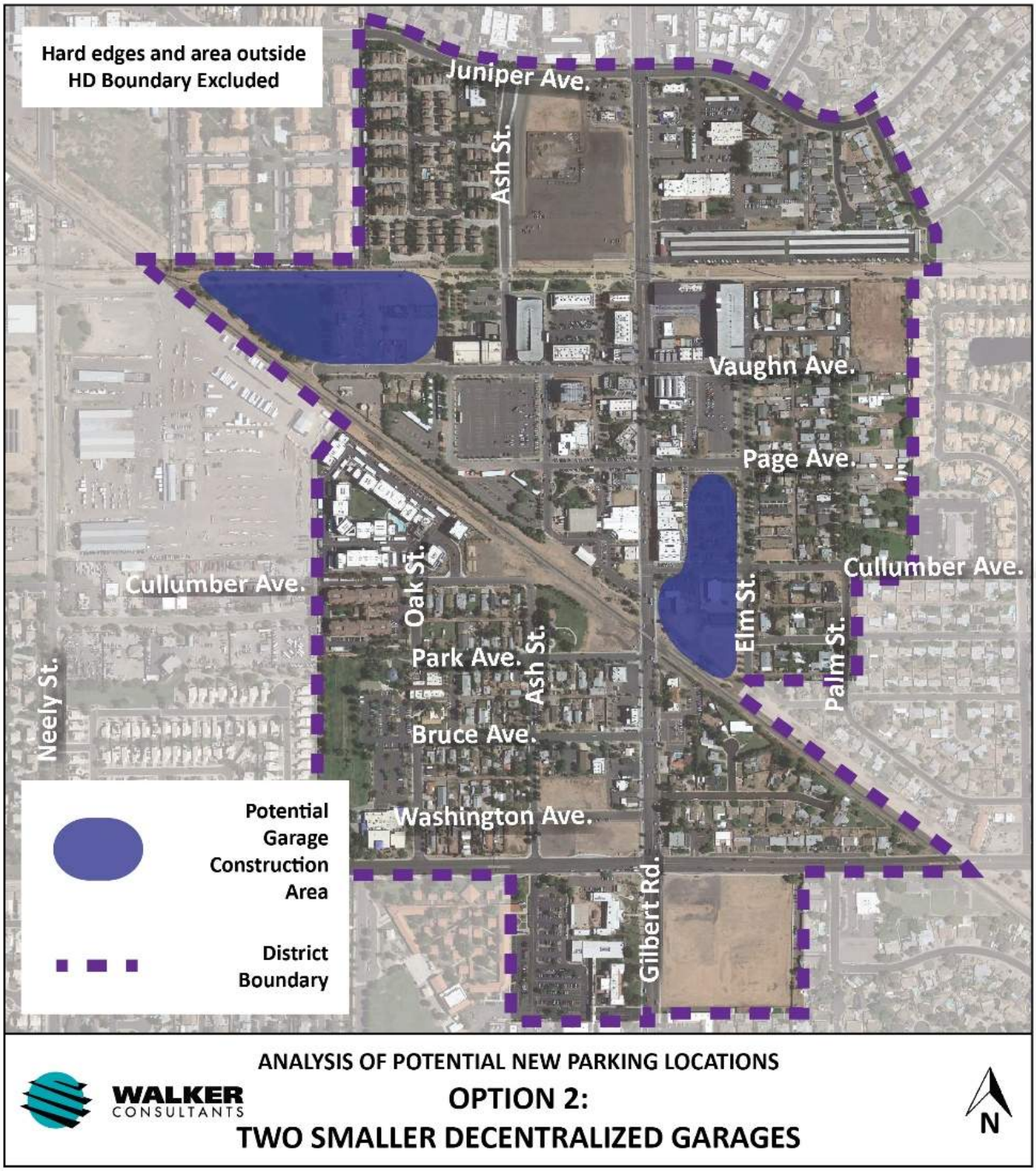
For Option 2, the Town would construct two parking structures, each providing approximately 625 parking stalls. One of the facilities will be located adjacent to the Vaughn Ventilator and the other one underneath or south of the Neighborhood Park, as shown in **Figure 31**.

The general proximity of the areas in which these structures could be built is shown in the following figure. Because the details of the redevelopment such as final land use mix, timing, and sites are unknown at this time, a site-specific parking analysis is premature. Detailed site analysis is understood to be completed separately from this Parking Master Plan. Unless project elements demand the use of significant real estate on the site, the Vaughn Ventilator parking structure should be targeted to be an above-grade structure.

The Neighborhood Park project is slated to occupy up to 2 acres, possibly taking-up the entire existing parking lot located west of Elm street between Page & Cullumber Avenue, an above-grade parking structure may have to located south of Cullumber. However, considering the dense nature of existing and future developments in this area, constructing a below-grade parking structure underneath the public park should be explored.

With this Option, of the 2,104 parking stalls needed, the Town is committing to providing approximately 1,250 stalls (60% of demand), split between two structures. The three projects will share the load of providing parking for the remainder of the demand.

Figure 31: Future Parking Structure Option #2: Two Smaller Decentralized Garages



Source: Walker Consultants

ADVANTAGES

- Either structure will be within a short walking distance from the Living Room Plaza. Depending on the timing of the other two projects, the Town has the flexibility of prioritizing constructing either of the structures.
- The Town is not committing to constructing its entire share of parking in one location. This allows phased construction of parking depending on the final timing of the projects.
- Willingness to provide the majority of the parking supply reinforces Gilbert's "business-friendly" attitude.
- The Vaughn ventilator parking structure will be located at least 2 blocks west of Gilbert Road facilitating adequate queueing distance along Vaughn to minimize backups at the intersection of Vaughn and Gilbert Road.
- By constructing the parking structure underneath the public park, the Town will be able to make efficient use of prime real estate. This leaves adequate real estate for the financially attractive components of the project.

DISADVANTAGES

- Below-grade parking is significantly more expensive than above-grade parking. Based on historical data, our opinion of the probable construction cost for a 3-level below-grade parking structure, underneath the park, is anticipated to be approximate $40,000/stall, not accounting for the cost of the park itself and associated additional structural and waterproofing requirements. For the 625-space underground garage at Neighborhood Park, the construction cost could be in the range of $25M.
- Since two, smaller parking structures are envisioned, neither of the parking projects will benefit from the economy of scale savings typically realized on parking structures larger than 900 stalls.
- An above-grade 625+/- stall parking structure, similar to the existing RD 120 structure, is anticipated to have a construction cost of $27,000/stall (project cost of $15.9M), including usual and customary amenities. As compared, a similarly constructed bigger structure (1,000 stalls) is anticipated to have a construction cost of $26,000/stall.
- After both the parking structures are constructed, the Town will have invested around $13.9M more in parking assets, as compared to Option 1, excluding additional long-term maintenance.
- Neither of the parking structures will be directly visible from Gilbert Road. Additional wayfinding signage and dynamic parking availability displays along Gilbert Road will be required.

MASSING

The massing of this structure for Option 2 is illustrated in **Figure 32**. The massing concept was developed using general criteria for an efficient structure, maximum structure height (top of the bumper wall) at 55'.

The massing concept developed is shown against the Town's newest parking structure (RD 120) in the inset image. The 625-stall structure shown below is a 2-bay structure and utilizes a parking efficiency of 333 square-feet per parking stall, same as the RD 120 structure. With this parking efficiency, the structure will be approximately 127'-6" wide x 340'-8" long. The parking geometrics for this structure is 9'-0" x 18'-0", 90° parking stalls, and 26'-0" wide two-way drive aisles.

Figure 32: Massing Concept for Parking Structure Option 2

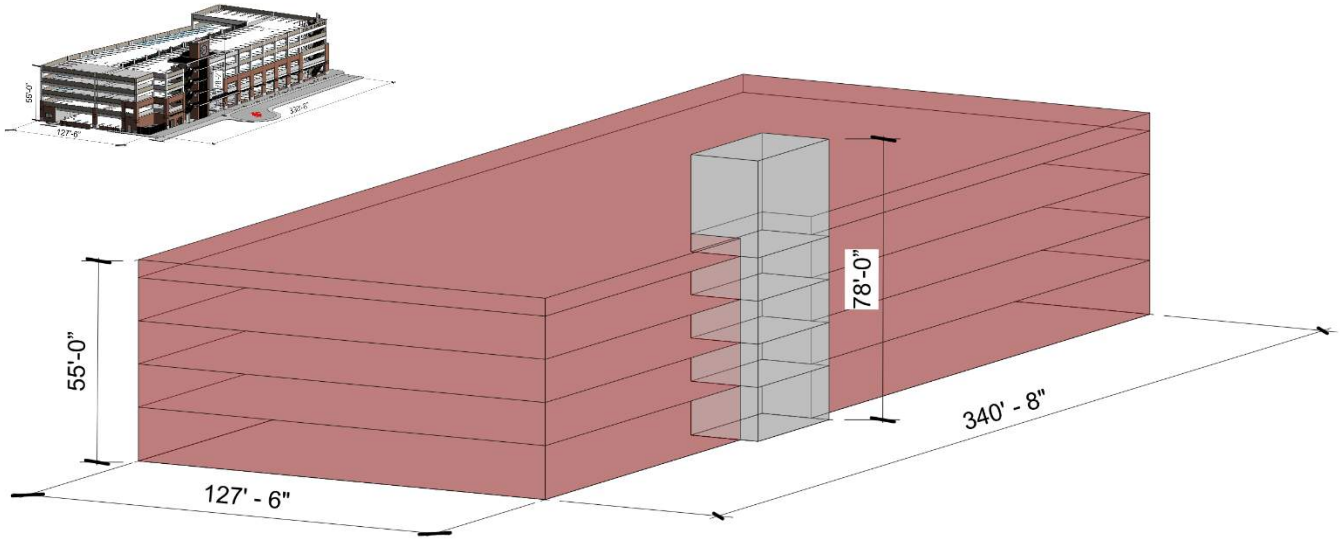


Image #4 (625 stalls on the ground floor plus four supported levels, 2-bays wide)

Source: Walker Consultants

05 Community Engagement

WALKER CONSULTANTS

Heritage District Parking Master Plan

COMMUNITY ENGAGEMENT KEY TAKEAWAYS

Steering Committee Representatives

- Residential and Homeowner Associations
- Business Owners
- Developers
- Neighboring Business District Leadership
- Interim Mayor
- Town Staff

1,099

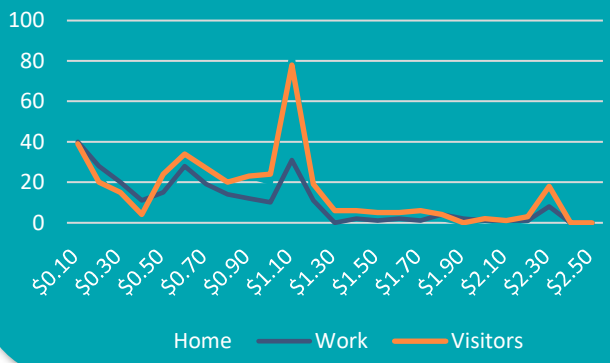
Online Questionnaire Responses

How long does it take you to find a parking space?

	Employees	Visitors
0 – 3 minutes	63%	30%
3 – 5 minutes	22%	36%
5 – 7 minutes	9%	20%
7 – 10 minutes	2%	11%
> 10 minutes	4%	3%

How much are parking patrons willing to pay for a closer space?

(Not inclusive of zero value responses)



Steering Committee

How would you prioritize the various uses that demand right-of-way space?

SECTION 5 – COMMUNITY ENGAGEMENT

A crucial element in the development of a successful parking plan is clear and concise communication with various user groups, along with proactive and genuine engagement of the community. For the Town of Gilbert Parking Master Plan, given the additional challenges presented by the onset of the novel coronavirus and its ongoing impacts limiting the ability to engage with the community in person, Walker developed a strategic engagement plan that focused on virtual and online platforms to gather targeted feedback that would provide valuable and actionable insight into the real and perceived parking and transportation challenges that Heritage District residents, customers, employees, and visitors face when accessing and moving throughout the Heritage District.

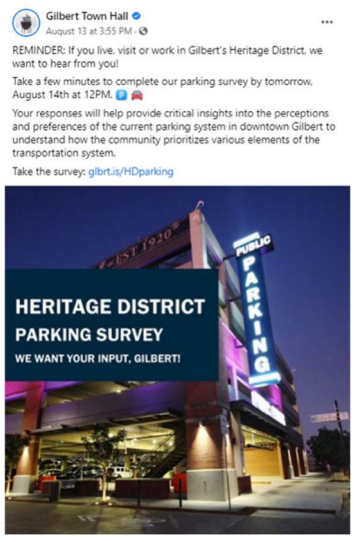
This section outlines the Community Engagement activities that were conducted as part of the Parking Master Plan.

STAKEHOLDER ENGAGEMENT PLAN

In March 2020 a Stakeholder Engagement Strategy was developed to support the Town of Gilbert's Parking Master Plan. Shortly thereafter restrictions on travel and gatherings of people led the project team to pause engagement efforts through early stages of the study. As the project progressed and it became clear that in-person gatherings were not a viable option for the foreseeable future, Walker worked with Town staff to identify appropriate methods of engaging the community virtually. These efforts focused on two central groups; the general public and identified stakeholders to act as representatives of the various user groups of the Heritage District.

COLLECTION OF PERSONAL EXPERIENCE AND PREFERENCES

Walker worked with Town staff and MakPro, a local engagement specialist, in developing an online questionnaire to capture data related to parking and transportation experiences and preferences for the Town of Gilbert Heritage District Parking Master Plan. This section describes the process for collecting user behavior and preferences data.



Online questionnaires can be incredibly valuable tools in collecting respondent perceptions and parking behaviors. Sample sizes typically exceed alternative methods of behavioral or opinion collection, as respondents can participate at their convenience and population pools are not limited to a specific time, day, or location. Virtual formats also tend to provide a more accurate representation of the respondents' perceptions of the overall parking and transportation program, as they can contemplate responses more thoroughly than they may using alternative methods such as intercept surveys or focus groups that provide limited timing or interrupt their scheduled plans.

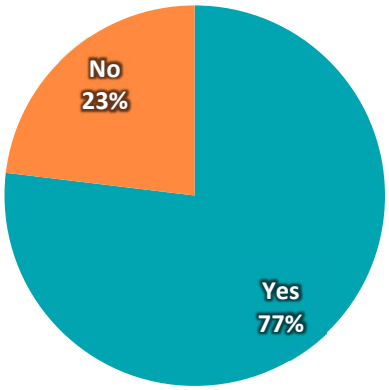
For conditions such as those presented as a result of the pandemic, virtual formats also provide a safe alternative, expanding accessibility to those who may otherwise be unable to participate in alternate formats due to increased risk of exposure. In the Town of Gilbert, the online questionnaire was promoted through

multiple avenues including the Town's website and social media outlets. Steering committee members, discussed further below, also promoted the questionnaire among their customers, employees, and neighbors. The following summarizes key themes identified in the questionnaire, with a full listing of responses received provided in Appendix A.

SUMMARY OF ONLINE QUESTIONNAIRE RESULTS

The online questionnaire generated 1,099 responses. Of these, approximately 8% of respondents reside within the Heritage District, with the majority (approximately 90%) residing within the Town of Gilbert. For those residing within the Town, approximately 10% of respondents report their residence does not provide on-site parking.

Figure 33: Percentage Distribution Showing Whether On-Site Parking is Meeting Residents' Needs



Source: Walker Consultants

For those residences that do provide on-site parking, approximately 23% report that the parking supply provided does not adequately meet their needs, as summarized in **Figure 33**. Once parked within the Heritage District, questionnaire respondents are almost equal in moving around by driving and re-parking their vehicle to reach their secondary destination(s) within the District.

Employees within the District responding to the questionnaire predominantly represented the food and beverage (46% of respondents that work within the District). Employees responding in general access the District by personal vehicle, typically finding a parking space within 5 minutes or less. Approximately 19%, or 1 in 5 employees look for parking on-street first, while 40% of respondents indicated that the on-street parking does not adequately meet the needs of the businesses' customers.

Visitors responding to the questionnaire indicate that they visit the Heritage District either monthly or weekly, and predominantly to visit the area's restaurants. Most respondents that visit the Heritage District arrive by personal vehicle. Similar to employees, only 19% of visitors report looking for parking on-street first. Visitors reported being more open to parking slightly farther if availability information was available, rather than spending time searching for available space than other user groups.

Although individuals employed in the Heritage District responding to the survey indicated they would rather circle to search for available parking than use an app to locate immediately available parking up to two blocks away, they also indicated would only pay an average of $0.30 per hour for convenient parking close to their destination. Residents, however, were reported a slightly higher average cost to parking close to their home at $0.41 per hour. Indicating individuals generally prioritize cost over convenience in parking for work, whereas convenience is prioritized over cost when parking at home.

Survey respondents reported the highest average rate of $0.51 per hour for a parking space closer to their destination when visiting the Heritage District, as opposed to working or residing there. In all scenarios, respondents predominantly responded there was not a rate at which they would be open to paying for a space closer to their destination. **Figure 34** summarizes the number of respondents at each price point who indicated

they would be willing to pay up to that rates for a closer space, not inclusive of the $0.00 responses. For example, 83 respondents stated they would pay up to $1.10 per hour for a space convenient to their home, whereas only 31 respondents would pay the same rate for a space convenient to their place of employment.

Figure 34: Hourly Rates Respondents Would Pay for Closer Parking to Their Destinations

*Not inclusive of $0.00 responses

Source: Walker Consultant

Respondents from all user groups report moving throughout the Heritage District is generally easy or very easy whether by vehicle, bicycle, on foot, or other means; however approximately 20% of respondents report some level of difficulty in moving throughout the District by vehicle.

STEERING COMMITTEE CONVERSATION SUMMARY

In addition to the online questionnaire, two virtual meetings were held with the project steering committee. Steering committee members were identified by Town staff as representatives of the various user groups of the Heritage District. Members included individuals from groups such as residential and homeowner associations, business owners, developers, neighboring business district leadership, and the Interim Mayor, among others. The following outlines key themes and comments that were heard in conversations and responses to an interactive polling platform used during discussing potential strategies to stimulate discussions with members of the steering committee that participated in outreach efforts for Parking Master Plan. **Figure 35** shows the results of a curb lane prioritization activity completed by the committee.

- Need a plan that is implementable and won't just sit on a shelf
- The plan should consider the unique character of Gilbert and the Heritage District
- Parking management should aim to prioritize the efficient use of existing parking facilities and increase assess to area businesses

- Concerned about any level of parking enforcement or ambassador and the impact they may have on customer experiences in the District
- Congestion and pedestrian conflicts resulting from unmanaged curb lanes and a lack of rideshare designated passenger loading areas are creating safety concerns on Gilbert Road
- Lighting of parking and pedestrian areas has been an ongoing concern and should be considered where any management interface (signage, kiosks, etc.) is deployed
- Funding for managed parking should be provided by system users, the Town, and/or new developments
- A curb lane management program should prioritize passenger loading and unloading and micro mobility over parking
- Should provide motorcycle/moped parking in premium locations
- Need to accommodate large personal vehicles/trucks so they don't encroach on other spaces

Figure 35: How Respondents Would Prioritize the Various Uses that Demand Right-of-Way Space

Source: Walker Consultants, Mentimeter

06 Parking Management Strategies

PARKING MANAGEMENT KEY TAKEAWAYS

SUMMARY OF RECOMMENDATIONS

Parking Enforcement

- A managed parking system is only as good as it is enforced
- Parking ambassador model focuses on customer service and education
- 2.0 FTEs recommended for the Heritage District Parking Ambassador program
- Parking ambassadors/enforcement officers can be managed under several structures
    - Town department, new or part of existing
    - Parking enterprise
    - Parking authority
    - Contracted service

Security

- Good design principles overlap with the operational side of parking management in promoting safer environment for parking patrons and staff.
- The most effective approach to security for parking facilities is CPTED (crime prevention through environmental design) as encouraged by the law enforcement and security professional communities.
- The presence of parking ambassadors and vibrant, activated areas near parking centers reduces the appeal for those who desire to commit crimes in those facilities

Parking Requirements

- Shared parking is effective means to right size parking supplies and support economic vitality and sustainability initiatives.
- Shared parking studies and agreements should not rely on public facilities without investing in the system to offset the demand they generate, for instance through a fee-in-lieu.
- Removing parking minimum requirements devalues parking, often increasing the parking requirements imposed on developers by financers and requiring a strong network of infrastructure to be in place to support alternative modes of transportation

Time Limits and Paid Parking

- Paid parking is NOT recommended for the Town of Gilbert as a parking demand management strategy at this time.
- 3-hour on-street time limits are recommended for the Heritage District with no time limits imposed in the off-street facilities to accommodate employee and longer-term visitor parking

Paid Parking Technology

- If the Town identifies paid parking as a source of funding for management of the parking system, multi-space kiosks for on-street and off-street spaces and gated access equipment for off-street spaces, both with a mobile, contactless payment option.

Neighborhood Parking Permits

- Neighborhood parking permits should be considered for residential areas adjacent to the Heritage District once development consistently pushing parking demands into those areas.
- If the Town identifies paid parking as a source of funding for management of the parking system, an employee parking permit program should provide discounted parking in off-street facilities for those who can demonstrated employment with the District.

SECTION 6 – PARKING MANAGEMENT STRATEGIES

Strategic parking management aims to improve equitable access to parking and transportation resources, not to make a "money grab" through a new "tax" or to "trap" more illegal parkers. When parking systems are effectively managed, appropriate resource availability for all users is improved. Different strategies will be appropriate for different populations and at different times throughout the life of the parking system. Improving the parking experience in the Heritage District will begin with managing the parking system and its related transportation and mobility components, initially through the introduction of time limited parking and programming that will help to alleviate areas experiencing localized high demands.

A managed parking system also supports the economic vitality of and access to Heritage District businesses through increased turnover of on-street parking supplies. Increased turnover of this close-in, convenient parking supply provides parking to a greater quantity of vehicles, lowering occupancies by directing various parking system users to the appropriate parking location for their needs. By making parking easier to find, through the strategies discussed in the next three sections, customers and employees alike have a better parking experience with increased availability, more reliability, and providing a consistent experience that reduces parker frustrations.

A review of the Town's parking related ordinances shows the Town in a relatively positive position with much of the language following best practices in providing flexibility to adapt to future conditions. Two recommendations, discussed further in their respective sections below, include updated Section 62-76 to provide for permitted parking in publicly managed parking areas, rather than only the currently provided for off-street facilities. This will allow the Town to manage on-street parking through Neighborhood Parking Permits in the future should the strategy prove necessary. The other recommendation is to remove "on certain streets" and "in each block" from Section 62-68 to provide greater flexibility in implementation of time limited parking in off-street facilities as well. This would also position the Town to provide an initial free period in paid facilities, should the Town move to paid parking in the future.

A managed parking system does generate cost in the personnel and resources to efficiently administer the system. While one option for funding parking management is through implementation of user fees and paid parking, there are alternative sources that should be considered. Such alternative funding sources include parking tax districts, a payment in lieu of required parking, or revenue bonds, among other sources discussed in this section. It is important to note that no one funding mechanism is the right choice for all communities and what may be the best solution for the Heritage District may comprise more than one funding source or more than one management strategy.

Strategic parking management aims to improve equitable access to parking and transportation resources

PARKING ORGANIZATION STRUCTURE AND MANAGEMENT

Whether utilizing a parking ambassador or parking enforcement officer model, the duties of enforcement will be managed by some form of agency. There are three primary models for operating parking programs, including:

- **Self-Operation** is when the parking facility owner, in this instance the Town, operates the parking program itself. For example, the Town may hire personnel to the operate the parking system internally by creating a new Parking Department or adding personnel to an existing department.

- **Outsourced by a Management Agreement** is when the parking facility owner, the Town, hires a parking management firm to handle the daily operations and maintenance through an contract. The parking management firm is paid either a fixed fee or a percentage of the revenues and is reimbursed by the owner/Town for all expenses incurred by the operation.

- **Outsourced by a Concession Agreement** is when the parking facility owner, the Town, hires a parking management firm to assume full responsibility for the operation of the parking system, including expenses, and the parking management firm pays the owner either a fixed amount, a percentage of the revenues, or a combination of both.

In the past, many communities that maintained their parking system in house through self-operation have utilized a very horizontal structure with various components of the parking system's operation handled by different departments. For instance, enforcement was provided by the police department while maintenance was the responsibility of Public Works and revenue collection under the Finance Department, and so on. This type of divided responsibility structure, however, does not lend itself well to communication and strategic planning. The disjointed nature of operations and conflicting goals on the various departments can even lead to parking patron frustration.

Parking programs are turning toward more efficiently and effectively organized parking structures. Each organizational structure has its own set of potential advantages and disadvantages that will vary based on the system's size, the program's components, the community's goals, and the political environment. These common structures are:

- Departmental Model
- Parking Authority Model
- Parking District Model
- Parking Enterprise Model

DEPARTMENTAL MODEL WITH HIERARCHICAL STRUCTURE

The Departmental Model is a typical Town department. It is led a department head with various support staff. The model, however, combines all aspects of the parking services program into one dedicated department, rather than dividing responsibilities up amongst two or more departments. While this model does maintain the highest level on control to the Town, it can be less cost effective and efficient than other options.

This model is generally responsible for:

- Off-street public parking facilities
- On-street parking resources
- Program budget and financial performance
- Strategic planning of the parking system
- Parking enforcement

And may also be responsible for:

- Transportation demand management
- Program marketing and communications
- Capital improvement and technology planning and investment
- Neighborhood parking permit programs

PARKING AUTHORITY MODEL

The Parking Authority Model typically has a board of directors to oversee the strategic guidance of the program, operating with a small staff that relies on a parking management firm for the daily operations and maintenance of the program. A significant advantage of the parking authority model is that the board is typically comprised of community stakeholders. Their participation on the board can lead to a deeper understanding of the conflicting needs and interests of stakeholders on the program and support a more equitable program. However, because the board is not generally comprised of experience parking and transportation professionals, strategic guidance can be stalled due to the competing interests. A considerable advantage of a parking authority model, however, is that it has bonding capability, and the board will typically include the mayor or town manager who can provide valuable early insights on the authority's planning and projects.

The parking authority will typically have responsibility over all parking within the district. In communities where the authority does not manage private facilities, they maintain significant influence such as to heavily influence private parking facilities rates and operational practices. For example, while the parking authority in Toledo, Ohio does not manage several private operations within the same district, due to upgrades made to operations, generally all other private operators in the area also now have uniformed attendants, facilities that comply with accredited parking organization standards, and updated technologies, as the market came to expect these components from all parking operations.

PARKING DISTRICT MODEL

The Parking District Model is similar to other models in that it aims to bring all operations related to parking services under one, centralized management structure. It is generally differentiated by an assessment applied to properties within the established boundaries of the district, typically in the form of a mill levy on an established unit of measure for the land use category for each property. Additionally, revenues collected within the district, for instance for enforcement citations or paid parking fees, must be reinvested within the district boundaries.

PARKING ENTERPRISE MODEL

In the Parking Enterprise Model, the parking services organization in managed much like a business. It's budget, revenues, and expenses are maintained separate from other Town finances. Unlike their private sector counterparts, a parking enterprise generally provides more accountability and transparency of their operations. However, because of this model is designed to generate revenue for the community, the goals of a parking enterprise may not align well with other departments. For instance, increasing usage alternative modes of transportation would not generally be in the strategic plan for an enterprise that relies on personal vehicle parking revenues.

PARKING ENFORCEMENT

Any strategy to manage parking and transportation will only be as effective as it is enforced, however, enforcement must be balanced with customer service to support a parking experience that contributes to creating a positive overall experience within the Heritage District. A key recommendation for the Town of Gilbert is the development of a parking enforcement program consisting of parking and mobility ambassadors. The parking ambassador model focuses less on punitive and reactive parking enforcement and promotes education and providing good customer service and a welcoming, approachable resource for the community. This section provides a summary of items to consider in developing a parking enforcement program.

In April 2019 the US Sixth Circuit Court of Appeals found the practice of physically chalking tires to be unconstitutional, likening the practice of monitoring the physical location of a vehicle in this manner to the unwarranted application of a GPS tracker to a vehicle with the intent to collect information regarding its movements. While the industry anticipates the decision to be overturned based on community benefit and the decision's false understanding that parking enforcement was intended to generate revenue as opposed to support equitable access to a public resource, it has left many enforcement programs scrambling to adjust their enforcement practices and equipment to avoid such limitations within their own jurisdictions. Already growing in usage prior to the case summarized above, the use of license plate recognition provides a digital record of each captured vehicle's location and time of observation, among other applications discussed more below.

ENFORCEMENT MODEL

> The vision of the parking ambassador program is to help promote a progressive, dynamic, customer service focused downtown experience.

Parking enforcement is generally seen as a punitive organization, giving many in the community a negative perception of parking enforcement. To avoid this perception, Walker recommends the "parking ambassador approach" model to parking enforcement. This type of customer service focused model has been successful in Phoenix and Flagstaff, as well as at ASU and throughout the country.

With this model, the mission of the parking ambassador is to provide hospitality tourism and public services to residents, employees, and visitors. Parking ambassadors are sometimes required to complete multi-faceted training in customer service and hospitality, emergency response and first aid, as well as development of background knowledge in public transportation and mobility services available in the area and Town services. Parking ambassadors should work directly with transportation and parking managers within the Town, local businesses, and professional agencies.

The primary goals of a parking ambassador program are to promote the area, be a source of information for visitors, and support parking system users in choosing the appropriate options for their needs and help make the downtown area a better place to live, visit, shop and conduct business. Parking ambassadors should initiate personal contacts with the parking public (known as “touches”), issue more warnings and slightly fewer citations, and interact with visitors and citizens in a positive manner.

The vision of the program is to help promote a progressive, dynamic, customer service focused downtown experience. Parking ambassadors may accomplish these goals while providing parking management by

monitoring public safety, extending a helping hand in emergency situations, and calling on area merchants on a regular basis. Beyond enforcing parking regulations, the following are examples of appropriate behaviors of parking ambassadors:

- To greet visitors and offer customer service
- To be a friendly face in response to what is many people's initial or final interaction with the Town
- To give accurate directions to visitors
- To provide information and explain local traffic and parking regulations to seek voluntary compliance
- To distribute Town brochures and maps

CASE STUDY
MANAGING PARKING ENFORCEMENT

Management of the parking program and hiring of parking ambassadors or enforcement staff can take several forms. In **Grand Junction, Colorado** parking enforcement is a division of the police department. While enforcement officers are not police officers, they are employees of the department. In Downtown **Longmont, Colorado** and Downtown **Tempe, Arizona**, parking ambassadors are employees of each city's downtown authority. In Cedar Rapids, Iowa, parking ambassadors are employees of the city's contracted parking operator.

Town Code currently provides for enforcement by Code Compliance Managers and Officers and Police Officers. Based on the Town's decision of where parking management will be housed, for instance should the parking organization be designated an enterprise system or separate department within the Town's structure, the Code would need to be updated to include parking enforcement staff.

ENFORCEMENT COVERAGE IN PEER COMMUNITIES

Parking regulations are generally enforced at least 10 hours per day when enforced by dedicated parking personnel. However, not every municipality conducts enforcement with dedicated enforcement officers. For instance, the City of Chandler's police department provides parking enforcement as part of routine patrols and does not have dedicated enforcement hours. Because most core districts experience their typical peak parking demand midday on a weekday, they generally base their enforcement resources around this time. Based on the characteristics and types of land uses within the Heritage District, enforcement may begin later in the day or extend into the evening as needed.

In areas such as Phoenix and Tempe, enforcement resources are allocated to extend later into the evening due to a large presence of restaurants, breweries, taverns and entertainment destinations that drives their peak parking demand period later in the day or generates a secondary peak in the evening. The intent is not only to manage peak parking demands, but to also have parking ambassadors available to the public when they are most frequently needed.

Table 52 shows typical parking enforcement hours for four peer Phoenix metro municipalities: Mesa, Phoenix, Scottsdale, and Tempe. Cells highlighted in orange represent hours where parking is enforced. In determining the appropriate hour for enforcement in the Heritage District, consideration should be given to the area's land use context. As parking occupancies generally were observed to increase from the afternoon to the evening and given the concentration of entertainment destinations in the area, parking enforcement should be focused later in the day than may be typical in other communities or areas of the Town. For instance, parking enforcement in the Heritage District may be most appropriate from 10am to 8pm Monday through Saturday.

Table 52: Parking Enforcement Hours in Peer and Aspirational Municipalities

Time of Day	Mesa, AZ	Phoenix, AZ	Scottsdale, AZ	Tempe, AZ	Fayetteville, AR	Lawrence, KS	Stillwater, OK	Portland, OR	Las Vegas, NV	Heritage District Recommendation
12:00-6:00am										
7:00am										
8:00am										
9:00am										
10:00am										
11:00am										
12:00pm										
1:00pm										
2:00pm										
3:00pm										
4:00pm										
5:00pm										
6:00pm										
7:00pm										
8:00pm										
9:00pm										
10:00pm										
11:00pm										
Days of the Week	M-F	Su-Sa	M-F	Su-Sa	M-F	M-Sa	M-F	M-Sa	M-F	M-Sa

Source: Walker Consultants

It is anticipated that the entire study area will not initially require active management, with enforcement focused on the core areas. Given the area of anticipated enforcement, 2.0 full time equivalent (FTE) positions are projected to provide sufficient enforcement for the Heritage District. This also provides administrative time this position requires for ongoing training and support of adjudication of violations. Additionally, the parking program and enforcement staff require oversight of a parking program administrator.

PARKING VIOLATION FINES AND WARNINGS

In conjunction with the parking ambassador model, the citation structure should promote education of parking regulations and aim to not deter from positive overall Heritage District experience for visitors that make a true

mistake, particularly first-time visitors or violators. Conversely, citations should also effectively deter scofflaw behaviors, or repetitive violations. This can be effectively accomplished through the use of a graduate parking fine structure and the use of warnings for first offenses.

Not only does this method deter repeat offenses, but it addresses the common concern among business owners of negative customer perceptions of paid parking and overzealous parking enforcement chasing away customers. As shown in the table below, several neighboring communities utilize graduated fines in terms of the fine increasing if not paid in a timely manner, but not in terms of recurring offenses.

Table 53 summarizes graduated fine structures for the same peer and aspirational municipalities looked at above along with the recommended rates for the Heritage District discussed above.

Table 53: Graduated Fine Structures in Peer Phoenix Metro Municipalities

Municipality	Graduated Fines (Typical)
Mesa, AZ	Paid within 7 days $40.50
	Paid within 8-30 days $101.00
	Paid after 30 days $182.00
Phoenix, AZ	No
Scottsdale, AZ	No
Tempe, AZ	Previously tiered base don how long until paid, but went back to flat fines based on interpretation of state law and fines collected for state-based offenses
Fayetteville, AR	Paid within 14 days $15.00 Paid after 14 days $ 40.00
Lawrence, KS	Paid with 14 days $15.00 Paid after 14 days $ 40.00
Stillwater, OK	No
Portland, OR	No
Las Vegas, NV	Paid within 30 days $50.00 Paid in 31-45 days $70.00 Paid after 45 days $90.00
Heritage District Recommendation	Tiered based on repeat offense per rather than time to payment: 1st offense $0.00 (warning) 2nd offense $25.00 3rd offense $50.00 4th offense $100.00

Source: Walker Consultants

In Mesa, Arizona where the graduated fine structure is utilized as provided above, a reduction not only in repeat offenders but in citations issued overall was observed for the period of January through March 2020 when compared to the same three-month period in 2019. In 2019, 4 vehicles received two or more citations, compared to 2 in 2020, for the same offense during the three-month sample period. In 2019, 143 citations were issued in the period from January through March, whereas only 14 were in issued in January through March of 2020.

PROS AND CONS

Pros:

- A managed parking system is only as good as it is enforced; there are no identified case studies of a successful honor system in parking.
- The parking ambassador model promotes a customer service driven approach to enforcement, rather than a punitive approach.
- Graduated fines with a first warning free discourage repeat offenders without penalizing mistakes.

Cons:

- Parking enforcement can have a negative perception.
- Some communities experience temporary leakage with implementation of managed parking

SECURITY

The safety and security of parking system users and personnel should be considered in both its design and operations, as good design principles overlap with the operational side of parking management. The unique nature of each facility and community will require individual assessment of components as management strategies are evaluated and implemented. Presented here as a foundation for these assessments are best practices and considerations as outlined in the International Parking & Mobility Institute's Accredited Parking Organizations criteria.

- Outlines safety and security philosophy in organization objectives and values.
- Documents effective workplace safety and risk management practices.
- Maintains standard operating procedures and conducts testing, drills, and emergency community procedures.
- Conducts periodic inspection of facility infrastructure and maintains documentation of inspections.
- Incorporates passive and active security measures in facility design and operation.
- Responds to public safety inquiries.
- Security staff are identifiable and uniformed.
- Trains security staff to respond to public safety and security issues.
- Participates in community safety and security organizations.
- Utilizes customer surveys in assessing security and safety measures.
- Develops safety-oriented partnerships with stakeholder and other interested groups.
- Provides onsite security staff or equivalent personnel.

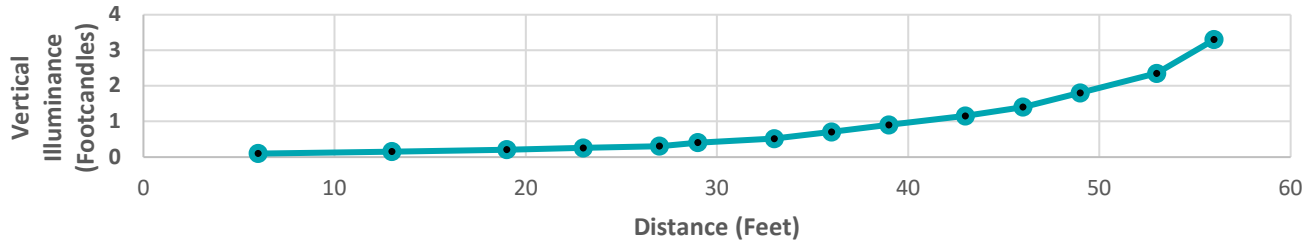
The most effective approach to security for parking facilities is CPTED (crime prevention through environmental design) as encouraged by the law enforcement and security professional communities. Parking consultants have long espoused many of the same principles, calling them passive security. Both factions are concerned with designing a parking facility where crime is inherently discouraged, primarily through visibility. Psychology plays a big role in the security of your parking facilities.

The more secure a facility appears, the more likely it is that parkers will accept and use the facility. A potential wrongdoer will normally analyze the situation, before committing a crime, to determine the odds of being seen and, if seen, of being recognized and apprehended. He or she is less likely to commit the crime in a facility where security features are obvious.

LIGHTING

Figure 36 shows the lighting intensity required at various distances in order be able to confidently recognize a human face.

Figure 36: Lighting Intensity versus Distance for Facial Recognition



Source: Walker Consultants

Lighting is the first line of defense and universally considered to be the most important security feature in a parking facility. Good lighting deters crime and presents a more secure atmosphere to the parkers. The elimination of hiding places and controlling the perimeter of parking facilities with careful attention to landscaping are important considerations.

PASSIVE SECURITY FEATURES

In parking structures, enhancing visibility is accomplished by maximizing flat floors, providing open stairs and elevator lobbies, increasing floor-to-floor heights and numerous other techniques. Crime watch programs, in which employees are encouraged to be alert and report suspicious activities, and neighboring facilities sharing information about criminal activities can be very effective as well.

Passive security features include:

- Perimeter Control
  - Screens in ground level wall openings
  - Minimize access locations
  - Trim foliage (maximum 18 inches high, trim trees below 10 feet)
  - Overhead rolling grills
  - Secured access for vehicles and pedestrians
- Enhanced Surveillance
  - Flat, open interiors with large column spacing
  - No interior wall obstructions
  - Glass-back elevator cabs
  - Open stairways

  - Strategic location of office
- Enhanced Lighting

ACTIVE SECURITY FEATURES

The provision of so-called active systems, including patrols, CCTV, panic buttons and emergency alarms, is usually the last resort, but may be necessary in some circumstances. There is no active system that can guarantee 100% elimination of crime; moreover, active systems rely on human recognition of the event and intervention. Putting cameras in visible locations and then not watching them is an invitation to more, not less, problems and liability. Therefore, it is important to thoughtfully combine both CPTED and active systems in a cost-effective manner.

Active security features include:

- Security Patrols
  - Enhanced security presence with frequent, uniformed patrols
  - Vary schedule, avoid predictability
  - Verify that patrolling was performed
- Video Surveillance
  - Use low-light, high-resolution color cameras
  - Use protective enclosures
  - Use covert cameras disguised as smoke detectors, fire sprinklers, junction boxes, etc.
  - Equip cameras with alarms to prevent tampering
- Video Recording
- Motion Detectors
- Panic Alarms
  - Caution, these can become a nuisance with false alarms
- Sound Monitoring
  - Caution, these can be rendered ineffective in areas with high background noise
- Emergency Phones
  - Use by observers of criminal activity, distressed patrons, medical or auto assistance
  - Use an annunciator panel to identify location
- Access Control
  - Update authorized key cards at least monthly

PROS AND CONS

Pros:

- The presence of parking ambassadors or enforcement officers, as well as others through street-level activation, can deter those with ill-will as a potential witness and/or intermediary.
- A well-designed facility and parking system can reduce the frequency of occurrence of damage to vehicles and crimes against parking patrons.

Cons:

- Parking system security can be expensive.
- Outside of police officers, few if any security guards can intervene or legally detain a criminal

PARKING REQUIREMENTS

SHARED PARKING

Land use codes for the Heritage District currently require off-street parking to enhance the historic character of the area, while ensuring that adequate but not excessive parking supply is provided, among other intents and requirements. The current code provides for off-site and shared parking options with reduction of up to 50% for shared uses.

Shared parking makes parking spaces available for multiple uses rather than for a single entity. Shared parking has many benefits including:

- More efficient use of the parking supply
- Reduced development costs
- Development catalyst for the surrounding area
- Increased parking revenues
- Improved management and customer service
- More convenient and easy parking for residents, businesses, customers, and visitors
- Reduced congestion and vehicle emissions

Shared parking can take the form of many types of agreements:

- Public lease/sale to private entities
- Private lease/sale to public entities
- Private lease/sale to private entities
- Joint development
- Private entity funds public
- Single space permitted for multiple uses

Two common forms of shared parking include:

Private lease/sale to the public – Under this type of agreement, the owner of a private parking facilities enters into an agreement with a public entity to open their parking to the public. Agreements can be made to open up parking during all times, specific times, or rented on a long-term basis. The municipality benefits because it can provide additional public parking without having to fund capital and maintenance costs. The owner benefits from collecting additional parking revenue from the public (if there is paid parking) or through a lease payment from the municipality.

Public lease/sale to private – Under this type of agreement, a public entity enters into an agreement with a private owner to park a development or satisfy parking requirements through the lease of spaces in an off-site public parking facility. A public parking asset has a financial value and can catalyze development because there is a high cost to a private developer in replicating those parking spaces. Requirements to build parking could therefore reduce the economic development potential of the area proximate to the garage. Therefore, a public parking facility can act as a development catalyst for the surrounding area.

However, depending solely on public shared parking facilities to subsidize private development without some level of investment in the public parking resources by developers can contribute to an unsustainable supply. In systems that do not utilize permits or paid parking to fund operations, maintenance, and capital investments, a fee-in-lieu can provide developers an option that both reduces their cost for parking and contributes to the shared public parking operations, maintenance, and supply on which they are relying. Fee in-lieu or payment in-lieu are discussed further in the funding strategies section.

Often shared parking approvals are made based on the snapshot of the properties provided at the time of the submission. However, land uses within properties change over time and with that their parking demands change in both quantity and distribution throughout the day and seasonally. Town Code currently terminates the Administrative Use Permit if the land use changes. What we find is that once the approval has been submitted, reporting changes in land use when rental properties turnover does not occur and many municipalities lack the resources to routinely back check existing approvals for maintaining compliance. Studies also often do not incorporate any qualitative data concerning existing parking conditions.

For instance, the City of Mesa requires several unique components to be included in the parking study analysis to supplement the quantitative analysis presented. These include, among other components,

1) A brief history of the phases of the site development with details of City approvals, which will demonstrate on new development how fluid the tenant programming may be and on existing site how frequently tenants turnover and land uses change

2) Personal interviews with existing tenants, managers and owners, and direct on site observations and counts made by the professional performing the study, to identify any existing parking issues or concerns from those most familiar with the area of interest's parking behaviors

3) A comparison of required and proposed parking for the site, for both current and proposed uses on the site, to again identify potential impacts to changes in land uses

4) A discussion of probably scenarios and problems that will need to be addressed if the parking is provided as proposed and conditions to protect the public interest if the proposal is approved, essentially leading to the applicant developing a plan if parking demands become an issue.

CASE STUDY
SHARED PARKING

Within the Downtown area of **Boulder, Colorado** private developments are prohibited from building private parking supplies. With the boundaries of the Central Area General Improvement District, Boulder provides parking based on their SUMP principle that all parking should be Shared, Unbundled, Managed, and Paid. Funded by a levy and paid parking, the City maintains a relatively sophisticated database with regular analysis of utilization to inform future supply needs and prevent over or under building to accommodate need.

In **Laguna Beach, California**, the City leases spaces from underutilized private parking facilities that, during weekdays, are used by City staff. These spaces are then made available for public use evenings and weekends with signage and wayfinding directing the public to the facilities based on the time of day.

In Arizona, shared parking is used in communities such as Phoenix, Mesa, Tucson, Flagstaff, Chandler, and Tempe.

PARKING MINIMUM REQUIREMENTS

Removing parking minimum requirements entirely can be a strong economic driver for a municipality or district and is becoming a more common occurrence in communities across the country. It is also considered by communities that want to support or create an environment that discourages reliance upon personal vehicles to access and move throughout the area of impact. Prior to moving toward removal of parking minimum requirements, the Town should consider:

1. Elimination of parking minimums can cause the Town to lose leverage with developers on where and how to build shared parking facilities, or to mitigate spillover to on-street parking and transitional neighborhoods.

2. Available alternative modes of transportation. If parking spaces are provided at reduced levels to accommodate personal vehicles, employees, residents, and visitors still require methods of accessing and moving throughout the area of interest. Transit, pedestrian, bicycle, and passenger service infrastructure including shelters, secured lockers and cages for bicycles, showers, and tree canopy are just a few examples of the infrastructure necessary to successfully support a reduced vehicle presence.

3. Project financing is often a major consideration in dictating parking supplies for a project, and when there is no parking requirement the banks will often require more parking than is necessary anyway.

Flexibility with a fee in-lieu of parking would be a better solution for the Town that would raise revenue for public parking, transit, bicycle and pedestrian infrastructure and TDM programming that supports an overall

reduction in parking inventory needed for the Heritage District. This option not only incentives development through reduced parking costs for developers, but in their ability to increases the useable square footage in the project, in term increasing the Town's tax base as well. These options are discussed further in funding sources section.

It should be noted that residential developments and dwelling units in mixed-use projects are typically exempt from fee in-lieu options. Especially in areas similar to the Heritage District, with relatively limited transit service and a lack of available grocers to serve area residents, and the community is still heavily reliant on their personal vehicles to accomplish common errands.

PROS AND CONS

Pros:

- Minimum parking requirements ensure adequate parking is available to meet the parking demands of a land use.
- Removing minimum parking requirements reclaims valuable real estate, potentially expanding usable square feet for developers and taxable square feet for the Town.
- Shared parking reduces the total parking supply necessary to meet the demands of complementary land uses.

Cons:

- Minimum parking requirements can create large facilities of parking that sit underutilized for large portions of the day
- Removing parking minimum requirements can inadvertently lead to higher requirements imposed by project financiers and accessibility problems where alternative mode infrastructure is inadequate to offset the travel demand
- Shared parking facilities adequacy can be comprised with changes in land uses and require ongoing administration to ensure all parties are still in compliance, increasing personnel resources needed to manage the system

TIME LIMITS

Time limited parking is an effective initial step in managing a parking system that is experiencing limited turnover of spaces and localized pockets of high demand. Implementing time limits in highly utilized locations in the Heritage District will begin establishing the value of the public resource while also encouraging long-term parkers to shift to areas of less demand and more availability.

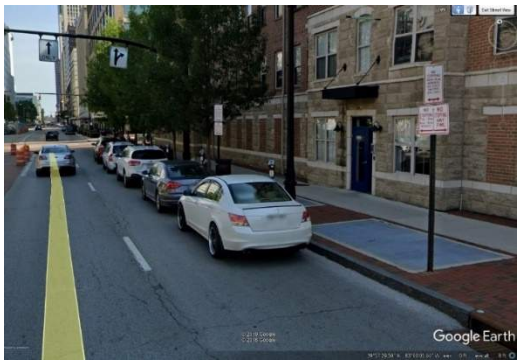
Time limits are generally utilized to encourage turnover in on-street spaces that are convenient to nearby, high demand generating destinations. The intent of time limits is to provide close in parking for customers, deliveries, and other short-term visits in order to accommodate a greater number of vehicles within the given space. While existing Code language allows for time limited on-street parking, outside of a few spaces designated by individual businesses, time limited parking is currently not utilized throughout the Heritage District. Based on existing Code language, time limited parking is not an option for management of public off-street parking facilities at this time.

Two and three-hour limits are common throughout the communities surrounding Metro Phoenix, including in Scottsdale and Mesa. The limits were chosen based on user behaviors observed within the given areas, providing enough time for the average customer's multi-destination trip. For instance, customers that visit a café for lunch then a retail store after, during the same trip. Time limits extending beyond 3 hours are generally avoided as these longer durations do little to discourage the "shuffling" of vehicles, or vehicles that move from space to space or block to block throughout the day to avoid citation. Shuffling of vehicles to evade citation contributes to increased traffic congestion, increased vehicle and pedestrian conflicts, and provides no decrease in occupancy for high demand areas.

Fort Collins, Colorado uses a 2-hour time limit per block face, which they define as both sides of the street between two intersections. In addition to the 2-hour limit, Fort Collins prohibits the vehicle from returning to the same block face for a minimum of 4 hours.[4] Irving, Texas uses a range of time limits, from 30 minutes to 2 hours, depending on the location. For instance, 30-minute limits are used at North Lake College for visitor parking, 1-hour parking is provided adjacent to Irving City Hall, and 2-hour parking provided in the City of Irving Public Library parking lot and along both side of Main Street.[5]

Time limits may fluctuate based on time of day and/or location. Time limits may be based on the time of day's demands. For example, the curb could change from a loading/unloading zone in the early morning to a travel lane during commute times, then to a passenger loading zone for dinner, and finally to a long-term parking space overnight, adding parking to areas that see fluctuating traffic demands. The photo below shows a portion of curb lane in Downtown Columbus, Ohio that functions as parking during the evening and overnight hours and a traffic lane during the day.

Throughout the study period, as detailed in the existing conditions section, approximately 2 in 10 observed on-street vehicles remained parked for more than 3 hours, with approximately 1 in 10 observed to be parked at least 4 hours. During both weekday and weekend observations, parkers typically remained parked up to 2 hours.



An example of a flexible curb lane
Source: Google Earth (Columbus, OH)

A three-hour time limit would provide sufficient time to accommodate most multi-destination visitors while discouraging long-term parkers from occupying convenient on-street spaces and restricting access to nearby businesses. Based on the observations of the study, as many as 150 vehicles could have been accommodated in the spaces occupied by long-term parkers that occupied the observed on-street spaces for 4 or more hours. On weekends this number grows to

3-Hour time limits are recommended for on-street parking spaces in the Heritage District.

[4] https://www.fcgov.com/parking/regulations
[5] https://library.municode.com/tx/irving/codes/code_of_ordinances?nodeId=PTIITHCO_CH21MOVETR_ARTVIIISTSTPA_DIV1GE_S21-138.05THMIPA

193 or more additional vehicles that could have been accommodated in spaces occupied by vehicles parked 4 hours or longer.

Additional, shorter time limits during peak delivery and pickup times can provided in designated locations either during the short-term to accommodate increased on-demand activity related to COVID or permanently if necessary. These spaces should provide no more than 10-minute parking to ensure on-street turnover of spaces is maintained and abuse of the spaces for commercial loading does not occur.

Time limits are not recommended for off-street parking facilities at this time. Off-street parking facilities are recommended to remain free and unlimited to accommodate longer-term parking needs, as well employees of the Heritage District's businesses.

PROS AND CONS

Pros:

- Encourages increased turnover of spaces which improves overall accessibility and customer access to nearby businesses.

Cons:

- Time limits may restrict the ability for parking patrons to complete multi-destination trips
- Can lead to employees "shuffling" their vehicles from block to block to avoid paying or parking farther away

PAID PARKING

Time limited parking can also be phased with paid parking when parking demands no longer respond to management through time restrictions alone. For instance, paid parking can be utilized in high demand areas to encourage turnover and redistribution of some parking demands to lower utilized areas managed by time limits. This provides convenient, close in parking for those who prioritize convenience over location and free parking for those who don't mind walking a block or two to their destination.

However, based on the observed parking demands and behaviors in the Heritage District, paid parking is not a current recommendation as a demand management strategy. The information presented with this strategy is intended to inform future consideration as a parking demand management strategy and if the Town decides user fees in the form of paid parking is the appropriate means of funding a managed parking system. If paid parking and user fees is not the desired funding source for the Town, then management of the program would be paid from another source such as the General Fund. Funding sources are discussed further in Section 7.

Typically, parkers have three demands on their parking supply; they want their parking to be convenient and located close to their destination, they want their parking to be abundant and easy to find, and they want parking to be cheap and preferably free. Realistically a parking system can meet any two of these demands at any given time, but not all three. Paid parking or time used as currency when limits are employed, can be a significant behavior modification tool in managing a parking system, while providing parkers the opportunity to prioritize their parking experience to meet their specific needs. For instance, choosing to park further away on a

block where space is easy to find and free or not time limited; or on a block that is close to their destination with availability but limited by time or is paid, or they are willing to hunt for a long period of time and wait for space to open in a facility that is free and close to their destination.

Paid parking is not recommended as a parking demand management strategy for the Heritage District at this time.

Paid parking may also be layered with time limits. In the early implementation of paid parking, patrons are generally allowed to "feed the meter" and add time as their payment expires. In some areas where feeding the meter becomes too common and has a negative impact on the turnover of parking needed to support area businesses, patrons may be prohibited from feeding the meter and limited to the amount of time they may pay to park in a given area. A layered requirement that vehicles are moved a minimum distance, similar to stand alone time limits, may be employed to maintain the desired level of turnover in the area.

Utilizing the length of stay data collected in the existing conditions, as summarized in **Table 54**, a high-level projection of the potential revenue associated with the on-street spaces observed during the study indicates more than 337,000 hours of parked hours occur on the ten blocks sampled. Note, the following projection assumes 15-minute durations are provided in spaces marked as such and provided at no cost to the parking patron. This projection also assumes a daily maximum rate of $5. These assumptions do not account for demand elasticity related to the initial implementation of parking whereby the system may experience temporary reduced parking demand and/or redistribution of parking demands to perimeter and/or off-street locations providing free parking.

Table 54: Length of Stay Data in Core Area and Total Number of Hours Vehicles are Parked

Type of Day	Number of Vehicles Parked for…					Total Amount of Time Vehicles Parked
	1 hour or Less	2 hours or Less	3 hours or Less	4 hours or Less	5 hours or More	
Weekday	286	158	50	13	55	1,079 Hours
Weekend	329	177	55	19	71	1,279 Hours

Source: Walker Consultants

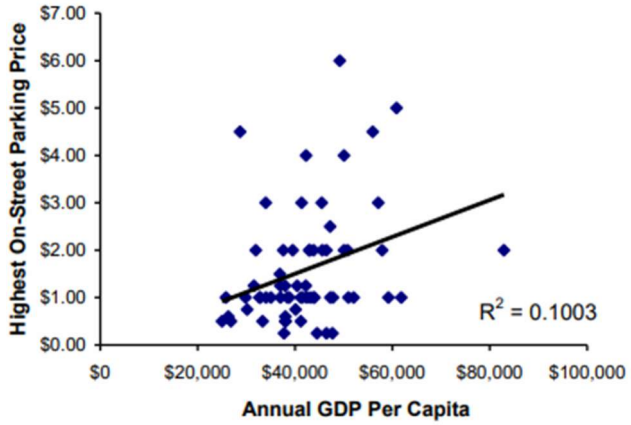
Based on a 365-day calendar year for which there are 52 anticipated Sundays and 10 federal holidays during which parking is not charged and do not overlap Sundays, a typical year will have up to 303 days during which parking revenues could be collected. Utilizing the study's observed hours parked as summarized above, and assuming 52 Saturdays and 261 Weekdays, charging at a rate of $1 per hour could generate over $330,000 annually based on the 10 street segments sampled in the existing conditions section.

Based on the questionnaire responses indicating Heritage District visitors are willing to pay approximately $0.50 per hour for a more conveniently located space, potential revenues decrease to approximately $174,000 per

year. These projections are preliminary and do not account for variables such as changes in parking behavior related to price elasticity, time limits, or potential cost recovery of parking system operations and maintenance.

A common concern among business owners in areas paid parking is new being discussed is that customers will stop patronizing the area in favor of businesses that provide "free" parking by including the cost of providing and maintaining parking within the cost of their goods and services. Studies completed by the Victoria Transport Policy Institute show a generally positive correlation between parking pricing and economic productivity, as shown in **Figure 37**.[6] The graph demonstrates that as on-street parking price increases per hour, revenue per capita does not decrease as feared. Rather, revenue per capita demonstrates a slightly positive correlation showing revenue increases per person as parking prices increase due to increased turnover of the parking spaces most convenient.

Figure 37: Sample of Communities Using Time Limited Parking in Conjunction with Pay-to-Stay



Source: Victoria Transport Policy Institute, 2018

While paid parking is an effective demand management tool in and of itself, it may also be implemented to contribute to funding the operations, maintenance and future capital investments of the parking system. Based on feedback provided in the online questionnaire, Heritage District employees and residents indicated they would rather walk further from free facilities than pay for convenient and readily available spaces.

Should the Town move to implement paid parking, consideration should be given to a corresponding employee permit program. An employee permit program ensures equitable access to public parking supplies for those who utilize the system most frequently and may not have another viable transportation option or work for an employer that provides parking on site. In a paid parking environment, the recommended employee parking permit would provide a discounted pass to park in a specific off-street facility. Should the town stay with time limited parking on-street, it is recommended that off-street facilities not be time limited to accommodate longer-term parkers, including employees.

[6] Liman, Todd. *Parking Pricing Implementation Guidelines*, Victoria Transport Policy Institute, April 11, 2018.

PROS AND CONS

Pros:

- Revenues can support or fully fund management of the parking system and future investments in technology and additional public supplies; the system is funded by its users rather than subsidized by the Town's population.
- Encourages increased turnover of spaces which improves overall accessibility and customer access to nearby businesses.
- Supports use of alternative modes of transportation and sustainability initiatives

Cons:

- Can create a barrier to business patronage, typically temporary
- Requires initial capital investment in parking access and revenue control systems

CASE STUDY
TIME LIMITS AND PAID PARKING

ParkFlag, the parking management agency for Downtown **Flagstaff, Arizona**, does well in communicating the need for generating revenues to provide for a managed system and their annual report clearly outlining how funds are used. Still, parking occupancies have remained low since implementation, even prior to COVID. Rates, $1 per hour or $45 per month for an employee permit, are below comparable markets and business have the option to provide patrons with vouchers for future parking visits. The program is successful with visitors, who report parking being easier to find and the rates as reasonable. While residents reportly disapprove of the program, the ParkFlag generated just over $1.5 million in revenue in the 2019-2020 fiscal year, an increase of $80,000 over the 2018-2019 fiscal year. With a report cost of approximately $790,000, that results in approximately $1.34 million in net revenues to be reinvested into additional parking supplies and transportation programming.

With more than 4.5 million visitors to Rocky Mountain National Park each year, **Estes Park, Colorado** sees many of them stopping in their downtown area to enjoy local restaurants and shopping. This stresses the mountain community's parking and transportation resources, frequently leading to conflicting interests for residents and visitors. As a result, the Town developed plans to implement paid parking in October 2020. Not wanting to discourage residents from visiting Downtown, the plan includes providing the first 30 minutes of parking free for residents, who register their vehicle annually for what is essentially a license plate-based permit.

PAID PARKING TECHNOLOGY

ON-STREET PARKING OPTIONS

MULTI SPACE PARKING METERS FOR ON-STREET PARKING (RECOMMENDED OPTION)

Technology related to support time limited parking consists of license plate recognition (LPR) equipment. Should the Town move to paid parking, LPR technology can continue to support enforcement efforts in a system that utilizes license plate-based payments. Not only does the technology provide for more efficient enforcement that can result in significant cost savings in enforcement and administrative personnel hours, but it also prevents vehicles from sharing overpayments. For instance, a driver pays for 2 hours at a single space or pay by space kiosk but leaves after 1 hour and 15 minutes. This may allow the next vehicle to park up to 45 minutes without paying for their parking usage.

A growing trend for municipalities is to move away from the use of traditional parking meters and replace them with multi-space meters. There are three main types of multi-space meters: Pay and Display, Pay by Space, and Pay by Plate. Numerous companies manufacture variations of multi-space meters; however, most of the kiosks are solar powered, equipped with wireless software to allow for real-time monitoring and integration between several kiosks, and accept coins, dollars, credit cards and smart cards.

Walker recommends the Town consider multi-space, license plate-based meter with multiple payment capabilities (cash, credit or debit card, mobile application), should the Town move to paid parking. These kiosks also support the use of validation codes that area businesses can utilize to establish an account their customers. Note that the validation system would not excuse payment entirely—rather, it would allow merchants to pay for parking, or a portion thereof, on behalf of their customers. Multi-space meters also facilitate the provision of an initial free period. For instance, the Town may opt to provide the first hour free, with parking the charged at a flat hourly rate. A parker may enter the license plate information at the kiosk and choose 1 hour, adding time via the mobile application later if they decide they would like to stay longer. They may also choose a 2-hour duration and be charged for only 1 hour. Likewise, they may choose 3 hours and be charged for 2, and so on.

> License Plate Recognition (LPR) equipment is an extremely valuable too in parking enforcement and administration in efficiency and cost savings, however, communities that utilize LPR technology have an obligation to develop responsible data retention and permitted use policies to ensure the privacy and security of the data collected.

Multi-Space meters have numerous advantages over traditional parking meters including:

- Increased revenue without increasing parking rates
- When paying with a credit card, customers often pay for the maximum amount of time
- Systems where the customer pays for an amount of time and displays a receipt in his or her dash or registers the payment related to their license plate do not allow for another car to take advantage of pre-paid time as can occur with meters
- Can easily accommodate a variable rate structure thereby improving turnaround by encouraging short stays and reducing the number of all-day parkers
- Provides instructions in multiple languages
- Use of Pay and Display and Pay by Plate multi-space meters does not require individually marked spaces; therefore, a standard Town block can generally accommodate at least one extra car when compared to Pay by Space and individually metered spaces
- Integrated software that allows for real-time monitoring, communication of data between kiosks and a central command station which allows for enhanced enforcement, collection, auditing and maintenance while greatly reducing operating costs
- Increases ticketing accuracy, resulting in fewer traffic court challenges and reduced administrative hours for enforcement officers to defend citations
- Improves aesthetics of Town streets because there are far fewer kiosks compared to single space meters
- Lower installation fee because less kiosks are required, and they are a self-sufficient unit not requiring wiring or concrete
- By being wireless, each kiosk can be installed in one hour by a single person
- Online credit card authorization allows the operator to accept payment only from valid credit cards, drastically reducing fraud that results from bad, or expired credit cards
- Manufactures can tailor kiosks to meet municipalities' individual needs
- Easily upgradeable, eliminating the need to replace the kiosks when new technology becomes available
- Various flexible financing options exists, and in some cases tax-exempt leases are available

Disadvantages of multi-space meters include:

- Higher initial cost to purchase each kiosk
- Some users find the kiosks difficult or confusing to use
- Cities that have not properly educated and informed the public about the transition to multi-space meters have experienced a high rate of failure in terms of patrons accepting the systems. In some cities, the multi-space meters were actually removed in response to customer complaints.

The following are a few "Best Of" examples of U.S. cities currently using multi-space meters:

- Columbia, Missouri – The City of Columbia created a website with detailed instructions for using the multi-space meters. The website includes a FlashPlayer Slideshow showing how to use the meters.
- Oklahoma City, Oklahoma – Oklahoma City installed six multi-space meters at various downtown sites for a three-month trial period. The trial period will allow for the evaluation of a large-scale replacement of the city's 1,400 aging meters. The pay stations have capabilities that allow patrons to pay by their cell phone, receive additional payments from cell phones and place a warning call to the parker when time is nearing expiration.

- Cedar Rapids, Iowa – ParkCR created a series of informational and entertaining videos to introduce the community to LUKE multi-space meters that replaced single space, coin only meters. Videos demonstrated how to operate the kiosks and provided advantages of the new system, such as no longer needing to carry change.

SINGLE SPACE PARKING METERS FOR ON-STREET PARKING

Single space parking meters are generally favored, however, by parking patrons for their convenient location at each parking space. Similar to multi-space parking kiosks, newer single-space meters are often designed to accept credit card and mobile application payments. However, these payments are tied to the meter and not the vehicle, allowing for the exchange in unused time from one vehicle to the next. Additionally, while an individual single-space meter has a lower initial investment than a multi-space kiosk, the quantity of single-space meter and the costs associated with wiring and networking them, combined with the higher quantity needed, can quickly exceed the initial investment in a multi-space meter system.

In areas that utilize the public right-of-way – the curb lane and the sidewalk – for example for outdoor seating, bicycle infrastructure, or an enhanced pedestrian environment, single-space meters can provide additional obstacles and clutter the sidewalk.

OFF-STREET PARKING OPTIONS

The following represent various payment options that can be employed with any gated system. Note that one, two, or all options can be employed, depending on the level of payment flexibility and convenience that is desired for patrons.

GATED WITH PAYMENT AT EXIT

This option includes gated entry lane equipment to the lot. All vehicles entering would do one of the following to gain access:

- Push a button and pull a ticket
- Present a pre-authorized bar code to enter (optional)
- Present a credential (such as a proximity card) to activate the gate

Once parked, the user would have a multiple parking payment options. These include:

- Paying at a kiosk (pay-on-foot station) with either cash or credit card and receiving a validation to use at the exit gate
- Pay using a parking app to obtain a bar code to present at the exit gate
- Pay at the exit gate in the drive lane with cash or credit card

This option works best to allow quick entry with push button ticket entry, providing access to up to 400 vehicles per hour on entry. Staffing requirements at the entry is limited to monitoring the equipment and providing customer service if requested. Having staff in the lanes is not recommended or required, with most assistance provided via intercom.

Our opinion of cost for one entry lane with gate and entry station with ticket, intercom, 2D bar code reader, and proximity reader is $20K - $22K.

This does not include the infrastructure to install the equipment. The photo to the right shows a sample of this type of configuration.

GATED WITH PAYMENT AT KIOSK (RECOMMENDED OPTION)

Payment kiosks can be located near pedestrian access points of the facility so that patrons would pass by the units during their visit. The kiosks come in two varieties – cash and credit card or credit card only (example photos below).

Our opinion of cost for a full service pay-on-foot machine (cash and credit) is $45-$55K and $15-$20K for a credit card only unit. Multiple kiosks of both types would be recommended based on the size and layout of the parking facilities considered.

Staffing is limited but recommended to be provided as floating parking ambassadors to assist patrons as needed. Parking ambassadors may be summoned via an intercom or by directly approaching the uniformed parking ambassador for assistance.

GATED WITH PAYMENT VIA PARKING APP

Another option is to allow users to pay for parking with a mobile parking app. This would provide users a QR type code to present at the exit. Payments would be collected by the app vendor with a user fee added to the transaction. This is typically passed along to the user so there would be no or minimal direct costs to the Town other than credit card fees and waiting for the funds to transfer from the vendor.

ADDITIONAL PAYMENT OPTIONS/ & FEATURES

A ticketed gated solution allows multiple validation options to be offered. This allows providing free or discounted parking in advance or after parking to special groups or VIPs.

Pre-paying/reserving parking is an option that allows users to obtain a bar code after paying for a period. The system tracks pre-paid parkers and allows the operator to hold the spaces for the pre-paid user.

Drop-off's and turn-around traffic can be handled by providing a payment grace period that allows someone to enter the parking lot and exit within a specified period without incurring a parking fee. As an example, the first 30-minutues of parking would be $0; anything over 30-minutues would be hourly or daily rate charge.

EXIT PROCESS

In all payment methods, a bar-code is provided for the user to present at the exit lane. Upon reading the code the gate is activated. As a final payment method, if a patron fails to pay prior to exiting, upon inserting an unpaid ticket the system will request payment via credit card. This method slows the exiting process, so it is not recommended as being advertised. If the patron does not have a credit card or has an issue at the gate an intercom allows the parker to request assistance. Operationally, the gate may be activated remotely or a roving cashier (parking ambassador) can aid by collecting cash or assisting with credit card payment and activating the gate.

Our opinion of cost per exit lane with gate, exit station with intercom, credit card reader, 2D bar code reader, and proximity card reader is $20K-$25K per lane, not including infrastructure costs.

Our opinion of cost per exit lane with gate, exit station with intercom, credit card reader, 2D bar code reader, and proximity card reader is $20K-$25K per lane, not including infrastructure costs.

UNGATED WITH PAYMENT AFTER PARKING

An alternative and less costly approach to adding paid parking to existing facilities is to add parking meter kiosks without gated entry and exit lanes. Multi-space meters, also referred to as "parking kiosks", allow one meter to cover multiple spaces. Users authorized to park for free could be given a placard or register their vehicle information to allow free parking for a designated period of time. For this method to be effective, it must be actively enforced.

Payment kiosks, as discussed above for a gated pay before exit option, would still be necessary. These kiosks would register payments in connection to the vehicle license plate number or an assigned space number, with payment made upon entry to the facility, after locating an available space. Enforcement of pay-by-license plate systems would utilize the same LPR equipment discussed in the on-street parking options discussed above.

With any paid parking technology, the investment is recouped from the parking revenues obtained from the paid parking system. The speed at which the return is realized will vary based on the rates charged, which can be established to realize a return on the initial investment within a specified time frame, among other factors.

MOBILE PAYMENT FOR PARKING

Smart phone applications are expanding payment methods for many services and goods, including parking. Mobile payment applications allow parkers to bypass meters by preregistering an account with their license plate number, personal information, and payment method, typically a credit card or PayPal. Signage indicates participation with areas assigned zones or locations as demonstrated in the sample signage at right. A highly appreciated feature of pay by app is the ability to extend parking payments without returning to the vehicle, where allowed. For instance, a customer parks and pays for a half hour intending to run one errand to a nearby post office. While in line they decide they are hungry and would like to visit the neighboring deli. Rather than returning to their vehicle to add addition payment for the extra time needed to visit the deli, the customer can add another hour, or more, based on limits set in the system, while in line at the post office or seated at the deli.

NEIGHBORHOOD PARKING PERMIT PROGRAMS

With the implementation of managed parking, whether through time limits, paid parking, or a combination thereof, it is important to provide equitable options for frequent parking system users such as residents and employees. A neighborhood parking permit program (NPPP) allows permit holders to park in designated facilities or zones while restricting others during specified times. NPPP may alternatively operate as means to exempt permit holders from specified area regulations. Although the permit does not guarantee space availability for permit holders, it does help prevent spillover parking from other areas, particularly in transitional zones where commercial and residential areas meet. There are many variations of neighborhood parking permit programs. Permits may restrict non-residential parkers during typical peak conditions for residential areas, with permit holding residents exempted from overnight parking restrictions. Or, permits may exempt permit holding employees in specified facility of a commercial area from time limitations or provide a reduced parking fee on a monthly rather than hourly basis. Although varying regulations by area creates additional administrative effort, it does facilitate catering the regulations to the specific needs of each neighborhood.

Permit programs should be reserved for areas with demonstrated need based on observed high parking utilization, resident complaints, and a willingness to fund the administration and enforcement of the program through user permit fees. As demonstrated in the existing conditions section, which reflect observations made during the 2015 study as well, while on-street parking within the immediate one block radius of Gilbert Road experiences high occupancies during peak conditions, these areas remain localized to the commercial corridor. Should transitional areas, such as Elm Street, experience sustained higher occupancies, this may be an area to consider a neighborhood parking permit.

The City of Phoenix has a residential parking program that has been in effect for over 30 years. The program is specifically for residential neighborhoods experiencing “intruder parking” from those traveling to adjacent destinations to the residential neighborhood. Residents participating in the program must demonstrate eligibility and renew their permits annually, as a cost of $10.00 per vehicle per year. Visitor permits are also available for guests and service vehicles at a rate of $5.00 annually and are limited to 3 per residence.[7] The City

[7] https://www.phoenix.gov/streets/neighborhood-traffic-programs-services/resident-permit-parking

of Tempe provides a similar residential parking program with one each resident and visitor permit provided per household. Like Phoenix, Tempe residents must renew annually.[8]

The City of Boulder in Colorado utilizes neighborhood parking permits in zoned areas to provide businesses with insufficient on-site parking the opportunity to purchase up to three permits for use by employees on an annual basis, or individual commuters may purchase a permit on their own at a slightly higher rate and based on availability. Permit holders in these zones are exempted from posted regulations, which vary by area and include 2 and 3-hour time limits, permitted parking only, and paid parking. The Boulder neighborhood parking permit program began with 3 zones, and over the last 25 years has grown to include 12 zones, serving approximately 2,085 permit holders.[9]

> Once development reaches a point to which it will push parking demands into the residential neighborhoods, the Town should then consider implementation of a neighborhood parking permit program.

Currently, parking demands were not observed to spill over into residential neighborhoods under typical conditions. Once development reaches a point to which it will push parking demands into the residential neighborhoods, the Town should then consider implementation of a neighborhood parking permit program, as provided in the implementation plan in Section 9.

PROS AND CONS

Pros:

- Reduces impacts of spillover and overflow parking into protected neighborhood(s)
- Improves the quality of life for residents in the protected neighborhood(s)

Cons:

- Residents must purchase permits to park on-street and be exempt from any area regulations.
- All visitors, including resident guests, need a permit to park on-street
- Can lead to long-term storage of vehicles on-street by permit holders, which can impact access for utilities
- Administrative and enforcement resources necessary to operate the program

[8] https://www.tempe.gov/government/engineering-and-transportation/transportation/permits#Residential%20Parking%20Permit
[9] https://bouldercolorado.gov/parking-services/neighborhood-parking-program

07 Signage & Wayfinding Strategies

WALKER CONSULTANTS

Heritage District Parking Master Plan

SIGNAGE & WAYFINDING KEY TAKEAWAYS

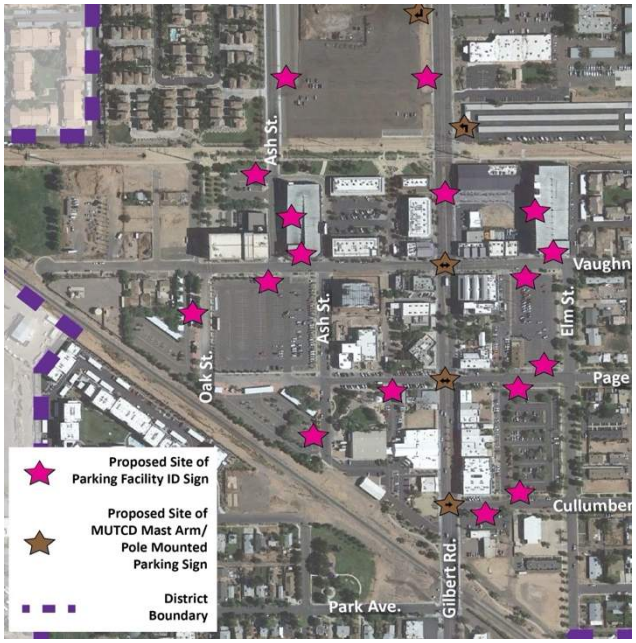
STATIC SIGNAGE NEEDS

$19,500
Total Cost of All New Proposed Static Signs

17
Number of New Parking Facility ID Signs Proposed (Existing Facilities)

5
Number of New MUTCD Parking Guidance Signs Proposed

Static Signage Locations >



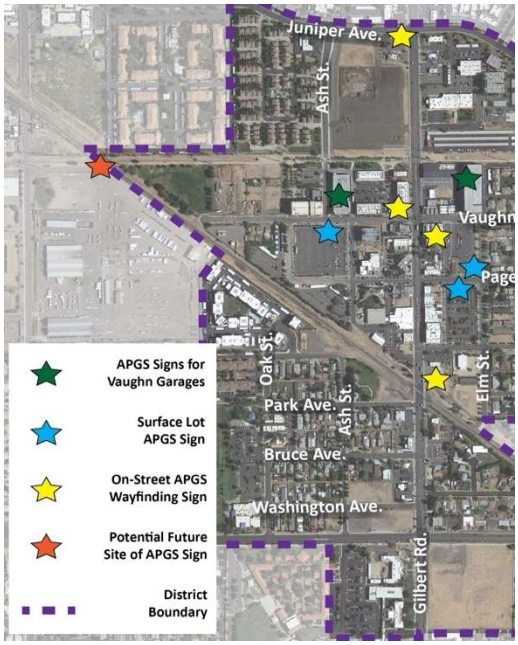
FUTURE APGS NEEDS

$188k - $440k
Total Cost of All New Proposed Static Signs for Existing Public Parking System

5
Number of New APGS Signs Proposed for Existing Public Parking System

5
Number of Additional Electronic Wayfinding Signs Proposed

APGS Locations >



SECTION 7 – SIGNAGE & WAYFINDING STRATEGIES

WAYFINDING SIGNAGE

Public-facing signage is one critical area of urban design where aesthetics must be effectively balanced with functionality in order to achieve a desirable result. Despite the ubiquity of smartphones, Google Maps, and internet connectivity, enabling end users to call up a wealth of navigational and other information in real time, the importance of good signage has not waned. Good physical signage can effectively combat general messaging and informational overload.

Signage that does not function as intended leads to confusion, frustration, and general dissatisfaction for end users. Signage that isn't aesthetically satisfactory, that doesn't exhibit visual consistency and continuity, will be more easily overlooked or ignored, as well as contribute to an overall sense of choppiness in the urban design fabric of the Heritage District. That fabric consists of parking, streets, bike paths, parks, or other public-facing place where signage is needed.

PRINCIPLES OF GOOD WAYFINDING SIGNAGE

The following list summarizes the key components and essential areas of wayfinding signage design. Every principle below relates to one another, and the order of the list should not be construed to mean that one principle is more or less important than all the others. Demonstrating and implementing best practices in all these areas is fundamental in achieving consistency, continuity, and effectiveness, and therefore in achieving good wayfinding signage design.

- **Branding**

  Good public signage should reflect and contain the overall brand of the organization, jurisdiction, district, or entity for which the signage is located, to the greatest extent permitted by the Town's signage design standards and the Manual of Uniform Traffic Control Devices (MUTCD).

  In the case of a public parking system, the system may have its own brand or be a direct extension of the brand of the municipality, depending on preference. In any case, the overarching concerns of great branding are consistency and continuity across the sign network. If a direct extension of the Town's branding, then certain elements should carry over and be represented on parking signage. These elements include color schemes, Town logos and/or word marks, font families, or other distinct design elements that may be present in the Town's brand. If the District has its own brand, then signage should be consistent with a style guide or established design elements for that system's brand.

  In the case of the latter, however, it is important that the style guide for the parking system incorporate at least one branding element from the Town in order to signal to members of the public that a particular parking lot or structure is, in fact, a public facility available for use by the public and owned or managed by the Town. In this case, the parking system might have its own color and font scheme, but still incorporate the Town or District logo. Or, it may have its own logo but follow a color scheme consistent with the Town's brand, or at least feature the phrase, "Town of Gilbert" or "Heritage District" within the sign legend.

It is important to note that branding goes beyond sign design. Branding can include structural elements, such as the way in which a sign is mounted to a support structure or specific construction materials that are used to construct the support structure itself. For instance, an American Southwest community such as the Town of Gilbert may construct its wayfinding sign supports using stucco or an adobe treatment or may fashion its sign support structures to resemble a historic landmark such as the Gilbert water tower. Or, sign structures may be designed with the intent to have signs suspended from the top, as opposed to mounted on a central location on the structure.

- **Colors**

While color schemes for all regulatory and warning signage are completely standardized by the MUTCD, color schemes for some guide signs, including community wayfinding signs along conventional roads, do not have to conform precisely. For instance, while a STOP sign must have an MUTCD Red background, no matter where it is placed, a community wayfinding sign is not required to have the exact MUTCD Green, Blue, or Brown colors as background colors for the sign legend. While some background colors for the legends within such signs, along with those colors' variants, are reserved for non-guidance signs (e.g., wayfinding signs should not have an MUTCD Red background), such signs may have their own shade of green, blue, brown, or white, as a background color. Sign elements outside the legend, such as a town or city logo or neighborhood district, can have any color scheme.

Similarly, parking area guide signs also are permitted to feature a unique color scheme, so long as a high contrast is maintained between the sign backgrounds and sign legends. The MUTCD, while containing some standardized parking guide signs, does not require their versions to be used, and therefore does not require such signs to conform to a green-on-white color scheme.

In relation to branding, it is suggested that municipalities consider a color scheme that incorporates or matches the schemes used in their overall brands. For instance, if the primary color of the Town's logo or flag is royal blue, that could be the color adopted as the background color for sign legends in that Town's wayfinding signage.

Also, different legend background colors may be chosen to represent different sub-areas, land uses, or districts within a sign system. In the context of the Town of Gilbert, this may mean that Heritage District is represented by signs featuring a green background whereas a historic residential neighborhood is represented by signs featuring a blue background. Or, perhaps wayfinding signs for parking facilities feature a blue background where wayfinding signs for destinations and landmarks feature a brown background. In the event that different colors are chosen for this purpose, color-coded destination guide signs should be posted along the periphery of the wayfinding signage area that describe how color coding is used.

It is required that the color of legend elements, including text, maintain high contrast with the background color to ensure readability. On blue, green, or brown signs, this typically means that text within legend should be white.

- **Fonts**

  Similarly to colors, signs such as community wayfinding signs, parking guidance signs, or standard street signs are not required to use a Federal Highway Administration-approved font (FWHA Series fonts or Clearview) for any element of the sign, including the legend, so long as that font meets minimum requirements for legibility and readability.

  While legibility and readability requirements prohibit the use of many fonts, there remains a wide variety of both serif- and sans-serif fonts that can be chosen for wayfinding and some guidance signs, such as street sign blades. Common alternative fonts for such signs include Helvetica, Verdana, and Futura. Such fonts have been shown via study to meet minimum readability requirements, as required by the FWHA.

  In relation to branding, it is suggested that municipalities consider a font or font family that incorporates or matches those used in their overall brands, if possible. If such fonts do not meet eligibility requirements, then FWHA Series fonts or Clearview should be utilized for sign legends while the alternate font can be maintained for use in the non-legend sign elements, such as the municipality's logomark or wordmark.

- **Layout**

  Consistency with regard to sign layout is key to maintaining sign consistency and continuity. For instance, the preferred design for wayfinding signage may have directional arrows to the left of legend text and symbols to the right. It may have text centered instead of left-justified. It may have the city logomark or wordmark at the top of the sign. Whatever the preferred design, it is critical that all signs maintain layout consistency.

  A family of symbol designs should be chosen and applied to all wayfinding signage in the same manner. Care should be given to ensure that all visual elements of symbols remain completely consistent. Sign borders, shapes, and margins are also areas where signs commonly can vary slightly across a sign system. Whether signs are to be squared in the corners versus rounded, or if they are to feature a border or no border, they should remain consistent.

  The MUTCD outlines various standards and specifications for important layout attributes such as margins and spacing. Maintaining consistent margins and spacing is critical to ensuring an aesthetically unified design, as well as promotes sign readability.

  One important layout element to also consider is symmetry. While sign design themes may call for inherent asymmetry, specifically with regards to such items a sign structures, there should be some symmetry given for elements within sign legends themselves.

  Layout consistency can apply to everything to ensuring that all text within a sign legend family be the same size (the MUTCD requires certain minimum sizes for all legend text on vehicular signs) to ensuring that text has consistent typographical attributes. For instance, letter spacing, kerning should remain consistent when possible. Care should be taken to ensure that one sign's text isn't rendered in bold or italics when another sign from the same family is bold or in italics.

There can even be a myriad of typographical properties within even the same font family that can cause inconsistency in layout. For instance, there are many variants of the FWHA's Series set of fonts, with the width of letters narrowing between each series.

- **Messaging**

  Consistent messaging is critical to minimize confusion for end users. For instance, if the formal name of a municipality begins with "Town of" rather than "City of," as it does in the case of Gilbert, then all wayfinding signs and other signs that make reference to the municipality should take care to use the generic noun "town" instead of "city." Or, perhaps the formal name of a public downtown parking garage contains a possessive apostrophe and the definite article (e.g., "The Farmers' Garage"). If that is the case, care should be given to ensuring that all signage that refers to that garage follow the correct, preferred syntax.

  Messaging consistency is not limited to formal nouns or proper names. Within loading zones that have the same set of restrictions, one type of sign may read "LOADING ZONE" while another may read "LOADING PERMITTED" or "PARKING PROHIBITED – LOADING ONLY." Where messaging isn't precisely regulated by the MUTCD, or where the MUTCD allows choices between sign or message variants, it is important that a particular phrasing, word order, style, or syntax be chosen, with all signs being consistent with regards to the chosen messaging format.

  Finally, message overload is something that should be considered. While the MUTCD prohibits message overload within the legends of vehicular signs, especially along limited-access freeways or highways, custom signs or non-MUTCD signs can often have too much text on them. Wording should be as concise as possible, no matter the type or purpose of a sign. For wayfinding signs, the destinations or landmarks that make it onto a sign should be carefully selected, so as to limit such signs to three or four destinations per sign.

- **Identity**

  While following best practices with regards to good sign design in order to maintain consistency with the brand of an entity, it should be noted that such signs, along with their structural support elements, may actually collectively forge a unique identity for the entity.

  For instance, a unique font family, sign legend background color, unique family of symbols, or certain structural elements may come to be associated uniquely with that entity. If a parking facility or system uses a unique shade of blue for its sign legend color, or a unique blue/green alternating symbol denoting "parking," frequent visitors to that parking may begin associating that color with the parking asset or system. Merchants may instruct visitors that they can "park anywhere [they] see a sign with royal blue background with a Circle "P" on it that is hanging from a dark green metal pole."

- **Placement**

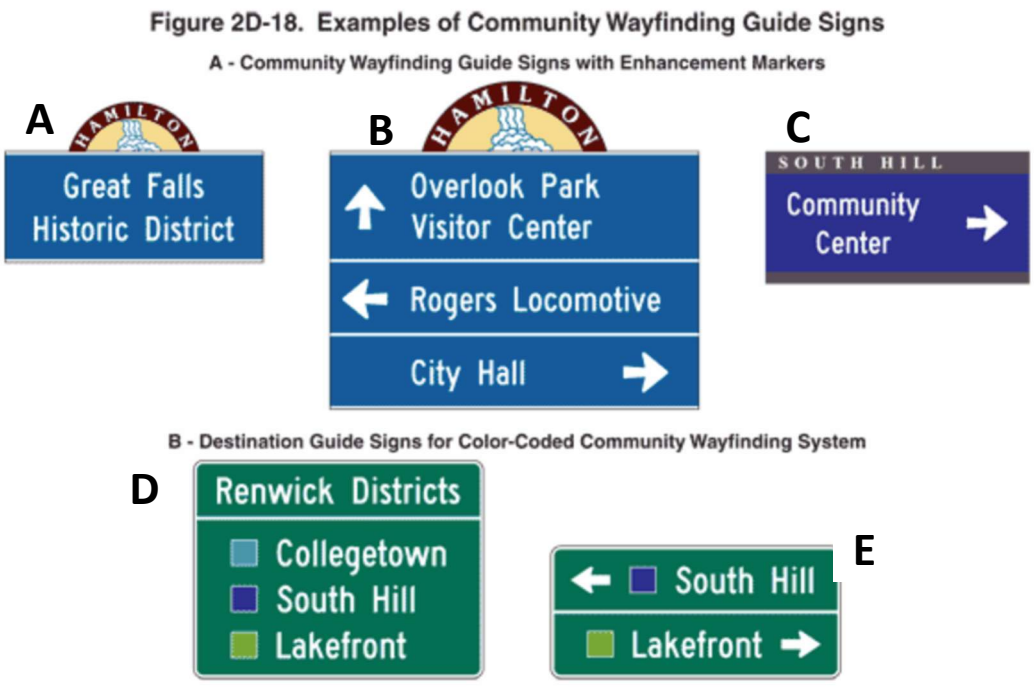
  While it is typically well understood that signs should be as visible as what is feasible, and be placed at key decision points, it is often the case that there is inadequate placement of signs. For instance, while

signage at the entrance of a parking garage may clearly indicate which levels of the garage are partitioned for which user groups, there may not be follow-up signage repeating the message, or signage indicating the transition point between user groups. Or, one sign may indicate that a certain destination is straight ahead with an arrow, yet the sign is placed just before a fork in the road. Such bad placement can have the effect of exacerbating inconsistent messaging, if proceeding wayfinding signs do not include the aforementioned destination with the ambiguous directionality.

With any guidance signage, there is decreasing marginal utility from the point that a minimum number of signs have been deployed. For instance, placing such signs every 20 feet along a major corridor would be unnecessary and infeasible. On the other hand, having one single wayfinding sign at the town entrance would be woefully inadequate. A balance must be effectively struck, with key decision points and transition points carefully evaluated and identified.

In any case, signs should be placed at every instance where there is a directional change or waypoint. Also, an often-overlooked placement strategy is placing very important destinations on wayfinding signage that come after the destination's final waypoint along a particular route, accompanied with a "turn-around" arrow or symbol.

Figure 38: Examples of Permitted Wayfinding Signage Types from MUTCD



Example community wayfinding signs, shown in the MUTCD, incorporate a city logo in a stylized manner at the top of the sign as well as custom background colors. The example on the top-right (C) shows a custom-font wordmark for a neighborhood or district above the main sign legend.

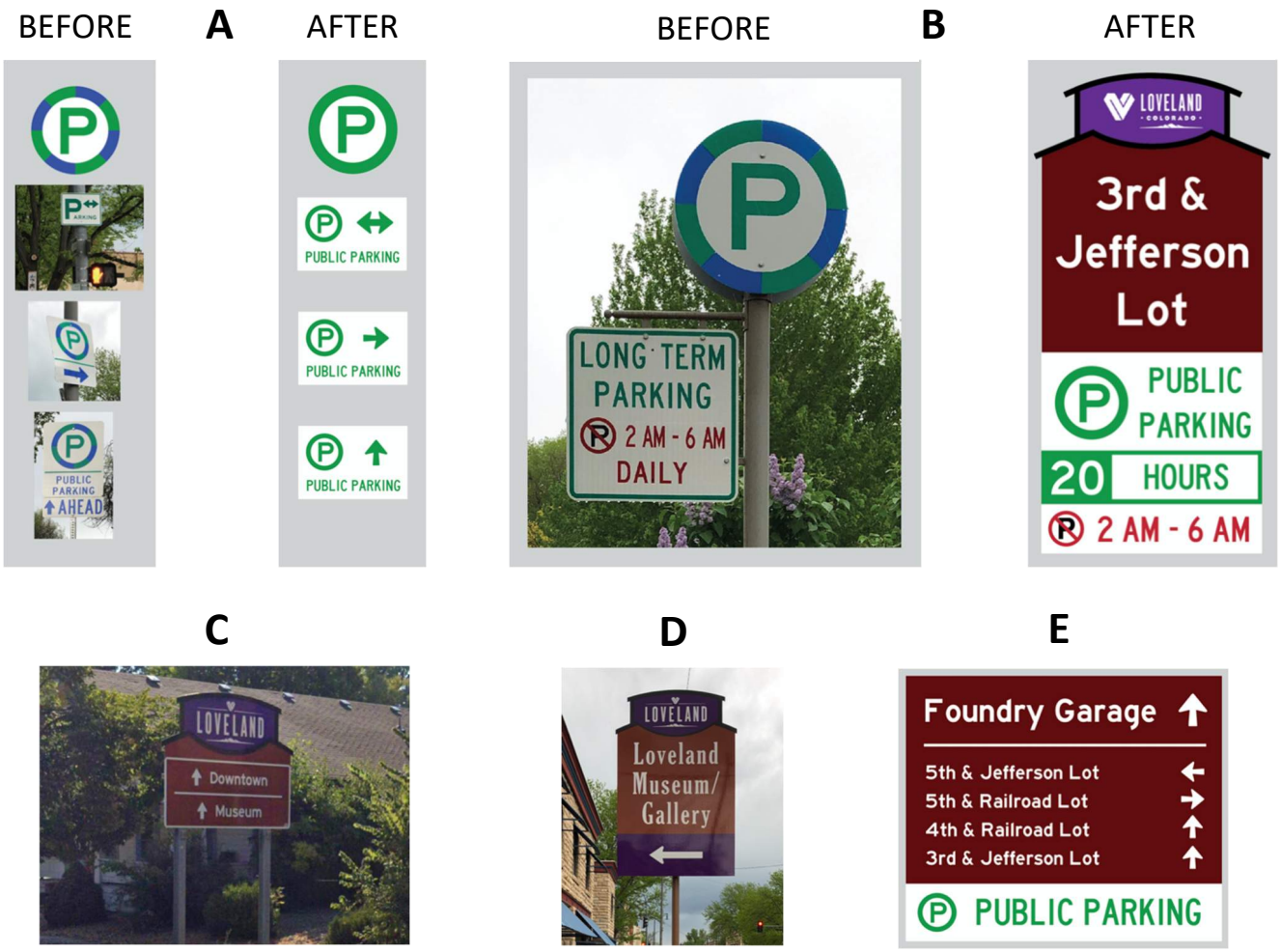
Source: 2009 Manual of Uniform Traffic Control Devices

Figure 39: Parking Structure Wayfinding Examples

Public parking facility signage concepts designed by Walker (A thru E) for the City of Easton, PA. Note the aesthetic and visual consistency across sign types. The font, Roboto, is a highly legible sans-serif alternative to FWHA Series fonts. The color scheme, white on blue, as well as the custom circle "P" symbol, both derive from the city's flag (A), which is over 200 years old (F). The shade of blue used in the background maintains high contrast with lettering. The custom wordmark for the city carries over from the municipality's own branding.

Source: Walker Consultants, City of Easton, PA

Figure 40: Public Surface Parking Signage Examples



Public parking facility signage concepts designed by Walker. Existing parking guidance signage (A, left) was a hodge-podge of different designs with some MUTCD standard signs. Walker's proposed replacement signs (A, right) propose a unified green circle "P" symbol as well as consistent symbology, arrow types, messaging, and layout.

Existing parking lot destination signage (B, left), while distinctive, did not include the name of the parking lot. Walker's proposed replacement (B, right) would deploy a consistent sign type across all public lots, with parking restrictions indicated in a manner more consistent with the MUTCD. The background is MUTCD Brown and incorporates distinctive design treatments at the top including the city logo, which carries over from vehicular wayfinding sign styles already found in the city (C, D). Note inconsistent font styles on existing wayfinding signage (C, D).

The final sign (E) standard, rectangular vehicular wayfinding sign designed for use along major arterials. It incorporates the same green circle "P" and "PUBLIC PARKING" found across all public parking signage proposed, giving the public parking system a distinctive identity. In this context, a large, new municipal garage was recently constructed, intended to serve as the main public parking facility. This sign attempts to communicate that, while there are other public lots, the primary public facility is the Foundry Garage, shown at the top in larger text and set off with a line.

Source: Walker Consultants, City of Loveland, CO

Figure 41: Parking Structure Identity Signage Examples

A

B

C

The image on the top-left (A) shows the primary building façade signage for The Foundry garage, which is a large, new public parking facility in the City of Loveland, CO. Since opening, utilization had been below expectations. Walker identified through public outreach that one of the problems was that many people did not realize that the facility was public and part of the municipal public parking system. Nowhere on existing garage signage (A, C) were circle "P" symbols or the phrase "PUBLIC PARKING." Also, the color scheme, font, symbology, and messaging were inconsistent with any existing public parking signage. This is evident in the bottom picture (C, compared to figures on previous page).

Walker's proposed solution was to add simple sheet-style signage (B) to the building façade at key locations, including above the entrance and at building corners around the exterior, that carries over the proposed signage design for other parking facility destination signs, as shown in the figures on the previous page. This would establish the garage as clearly belonging to the public parking system while maintaining and complementing the existing stylized signage.

Source: Walker Consultants, City of Loveland, CO

Figure 42: Street Signage Examples & Examples of Urban Identity

A

B

C

D

E

F

Above are examples of how signage can unite with traffic control device structures or sign support structures to create unique municipal identities. The top two photos depict a special type of modular traffic signal that Tempe uses exclusively for all its signal installations (A) and that can be found in Gilbert as well (B). Note that for the Tempe example, the city logo is depicted in the corner, and the font used on the internally illuminated sign is not an MUTCD Series font. When consistently deployed across all installations, both the sign and the signal can let visitors know, even with subtly, that they're "in Tempe" or whatever district or special area the signs are used in.

The middle two pictures (C, D) show how graphic elements, colors, and fonts can be used consistently across urban and transportation infrastructure to create an identity. Westminster, CO deploys a particular shade of teal across its entrance monuments (D) and illuminated street signs (C), as well as uses the same non-MUTCD serif font.

The bottom two photos provide examples of how distinctive elements can be used exclusively on signs to create a visual identity. The photo on the bottom left shows a standard City of Phoenix sign installation depicting the city logo. Every illuminated sign installed by the City follows the same layout, color scheme, and uses the same font, and the sign is mounted in the same place and manner on every installation. On the bottom right is an example from Tempe's downtown, where a distinct white-on-blue color scheme is used for signage, along with a non-MUTCD font.

Source: Walker Consultants, Google StreetView

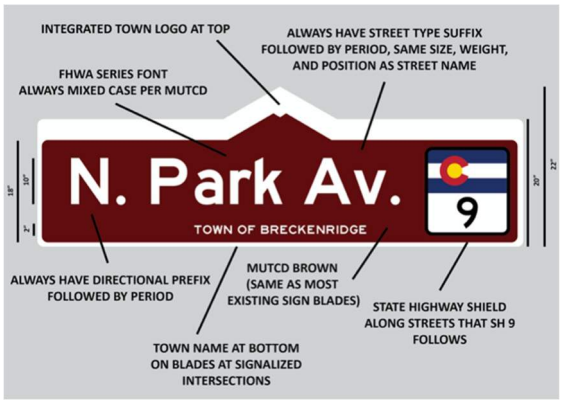
Figure 43: Other Examples of Sign Consistency, Messaging, and Branding

A

B

C

D



E

In the municipality of Breckenridge, CO, the city logo is incorporated into the support structures for all wayfinding signage (A). (C) shows a recent Walker-designed variable message sign installation that also incorporates the municipality logo (the logo was updated in the time between when the two signs in (A) and (C) were installed).

The remaining figures (B, D, E) depict Walker-designed street signage that both carries over design concepts from (A) and (C), but that also creates a unified layout, color scheme, and identity across all municipal street sign blades. (E) contrasts the mix of sign types found in the municipality today and shows how those same signs could look using our proposed redesign, which incorporates the municipality logo at top in a novel way consistent with Town branding. (B) depicts different concepts that were explored during the design alternatives phase.

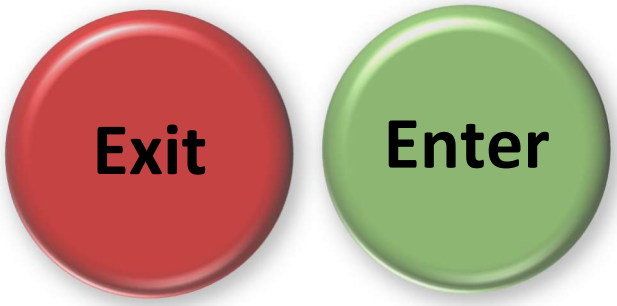
Source: Walker Consultants, Town of Breckenridge, CO

WAYFINDING IN PARKING LOTS & STRUCTURES

Being able to find one's way through a complex, public space is a universal concern of both end users as well as of the entity who manages the public space or private space that caters to the public. It is the ability to understand where you are and where you want to go in a facility and then to find the path of travel to get there. Afterwards, the path of travel must be reversed in order to leave a facility. Wayfinding design involves the total planning of the functional design to enhance this ability. As important as signage is, wayfinding is more than good signage. A key goal of wayfinding should be that the people know where they are and where they want to go with a minimum of signs.

In the context of public parking facility design, wayfinding is necessary for both drivers and pedestrians. First, the driver must find and recognize that a particular building is, in fact, a public parking facility. While it is appropriate to make the parking facility's architecture compatible with that in the area, completely hiding or camouflaging the structure should not be the singular goal. Canopies or portals are often valuable to make sure the vehicle entrance is clearly identifiable to a driver who may be dealing with many visual distractions.

Upon entering the facility, the parker should find the area to be welcoming and well lit. It is often desirable to give the driver no choices immediately after entering. Driving the length of the structure before any further decisions are required will often help the driver become acclimated to the facility. A primary element of wayfinding design is to provide visual cues. A simple, easily understood traffic pattern that is repeated once every floor greatly eases wayfinding. Routing unfamiliar drivers past visual anchors, such as the main stair/elevator tower, shortly after reaching each floor orients the parking for the pedestrian mode.



After the driver has found a space and parked the car, pedestrian considerations come into play. The first issue is helping the parker remember where the car is parked. Here, signage is critical. Wayfinding for the pedestrian is greatly enhanced by visibility across the parking floor. The walking path is also a consideration. It is desirable to orient parking aisles toward the pedestrian destination. Proper location of stair/elevator towers in the overall path of travel is also important.

Once the parker has retraced the route to the parking stall, wayfinding returns to a vehicular mode. The exit route should be equally simple and understandable. Keeping the exit route to the shortest path of travel is often a high priority.

Key design elements that relate to good wayfinding in a parking facility include:

- Visibility across the parking surface
- Minimum walking distances
- Light wells that also serve as pedestrian collectors
- Flat floors
- Floor-to-floor heights
- Structural systems
- Clear, unobstructed signage
- Uniform lighting
- Unobstructed vehicular and pedestrian circulation paths

EXISTING PARKING GUIDANCE & WAYFINDING SIGNAGE CONDITIONS IN GILBERT

During its field visit, Walker observed and documented existing parking signage and wayfinding conditions in the Heritage District. In general, the following findings were made:

- **Lack of parking facility signage**

  While the two parking facilities have large, stylized signage indicating "PARKING" on the structure facades themselves, none of the public surface parking lots have any identifying signage at all indicating that the facilities are, in fact, public parking. Only the new Vaughn East Garage has signage for "PUBLIC" build into the overall sign scheme, and even then, it is only present on the Vaughn Avenue entrance.

- **Lack of obvious public parking nomenclature or identification scheme**

  Many, if not most, public parking systems in downtown or city-center areas have a nomenclature system that is used to clearly and consistently identify lots and parking structures, both for internal planning and operations purposes and for external, public-facing purposes. Along with a lack of signage, it was not clear to Walker through the course of this study that there is a consistent naming or identification scheme for any of Gilbert's public assets.

  This made it necessary for Walker to devise its own nomenclature and numbering system for this study. The lack of a consistent nomenclature scheme also made it difficult to identify whether or not a number of selected surface lots were private or public, both prior to our site visit and during our site visit. Even the Vaughn West Garage appeared, at first glance, to potentially be a private garage that serves the adjacent Park University campus.

- **Inadequate and/or non-standard general parking guidance signage on-street**

  Walker did make note of a handful of small, non-standard parking guidance signs that were posted to side-mounted poles along Page and Cullumber Avenues, as well as along Gilbert Road (one sign for the temporary gravel lot and one sign for "Norwood Parking."). In general, such signs were posted right outside of parking lot entrances. Most facilities had no visible parking guidance signage of any type.

The photos shown on the next page depict some of the signage deficiencies described above.

Figure 44: Existing Parking Signage & Wayfinding in Heritage District

A

B

C

D

G

E

F

Photos (A) and (E) show existing parking structure façade signage for two structures within the same downtown system where the word “PUBLIC” is missing. Also note the two different color schemes and font for “PARKING.”

Photos (C) and (G) show existing examples of non-standard generic parking wayfinding signage. Note the serif “P” and serif “old-western” type font for the rest of the word “Parking”.

Finally, photos (B), (D), and (F) show on-street areas where parking guidance signage is absent. In (D), such signage is not found either above the road on the traffic signal mast arms or on side-mounted poles. In (B) and (F), no signage either leads to or identifies the public parking lot shown.

Source: Walker Consultants, Google StreetView

PARKING GUIDANCE & WAYFINDING SIGNAGE RECOMMENDATIONS

In light of the above findings, and taking into account the best practices described previously, Walker makes the following high-level recommendations to improve the static parking guidance and wayfinding signage system in the Heritage District.

1. **Establish and formalize a nomenclature or identification scheme for all public parking assets**

   As a first step, Gilbert should have a formal system for identifying its parking assets that is both internal and public facing. This will streamline understanding of public parking assets for operational purposes as well as for marketing purposes. For instance, web-based informational material on the Town's website or on Heritage District businesses' websites can furnish detailed and specific parking instructions that make common reference to certain specific parking lots or facilities in a consistent manner.

   Throughout the Existing Conditions and Future Conditions sections of this report, Walker utilized its own facility ID names for each off-street lot studied. However, a formal public parking naming/ID scheme does not need to follow this strategy. Parking assets can be numbered, assigned a letter or color, or be given a full descriptive name.

   Gilbert should have a formal system for identifying its parking assets.

   A cohesive scheme should also take into account future parking structures and new or reconfigured surface lots as existing surface lots are removed, and the Heritage District is built out. While a lettering or numbering scheme can be straight-forward and simple, the system can become confusing once lots start being removed if the lots aren't renumbered or re-lettered accordingly so as to ensure no skipped numbers or letters.

   To that end, Walker feels that a public-facing naming scheme that makes use of short, descriptive names (e.g., "Ash and Vaughn Lot," "Cullumber Lot South," et cetera) be considered. Alternatively, or in conjunction, a color-based scheme can be used, as colors do not necessarily follow a hierarchical order like letters or numbers do.

2. **Install parking facility destination/identification signage**

   Once a particular naming/identification scheme was chosen, the Town could then install simple pole-mounted parking destination sign blades at all parking lot and structured parking entrances that identify the facility as public parking with its respective assigned name, color, number, or letter. Such signage would have a unified and consistent font, color, and messaging scheme, in accordance with the best practices described herein.

   In addition, Walker recommends that supplemental signage in the same family be installed at the entrances or on the facades of the two parking structures. While existing signage is large, internally lit, and easily visible, supplemental static signs could serve to buttress understanding that the structures are public parking and belong to the Town's overall public parking system.

3. **Install MUTCD-standard parking guidance signage at key locations**

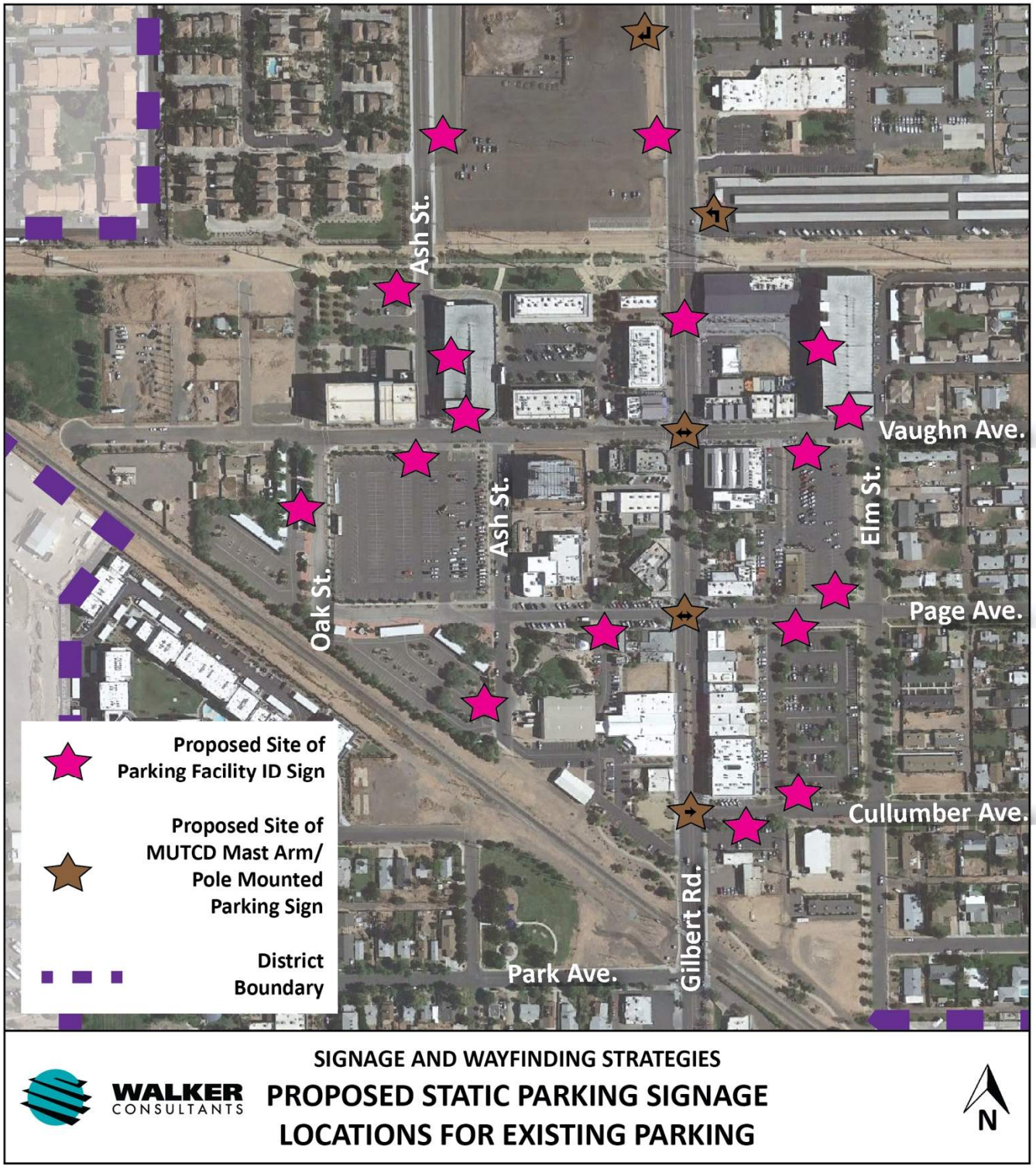
   While public parking facilities may have a unified, custom signage scheme, Walker nonetheless recommends that supplemental, generic parking guidance should be in the form of standard, MUTCD-specified signage. This signage would replace existing non-standard signage where it is not serving to identify the parking facility entrance.

   Given the fact that all public parking is within two blocks of Gilbert Road on either side, parking destination ID signage would be mostly sufficient to provide guidance as well as identification. Where it is not sufficient, however, supplemental signage is appropriate. For instance, while the entrance to the temporary gravel lot north of the trail may have a custom destination ID sign, there may be a sign along Gilbert Road after the intersection with Juniper going south, a hundred feet or so before the turn-in, that indicate that public parking is straight and to the right. That sign would be a standard MUTCD sign.

   Walker recommends that such signage be placed overhead on the traffic signal mast arms along Gilbert at the intersections with Vaughn, Page, and Cullumber Avenues, indicating that public parking is to the right and left from both the north and south approaches. At Vaughn, such signage could supplement or reinforce recommended automated parking guidance signage for that intersection, further described in the next section. This signage would be highly visible as well as affordable to install, as the mast arms are already in place.

Figure 45 on the next page illustrates proposed or potential locations for new parking facility ID signage as well as new MUTCD parking guidance signage as tailored for the parking system as it exists at the time of this report.

Figure 45: Proposed Static Parking Wayfinding and Signage for Existing Parking System in the Heritage District



Source: Walker Consultants, Google StreetView

COSTS & MAINTENANCE

All the costs associated with the recommended static signage are up-front in nature, as such signs require little to no maintenance. Parking destination signage that incorporates some degree of customization or branding would likely be around $1,000 a sign, including installation, considering that most of this signage would likely need to be mounted onto new poles. MUTCD-spec parking guidance signage to be installed on traffic signal mast arms would be cheaper, around $500 a sign, including installation.

Table 55 illustrates costs associated with recommended signage. Note that these costs are for implementing a full suite of signage for the existing parking system. Lots closing in the short term for construction may not need permanent signage if the parking is to be replaced by private parking.

Table 55: Static Signage Components, Quantity, and Probable Costs for Heritage District

Sign Type	Quantity	Unit Opinion of Probable Installed Cost	Total Probable Installed Cost Range	Notes and Caveats
Parking Facility ID Signs for All Existing Parking Garages & Lots (Including Gravel Lot North of Trail)	17	$1,000	$17,000	Assumes some degree of branding/customization for each destinations sign
MUTCD-Style Parking Guidance Signage (Mounted on Either Signal Mast Arms or Poles)	5	$500	$2,500	Assumes signs could be mounted on exsting trafic signal mast arms where possible.
		Total Probable Installed Cost	**$19,500**	

Source: Walker Consultants

AUTOMATED PARKING GUIDANCE SYSTEMS (APGS)

As important as static signage is, the effectiveness of static signage, including the type and dynamic nature of information conveyed, are limited. In the context of parking, the next level of wayfinding is automated parking guidance. Automated parking guidance systems (APGS) are automated information networks that provide parking availability and directional guidance to motorists. An APGS utilizes dynamic variable message signage to display occupancy information and/or directional arrows at key decision points so that motorists know what to expect and where to find parking as they drive to or through a garage or surface lot parking facility.

There are three basic types of APGS for a parking facility, each of which communicates a different level of detail. These types are, in order of complexity:

1. **Systems that communicate the occupancy status of the parking facility (garage or surface lot).**

   This type of system, also called a facility-status system, is used to communicate the total number of parking spaces available to motorists before they enter a parking facility. Within this, there are two sub-types: systems that only alert when a parking structure is full or not and systems that indicate vacancy status along with the approximate number of vacant spaces in total at a given time. These types of systems can be deployed both inside a garage as well as in surface lots. They can drive signs not only at

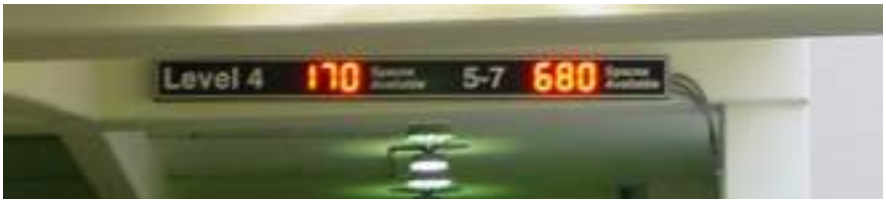
each parking facility or can also drive signs at major intersections and along key corridors to allow motorists to make the decision to park off street as soon as arriving in the Heritage District, saving them from having to navigate to a parking structure or surface lot and also from having to circulate through a parking facility in order to find a parking space that may not be available.

A facility-status system is used to communicate parking availability to motorists before they enter a facility. Count modules, (loops, cameras, magnetic sensors, or ultrasonic sensors) monitor the number of vehicles that enter and exit the facility to maintain an overall count of vehicles in the facility. Parking access and revenue control (PARCS) equipment installed in the facility can keep a count of monthly parkers, transit parkers that pull a ticket, and outstanding reservations to display only the available public parking spaces using already installed loops. This count data can be sent to dynamic signs through either a hard-wired communication line or by using cellular data communications. Facility counts tend to lose accuracy, so it is important to check the count displayed against the number of spaces occupied in the garage. Adjustments may be required periodically to ensure an accurate display. More modern APGS counting sensors such as cameras (like the McCain OptiPark system currently equipped in the Heritage II garage) tend to offer much better accuracy than older methods such as loops and accordingly require significantly less frequent recalibration.

Dynamic signage (typically LED in modern installations) displays the number of available spaces and/or color-coded messages such as “Full” in red, or “Open” in green. The newest signs have begun to move towards full LED screens, where flexible messaging including text and graphics can be displayed, as the unit cost of such systems has decreased notably

2. **Systems that communicate the number of spaces available by level (multi-story garage only).**

The second type of system, applicable to multi-story garages only, allows users to see how many available spaces are available on each floor of the garage. This type of system provides an extra level of detail for the driver entering a parking structure, allowing them to know beforehand what level they need to circulate to in order to start looking for empty parking. This can make overall circulation during peak times more efficient, as people will typically avoid bothering to search for an empty space on a parking level with little to no availability. While useful inside and immediately on the outside of a garage entrance, this level of detail is ineffective at the street corridor/district perimeter level.



3. **Systems that communicate whether each individual space is occupied or vacant in real time (garage or surface lot).**

The third type of system displays the exact location of available spaces within a parking garage or surface lot through the use of overhead signage and/or indicator lights.

In a parking garage setting, such systems can either have one row of lights for each drive aisle or one

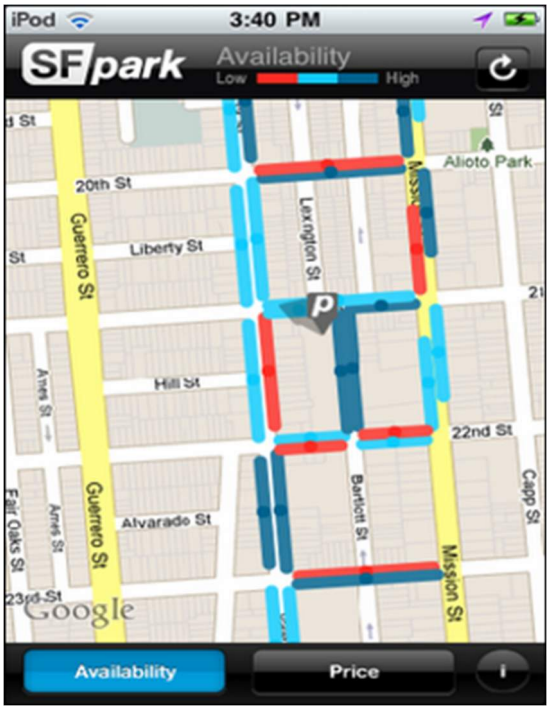
row for each column/row of parking spaces. Drive-aisle-type systems are typically more affordable, as one row of lights can display the status for respective spaces to the left and to the right. While traditionally these systems either display red for "occupied" and green for "available," more recent systems may instead simply turn the light off when a space is available. When using multi-colored light emitting diode (LED) lights, the light can be any color, not just red or green. This allows the system to display, for instance, the location of accessible spaces with a blue light, so that persons needing accessible spaces can navigate right to where they need to go.

In a surface lot setting, it is not currently possible to have a single space indicator light over every parking stall. However, some APGS's are available with elevated signs mounted on luminary poles that show the number of spaces available in sectors or sub-areas of the lot. Also, some system can drive mobile applications which show available spaces in real-time overlaid on a map of the surface lot.

This type of system (known as a single space individual space APGS), while becoming more affordable and popular with each passing year, only yields additional utility/information for the end user in parking facilities with flat floors and/or circulation patterns that do not force the user go drive by every space as they circulate through a garage or surface lot. Even if those conditions are met, this level of detail is typically only useful in facilities that see very high occupancy, so that vacant spaces can be easily and quickly identified, thus resulting in a very high effective supply and usage efficiency.

APGS RECOMMENDATION: FACILITY-STATUS SYSTEM

The Heritage District is a large parking system consisting of two large public parking structures and many surface parking lots, with more to be constructed in the future. Also, it covers a relatively large, dispersed land area consisting of many blocks. Both structures have uncomplicated traffic circulation patterns, with only one drive aisle threading each structure. Therefore, vehicles circulating to locate parking must drive by parking spaces in a linear, consecutive order, without the option of bypassing aisles entirely if there is not an open space as they make their way up the structures' ramps. Finally, both structures are standalone structures, with pedestrian ingress and egress points only located on the ground levels.



Given those factors, Walker recommends that the Town consider the use of the first type of system described above, a facility-status system, for its parking structures. Most of the informational value to motorists will be in knowing which parking facilities have vacancy. This information will allow motorists to bypass full or nearly full facilities. Information on a more granular level within the structures would not be particularly useful or yield any additional efficiencies in trying to locate parking.

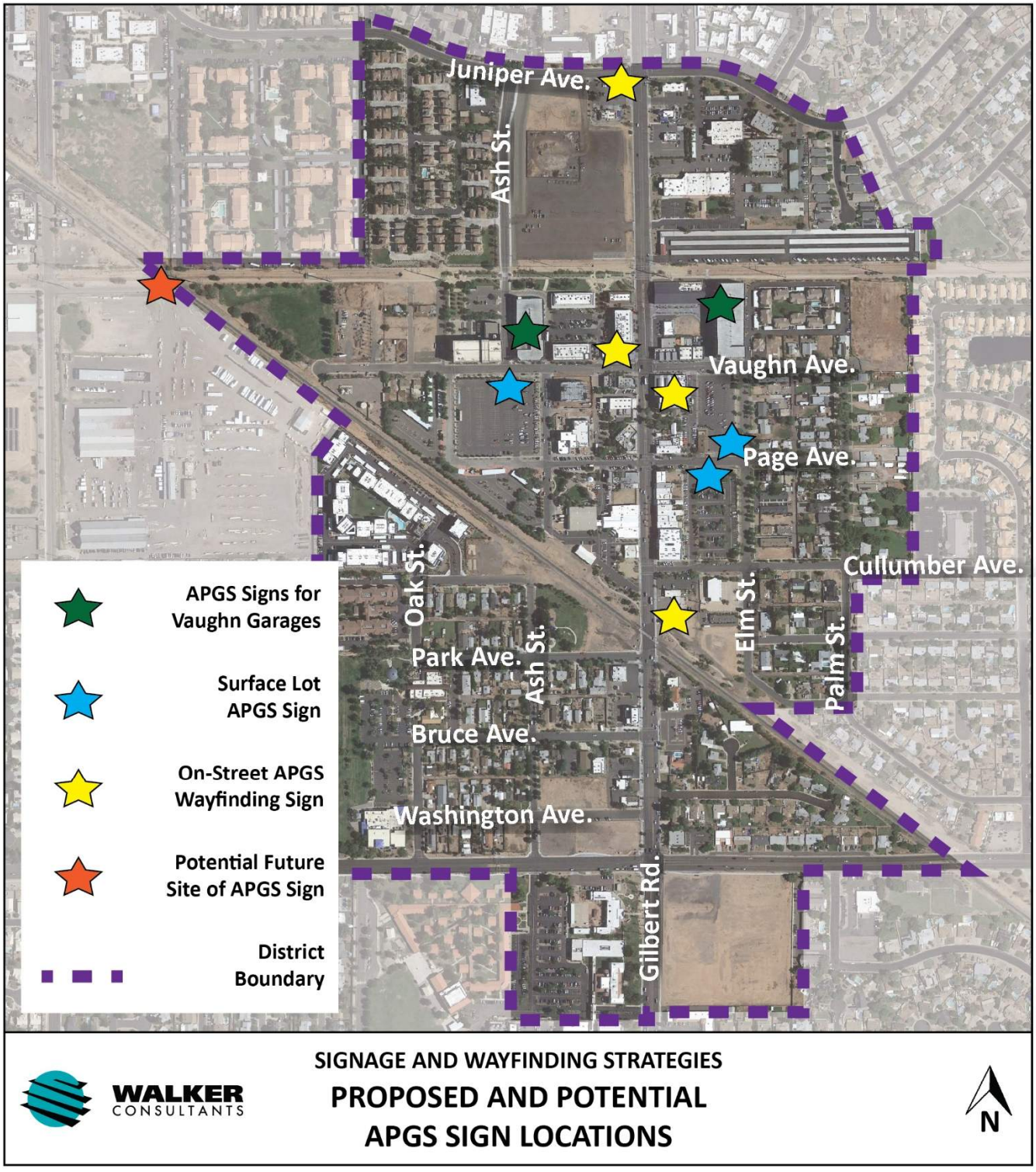
Facility status signs located along Gilbert Road can communicate the appropriate level of information needed for visitors who have just entered the District from either end, and they can display basic facility status information for all Town public parking garages, or optionally some large surface lots as well, on one sign.

With a facility-status system, signs don't have to be customized for each individual parking facility, with one sign type and informational legend being appropriate for all such signs that are installed within the District. Optionally, signs can be installed at the entrances to each parking facility, in addition to along Gilbert Road and elsewhere.

Given the limited number of non-local access points into and out of the Heritage District currently (Gilbert Road), only a handful of facility-status APGS signs would be needed currently. Walker recommends that, for now, such signs be deployed along Gilbert Road at the north and south ends of the District, facing towards southbound and northbound traffic respectively. Also, two additional APGS signs should be deployed at the intersection of Vaughn and Gilbert Road, as this intersection serves as both the heart of the high-activity areas of the District. Both existing parking structures can be accessed from Vaughn Avenue.
In the future, a fifth sign could be deployed along the Vaughn Ventilator facing towards south/eastbound traffic. Walker recommends that such signage be designed in order to accommodate up to six public garages, in order to account for the third structure that is outlined in the CIP, as well as future structures or underground facilities planned for the Transit Center, Living Room Plaza, and other areas.

Figure 46, on the next page, illustrates the proposed and potential locations for APGS signage.

Figure 46: Proposed and Potential APGS Signage Locations in the Heritage District



Source: Walker Consultants, Google Earth

Figure 47 demonstrate various examples of facility-status APGS signage.

Figure 47: Examples of Facility-Status Type Guidance Signs

The above images are various examples of facility-status signage from across the country. The images at top are from private developments/shopping centers in Miami (A), Liberty Center, OH (B), and Lincoln, NE (C). The bottom images are from public downtown parking systems in Omaha, NE (D) Asheville, NC (E), and Redwood City, CA (F).

Note the varying complexities, with the first two showing simple availability figures for a single garage, the third displaying availability for multiple garages as well as incorporating shopping center business wayfinding, the fourth incorporating a full variable message LED sign capable of displaying dynamic rates along with number of open spaces, and the fifth being a fully flexible, full color, edge-to-edge LED panel sign showing a temporary custom Town message.

Source: Walker Consultants

COSTS AND MAINTENANCE

Costs can vary widely. However, for Gilbert, the data infrastructure to obtain the aggregate parking availability has been already installed in the Heritage II Vaughn Avenue garage. Additional APGS systems would be needed in the Heritage I (Vaughn West) Garage and in selected surface lots for which the Town wants to track and display parking occupancy data.

Facility counting APGS for a garage may cost in the range $25,000 to $50,000, depending on the number of entry/exit plaza, number of nested areas (such as the valet area in Heritage II), and the type and number of local signs selected. Level counting and single space counting systems will cost accordingly more. If facility counting APGS are needed for two garages (Heritage I and a future 3rd garage), the total cost may be in the range of $50,000-$100,000.

Facility counting APGS for surface lots may cost in the range of $30,000 to $80,000 per lot, depending on the number of entry/exit plazas and lanes, the number of stalls in the lot, and the type and number of local signs selected. Systems that can track the occupancy of each space and support additional signs internal to the lot will be somewhat more expensive. It is important to understand that surface lot APGS accuracy will be easier to achieve with more modern camera-based systems using elevated cameras mounted on luminary poles. These sort of systems, while initially more expensive, will tend to provide more accurate results over time. Some vendors of such systems are providing low up-front costs in exchange for ongoing Software-as-a-Service (SaaS) fees. If surface lot APGS are equipped in 3 of the existing Gilbert public surface lots (perhaps the lots adjacent to the Vaughn Avenue garages), the total cost may be in the range of $90,000 - $240,000.

Once the internal infrastructure framework for obtaining raw data from garages and surface lots has been established, the added cost to the parking system of installing on-street facility-status type guidance signs is mostly comprised of the signs themselves, any new sign mounting structures if existing structures cannot be used, infrastructure required to send data and power to those signs, and wayfinding signage control software. Some level of active maintenance, in the form of periodic calibration of the counts to ensure the data remains accurate, will be required for the sign network.

Assuming a standalone sign (pole, cabinet, and two dynamic inserts with space for up to six), our high-level opinion of material cost is $8,000 - $10,000 per sign location, plus on-going costs for sending data to remote signs using either cellular data or a Wi-Fi enabled device and installation.

With a projected installation cost of between $8,000 - $10,000 per sign, assuming existing poles can be utilized, the total cost of each sign would range from between $12,00 to $15,000. If any of these signs require new poles and pole foundations due to the inability to utilize existing traffic or luminary poles, the projected installation cost is likely to increase to the range of $15,000-$20,000 per sign due to additional engineering design and installation labor costs. Therefore, we recommend that signs be placed on and powered from existing poles whenever possible.

Lastly, some form of Wayfinding Signage Control software will be needed to aggregate and control the content of the wayfinding signs. For example, the available spaces counts from multiple lots east or west of Gilbert Rd. may need to be aggregated for purposes of the signs located on the Gilbert Road approaches to downtown.

Typical costs for such Wayfinding control software may be as low as $0 (because some vendors include this software bundled within their APGS cost) and as high as $40,000.
For a minimum of four signs (two along Gilbert Road and two at the Gilbert/Vaughn intersection), the total cost range for Heritage District APGS would thus be as summarized in the table below.

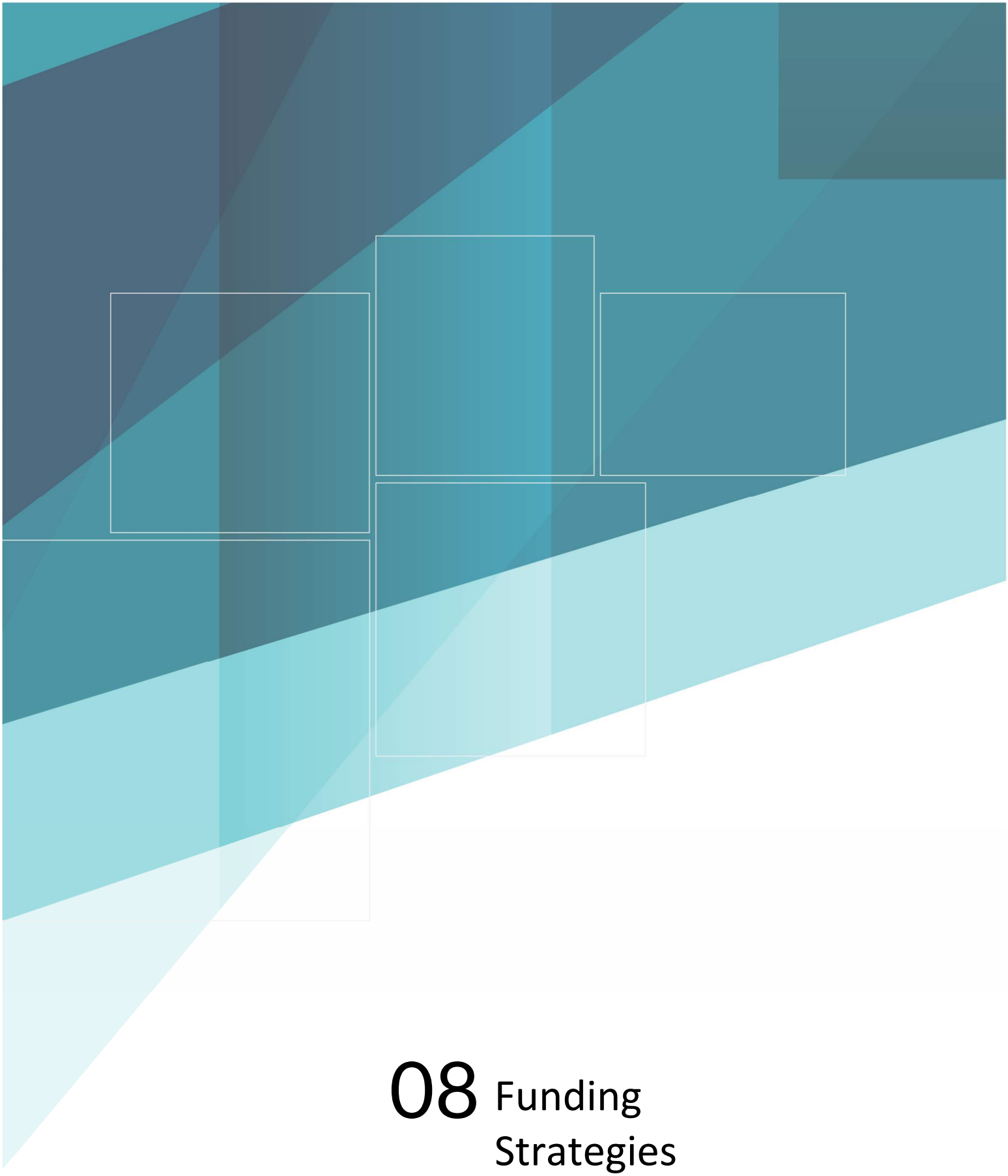
Additional dynamic display areas can be added to the sign or the signs can utilize fully flexible edge-to-edge full color LED panels, albeit at an increase in cost. This can allow variable messages to be displayed to advertise current or upcoming events. Such added capabilities will typically increase the signage cost in the range of 50% depending on sign size and technology chosen.

Table 56 illustrates a range of probable costs for different proposed or potential APGS components for the Heritage District given the existing parking system and street network.

Table 56: APGS Components, Quantity, and Probable Costs for Heritage District

APGS Component	Quantity	Unit Opinion of Probable Installed Cost	Total Probable Installed Cost Range	Notes and Caveats
APGS for Vaughn East and West Garages	2	$25,000-$50,000	$50,000-$100,000	Assumes facility counting APGS similar to already installed in new Vaughn East Garage
Surface Lot APGS for 3 Surface Lots near Garages	3	$30,000-$80,000	$90,000-$240,000	Assumes modern camera-based surface lot APGS systems are selected.
Wayfinding Signs	4	$12,000-$15,000	$48,000-$60,000	Assumes 2-color-2-module basic digit signs mounted to existing poles
Wayfinding Sign Control Software	1	$0-$40,000	$0-$40,000	Some vendors bundle this with above APGS costs.
Total Probable Installed Cost			**$188,000-$440,000**	

Source: Walker Consultants



08 Funding Strategies

FUNDING KEY TAKEAWAYS

Establishing a new managed parking program will generate costs associated with the program's operations, maintenance, and potential future investments. Based on the Town's overarching goals for the parking system, there are several options for its funding. While these options are presented and discussed individually, they may be layered and applied in partnership with one another as appropriate to meet the Town's and parking program's objectives. For example, daily operations and enforcement may be funded through a mill levy associated with a parking benefit district, while capital investments in technology and new parking facilities are financed through a general obligation bond.

Alternatively, a parking enterprise may charge user fees through paid parking for the system's daily operations and to build a reserve for future parking supply additions, with rates that are reduced and subsidized through the use of revenue bonds to fund a portion of the future capital investments in supply and technology. A specific recommendation for a funding source or combination of sources is not presented here to allow the Town opportunity to identify their goals for the program and consider the option or options that most closely meet its needs.

Table 57: Funding Strategies for Operations, Maintenance, and Capital Investments

Funding Mechanism	Potential Advantages	Potential Disadvantages
Conventional Debt Financing	Do not require voter approval to obtain	Typically has higher interest rates
		Rigorous lending process with additional financing costs
General Obligation Bonds	Supported by the General Fund, revenue stream for repayment does not typically fluctuate annually	Requires voter approval to obtain
Revenue Bonds	Supported by the revenues generated by the parking system	Typically higher interest rates to new, unproven revenue streams
	Parking for a specific project or district is not subsidized by all taxpayers through the General Fund	Requires sufficient revenue stream from parking system for repayment which generally requires implementation of paid parking
	Does not require voter approval to obtain	
Parking Benefit District	Supported by revenues generated by the parking demand generators	Additional administrative and management costs
	District revenue is used to finance district improvements	Revenue must remain within the district, which may impact other municipal priorities
	Governing body oversight	Revenue can fluctuate from year to year based on seasonal demand and overall health of the economy

Continued on next page

Funding Mechanism	Potential Advantages	Potential Disadvantages
Payment in Lieu	Increases options for developers to meet requirements for new projects	Reduced on-site parking and convenience for customers
	Shared parking facilities reduce parking footprints to maximize land use intensities for both property owners and property tax values	Spaces are not guaranteed to businesses – a payment in lieu of parking offset the usage of the public facilities by projects that do not provide their minimum requirement of parking but it does not guarantee a space in any specific facility will be available for that project's parking patrons.
	Reduced variance requests	
	Maintenance of the districts character and improved urban design	
Development and Lease Agreements	Reduced cost to increase parking supply	Lease terms may be unfavorable to municipal agency
	Can provide temporary increases in parking supply when long-term supplies are not necessary (i.e., temporary displacement of parking during project construction)	Parking supplies are not secure and can be significantly reduced in relatively short periods of time if the lease renewal is denied
Auxiliary Enterprise Fund	Parking revenues separated from the General Fund	Revenue can fluctuate from year to year based on seasonal demand and overall health of the economy
	Generally managed by an experienced municipal parking administration	Parking system goals may align with business needs of the system more than the economic support of the district
	Does not create new political entities	
Parking Authority	Can issue own debt and not count against bonding capacity of the Town	Redundant costs of management and administration
	Provides a structure with a sole focus on parking–related issues	Higher rates of borrowing than a municipality issuing general obligation bonds
	Significantly reduced political pressures compared to municipal parking department	
	Not subject to annual budget considerations of municipal government or politics	Authority has power that is beyond the immediate control of the citizens
	Self–sustaining	

Source: Walker Consultants

SECTION 8 – FUNDING STRATEGIES

Establishing a new parking program provides the Town of Gilbert the opportunity to develop their policies and procedures around their goals and guiding principles early on. With this goes the funding of the program's operations, maintenance, and potential future investments. Based on the overarching goals of the parking system and the Town, there are additional options to fund an active parking management program aside from user fees (paid parking). While the options are presented below and individually discussed, it should be noted that funding options may be layered and applied in partnership with one another as appropriate to meet the Town's and parking program's objectives.

CONVENTIONAL DEBT FINANCING

When an established public or private entity needs capital to fund a parking project, a bank or conventional loan may first come to mind. Conventional loans are loans that are not insured or guaranteed by a government agency. This method of obtaining funds for a capital improvement project involves a lending process that is often rigorous and may result in higher financing costs incurred by the borrower. Banks want to lend to parties that have a clear record of profitable operations, that generate a cash flow sufficient to repay the loan, and that have enough collateral or assets to secure the loan. Conventional financing requirements include a clean credit record and no bankruptcies or foreclosures.

Advantages:

- Do not require voter approval to obtain

Disadvantages:

- Typically has higher interest rates
- Rigorous lending process with additional financing costs

GENERAL OBLIGATION BONDS

General obligation bonds will generally obtain the lowest possible interest rate or cost of borrowing for any given municipality. Because the full faith and credit of the municipality is pledged to such bonds, the rate of interest will reflect the best that the community has to offer. The primary way for a municipality to improve on its own full faith and credit pledge to a bond issue is to purchase municipal bond insurance.

A general obligation bond is a bond that is secured by a pledge of the issuer’s taxing powers (limited or unlimited). More commonly, the general obligation bonds of local governments are paid from *ad valorem* property taxes and other general revenues. Considered the most secure of all municipal debt.

Care must be taken when issuing general obligation bonds to finance parking facilities. The public purpose provisions of the tax law must be observed to preserve the tax−exemption of the bond issue. Moreover, the issuance of general obligation bonds results in at least one significant implication. Most states have laws that restrict the amount of general obligation debt that can be issued by municipalities. General obligation bonds count towards the outstanding statutory debt of the municipality.

Therefore, prior to issuing general obligation bonds for a parking project, the municipality must determine whether the available bonding capacity is sufficient to fund the parking project and also to support any outstanding bonding requirements which the community may be facing. Other competing priorities may dictate that the municipality's management must seek parking project funding other than general obligation bonds.

Advantages:

- Supported by the General Fund, revenue stream for repayment does not typically fluctuate annually

Disadvantages:

- Requires voter approval to obtain

REVENUE BONDS

When revenue bonds are issued to finance a parking project, the bond issuer pledges the revenue generated by the parking project to the bond holders. Revenue bonds are payable only from specifically identified sources of revenue, including pledged revenues derived from the operation of the financed parking facility, grants, and excise or other taxes. Parking revenue bonds secured solely by the revenues from a single, stand−alone, municipality−owned parking facility are acceptable at a reasonable tax−exempt rate only when irrefutable evidence is presented to indicate the existence of a stable demand generator that is anticipated to produce suitable debt service coverage from net revenues. Municipalities and other public organizations often benefit from issuing parking revenue bonds since the full faith and credit of the issuer is not pledged. However, revenue bonds traditionally carry a higher interest rate than general obligation bonds. Revenue bonds also differ from general obligation bonds in that general obligation bonds are backed by a municipality's ability to levy taxes. In comparison, user fees back revenue bonds. Special authorities are frequently created for the purpose of issuing parking revenue bonds.

Advantages:

- Supported by the revenues generated by the parking system
- Parking for a specific project or district is not subsidized by all taxpayers through the General Fund
- Does not require voter approval to obtain

Disadvantages:

- Typically higher interest rates to new, unproven revenue streams
- Requires sufficient revenue stream from parking system for repayment which generally requires implementation of paid parking

PARKING BENEFIT DISTRICTS

A parking benefit district typically addresses a selection of issues directly related to parking. In cases where the municipality is the sole provider of parking, the collection of fees tends to be applied in a uniform manner on an assessed value basis or as a fee per space based on zoning parking standards or requirements, and typically with a partial exemption for parking spaces provided above a threshold percentage. Typically, no commercial property is 100 percent exempt unless its owner provides 100 percent of the parking requirements mandated through the zoning ordinance within the district. Single−family residential property is usually exempt, but multi−family apartments usually are not exempt.

CASE STUDY
PARKING BENEFIT DISTRICTS

Old Pasadena, California established their on-street parking rate to maintain a goal vacancy of approximately 15%, utilizing revenues generated from the fees to purchase street furniture, trees, light fixtures, and to provide maintenance of the parking spaces and street cleaning within the district.

Boulder, Colorado established their parking benefit district over forty years ago. Today, the District does not allow any private parking supply to be built within the boundaries, instead relying on their SUMP principle. The SUMP principle requires all parking within the District to be shared, unbundled, managed, and paid. Revenues not only provide all parking facilities' operations and maintenance, but free bikeshare and carshare memberships and regional transit passes for District employees and residents. The District owns several land parcels, or land banks, which are leased and provide potential future parcels on which to build park when needed.

Advantages:

- Supported by revenues generated by the parking demand generators
- District revenue is used to finance district improvements
- Governing body oversight

Disadvantages:

- Additional administrative and management costs
- Revenue must remain within the district, which may impact other municipal priorities
- Revenue can fluctuate from year to year based on seasonal demand and overall health of the economy

PAYMENT IN LIEU

An in-lieu fee program provides an opportunity for developers to pay into a fund for downtown-wide parking amenities in lieu of providing on-site parking. In-lieu fees work best when:

1. **They are consistently utilized.** A successful and robust in-lieu fee program generally requires a strong clip of new development in a community, or a given area within a community. Beyond that, a successful program requires consistency—meaning that many developers opt for the in-lieu fee program rather than constructing their own parking.

2. **The Town is prepared to manage, or is already managing, the majority of public parking resources.** With traditional parking provision, wherein individual developments are required to provide their own parking, said parking resources are managed by those private entities. However, in-lieu fee programs necessitate publicly managed parking, generally operated by the Town itself or through a contract executed and paid for by the Town.

3. **There are sufficient public parking resources to accommodate demand.** Even with an in-lieu fee program, new development will still add significant demand to the parking system. As such, it is essential that the parking system have enough space to accommodate new demand, and that there is a clear plan for adding new inventory to the system as development and demand increase.

Parking in-lieu fees are frequently tied to the "replacement cost" of a parking space in the associated community—meaning the actual labor and material cost to construct. However, setting an in-lieu fee is a quite complex and often political process, including the following components:

Replacement Cost: The first step in evaluating an appropriate in-lieu fee is to identify the construction cost per parking stall within the community. While parking construction costs vary widely based on the type of parking constructed, and other architectural and structural decisions made by the community, they generally range from $8,000-$12,000 per space for surface parking, $18,000 - $25,000 for above-grade structured parking, and $28,000 - $32,000 for below-grade surface parking, excluding land acquisition and soft costs.

Subsidization Rate: If a community were to charge actual replacement costs as the in-lieu fee without any adjustments, it does little to incentivize participation among developers. Furthermore, if the in-lieu fee were a requirement rather than an option, too high of a fee can deter development entirely. As such, it is essential for a community to consider an appropriate subsidization rate of replacement cost based on development pace and the goals of the Town. For example, if the goal were to deter or slow the pace of development, the Town might choose to subsidize replacement cost at a low rate, or even not subsidize at all. Conversely, if the goal were to fundraise for capital improvements or O&M costs, or to encourage the use of public parking resources over adding more private resources to the parking system, the community might choose to heavily subsidize (generally at a rate of 20% to 50% of replacement cost).

Boundaries: Especially in communities with a range of development patterns, in-lieu fees rarely apply to an entire municipality—rather, they are a requirement or an option for development within a specific boundary. This boundary typically correlates with a community's zoning map, wherein development

within certain zoning designations (or, in some cases, a "downtown zone") would be deemed eligible. In the Town of Gilbert, this might include zoning designations that exclusively occur within the Heritage District, such as the Heritage Village Center (HVC) zone.

Capital and Ongoing Priorities: Intuitively, a fee must also relate to its associated costs. In this case, those costs would primarily include parking operations and maintenance, but could also include prioritized capital costs, or even comprehensive mobility and transportation demand management (TDM) initiatives.

Advantages:

- Increases options for developers to meet requirements for new projects
- Shared parking facilities reduce parking footprints to maximize land use intensities for both property owners and property tax values
- Reduced variance requests
- Maintenance of the districts character and improved urban design

Disadvantages:

- Reduced on-site parking and convenience for customers
- Spaces are not guaranteed to businesses – a payment in lieu of parking offset the usage of the public facilities by projects that do not provide their minimum requirement of parking but it does not guarantee a space in any specific facility will be available for that project's parking patrons.

DEVELOPMENT AND LEASE AGREEMENTS

Municipal and corporate leaders are increasingly faced with the issue of whether or not they should enter into the parking business by constructing, financing, and operating their own parking facilities. In most cases, the capital required to develop and operate a parking facility is the prevailing barrier to entry. The financial paradox faced by decision−makers is the need to allocate funds for core operation improvements to sustain and grow demand, while at the same time, fund parking expansion projects that are needed to operate. More often than not, funding a parking expansion project is determined to be subordinate to core operation improvements.

Faced with parking issues, many industry leaders are recognizing the advantages of eliminating parking from their balance sheets and focusing on their core business. This is accomplished through a development leaseback agreement that provides an alternative method of ownership, investment, financing, and risk allocation to organizations that need parking, but face financial limitations. It is a financial tool that can allow a business or agency to expand parking operations, reduce long−term risk, and redirect capital funds from parking to core operations.

When a local agency enters into a development leaseback arrangement (thereby becoming the leasee), it may lease a facility from another public agency, a nonprofit corporation set up for that purpose, a bank or private leasing company or a joint powers authority. This lessor assigns all its rights in the leased parking facility to the lessee or trustee and acts as an intermediary between the local agency and the investors. The trick to leasing is finding someone who is willing to invest in the return from the agency's lease payments. This may be a single investor or, more frequently, a group of investors who have purchased undivided shares of the lease obligation

(these shares are called “certificates of participation”). The lessee is given use of the property as though he owned it, without having capital invested in it.

The lease is typically a long−term “net” lease, with the leasee having the option of repurchasing the parking facility at a later time. The tenant, who previously owned the property, normally has the right at any time during the lease to buy back the parking facility, based upon a predetermined value or method of valuation. However, it is most advantageous to do so at the end of the lease, when the purchase price could be a nominal amount. Terms usually are for 15 to 20 years with options to include up to four five−year renewal periods.

Development leaseback agreements offer several advantages over other financing methods. First, an agency can obtain a parking facility without a large initial investment. Second, a lease can be used to spread the cost of a parking facility over a long period of time. Third, lease agreements do not add to agency debt. Fourth, in many cases voter approval is not a requirement as it would be with special taxes and some types of bonds. Fifth, leaseback deals can also provide the leasee with additional tax deductions, if applicable. The lessor benefits in that they will receive stable payments for a specified period of time.

Using lease financing is not without its drawbacks. The agreements necessary to finance public and private parking facilities are complicated, and involve numerous players such as bond counsel, underwriter, and trustee. Leasing, because of the uncertainties of the market and annual allocation of payments, may require higher debt payment than bonds to attract investors. Additionally, because leases are designed to be tax−exempt investments, their popularity and marketability is susceptible to changes in federal or state tax law. Also, it may be difficult to find credit worthy investors for some leases. Unlike special assessments or taxes, a lease by itself does not generate funds on its own and requires another source of income, such as user fees, to retire any debt.

Advantages:

- Reduced cost to increase parking supply
- Can provide temporary increases in parking supply when long-term supplies are not necessary (i.e., temporary displacement of parking during project construction)

Disadvantages:

- Lease terms may be unfavorable to municipal agency
- Parking supplies are not secure and can be significantly reduced in relatively short periods of time if the lease renewal is denied

CREATION OF AN AUXILIARY ENTERPRISE FUND

Universities often create auxiliary enterprise funds. These resources are then used to fund parking project capital improvements. By definition, an auxiliary enterprise fund is self−sustaining. This means that the auxiliary enterprise fund generates a revenue stream that is sufficient to cover ongoing operating expenses and outstanding debt service obligations.

Auxiliary enterprise funds have their own operating budgets. This operating budget is separate from the municipality’s general fund. These operating budgets include a stream of revenues collected from a variety of

sources, including monthly leases, parking meter revenues, parking violations revenues, and transient parking revenues.

Although revenues generated by a new structured parking facility may not be sufficient to fund both the operating expenses and debt service of that particular improvement, revenues from other facilities and sources are pooled together. This revenue pool is sufficient to generate an income stream that permits the solvency of the auxiliary enterprise.

Budgeted expenses include the operating costs associated with ongoing parking operations. This may include the labor costs associated with maintenance, security, parking enforcement, revenue collection, management, and administration. Other operating costs may include utilities, supplies, and equipment.

The lifespan of a parking structure can often range from 40−50 years or more. However, because the development costs for such a structure are capitalized over a 20−30−year period, there is significant useful life remaining after all debt is retired. This remaining life means that revenues may still be generated by this debt−free facility and that these revenues may be available to offset any new debt service payments that are required to fund new parking projects.

Advantages:

- Parking revenues separated from the General Fund
- Generally managed by an experienced municipal parking administration
- Does not create new political entities

Disadvantages:

- Revenue can fluctuate from year to year based on seasonal demand and overall health of the economy
- Parking system goals may align with business needs of the system more than the economic support of the district

CREATION OF A PARKING AUTHORITY

Parking authorities offer similar advantages gained through the creation of an auxiliary enterprise funds. One similarity is that parking authorities are self− supporting, meaning they generate operating revenues sufficient to cover both operating expenses and the debt service associated with any capital improvements.

Parking authorities have many of the same responsibilities similar to a municipal or a university parking and transportation department. Some of the responsibilities of a parking authority are included in the list below:

- To hire and compensate staff and manage authority−owned facilities.
- To set parking rates and collect revenues from authority−owned facilities.
- To establish and manage a budget.
- To acquire property through negotiations and if necessary, through eminent domain.
- To acquire existing parking facilities.
- To contract with third parties for services and the sale of real property.

- To sue and be sued.
- To fund parking facility capital improvements.
- To design, construct, and renovate parking facilities.
- To demolish and rebuild parking facilities.
- To develop and implement master plans for municipal parking.
- To define and implement parking management strategies aimed at improving traffic flow and parking conditions.
- To issue and retire debt.

Parking authorities have several distinguishing characteristics that make them different from municipal parking departments, including the following:

- Parking authorities are empowered to issue their own debt.
- Parking authority debt does not count toward the debt capacity of the municipality or university.
- Parking authorities can take action without approval from Town government; they can be completely independent and autonomous of Town government.

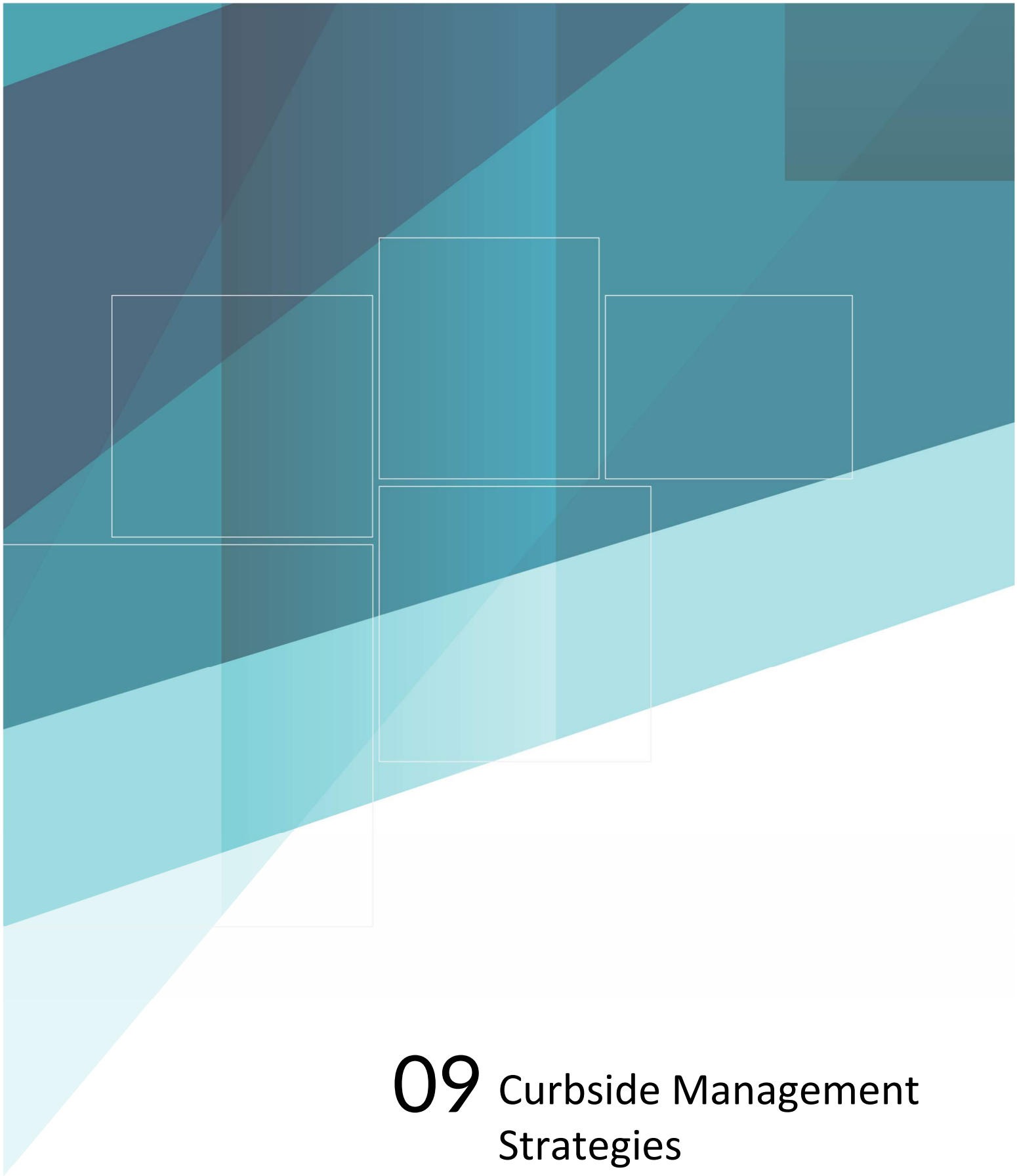
The following are some significant advantages and disadvantages of a parking authority:

Advantages:

- Can issue own debt and not count against bonding capacity of the Town
- Provides a structure with a sole focus on parking−related issues
- Significantly reduced political pressures compared to municipal parking department
- Not subject to annual budget considerations of municipal government or politics
- Self−sustaining

Disadvantages:

- Redundant costs of management and administration
- Higher rates of borrowing than a municipality issuing general obligation bonds
- Authority has power that is beyond the immediate control of the citizens



09 Curbside Management Strategies

WALKER CONSULTANTS

Heritage District Parking Master Plan

CURBSIDE MANAGEMENT KEY TAKEAWAYS

500 feet
Minimum radial coverage for bicycle parking

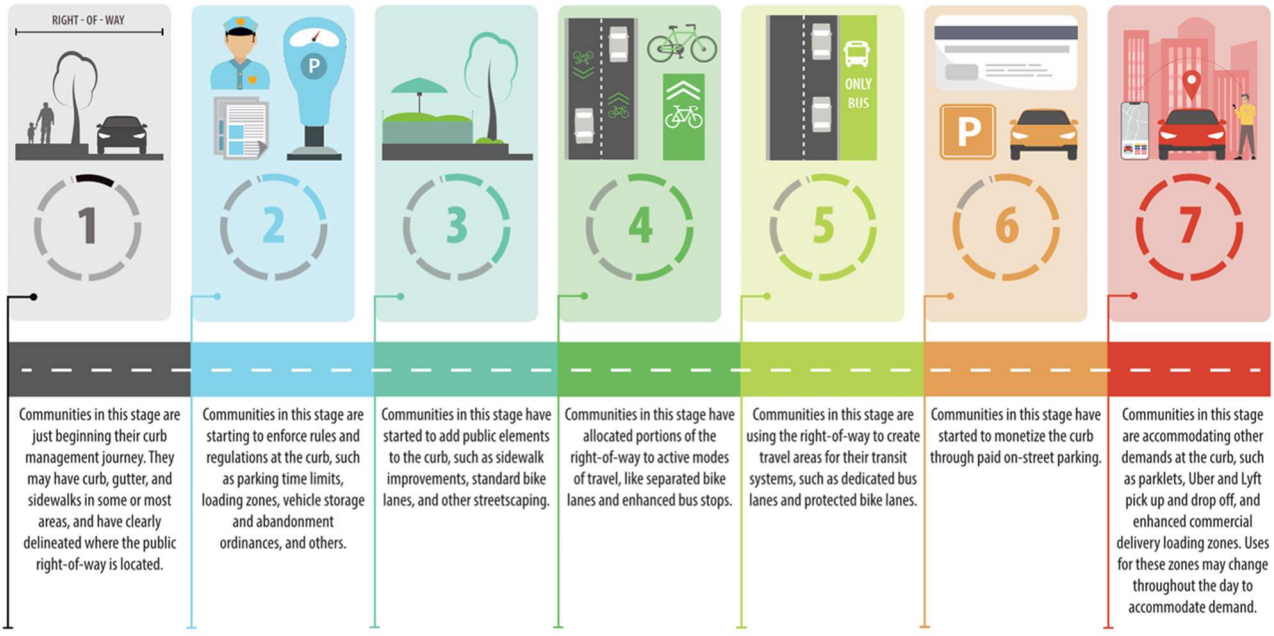
25 mph
Micro mobility device regulated max speed

21 feet
Average lineal feet for parallel parking, balance of curb lane can be used for alternative mode parking

Staging Best Practices for Special Events:

- Conveniently locating designated pick up and drop off areas
- Locating designated pick up and drop off areas away from parking facilities
- Minimizing pedestrian and vehicle conflicts
- Work with TNCs leading up to the event to establish geofenced designated pick up and drop off areas
- Utilize PIN number programs for large events
- Promote business-sponsored ride credits

YOU ARE HERE - THE CURB MANAGEMENT SCALE



SECTION 9 – CURBSIDE MANAGEMENT STRATEGIES

Curb management is any intentional practice to bring order to the curb and determine specific priorities for space. It refers to a broad and varied suite of tools and treatments. It can range from simple signage or striping distinguishing the public right-of-way from private property; to permanent changes to curb infrastructure like bus bulbs, queue jumps, or protected bike lanes; to computer-generated geofencing to designate pick-up and drop-off areas for Transportation Network Companies like Uber and Lyft and micro mobility options like Lime or Jump scooters.

The physical manifestations of curb management are dependent upon the size, context, and priorities of the community. **Figure 48** shows varying degrees of curb management, progressing from least active to most active curb management.

Figure 48: The Curb Management Scale

Source: Walker Consultants

A lack of curb management can result in negative consequences that impact the daily lives of a community's constituents. These include, but are not limited to, competing and conflicting demands for the curb space, congestion and a low level of service for all transportation modes, accessibility and safety issues, difficulty accessing the curb for public services and improvements, and an inability to effectively accommodate new and ever-changing transportation modes.

With active and intentional curb management, communities can make access more equitable among different modes of travel, improve level of service for all modes of travel, collect data on transportation behaviors, and potentially monetize the curb when it's a necessity.

Determining where curb lane management should be considered is typically based on where conflicting interests are most likely to occur. For instance, the curb lane in a residential neighborhood typically sees parking demand with limited bicycle usage, whereas a core business district might see demands for vehicle parking, bicycle and micro-mobility parking and/or travel, transit boarding and travel, loading, etc. Determining the appropriate prioritization of accommodation of the various competing modes should be based on data and the community's goals related to transportation. For instance, within the 2014 Town of Gilbert Transportation Master Plan, promoting the use of bicycles, providing a safe and aesthetically pleasing, walkable environment, and regional transit options are all identified to meet the needs of residents, employees and visitors, as well a transportation system that supports the Town's economic development through a multimodal approach.

Through the collection data, planners can quantify the demands of the various modes of transportation competing for the curb lane. Both quantitative data that demonstrates existing demands, and qualitative data that supports the preferences and challenges for the system. This data, analyzed in conjunction with the community's goals, can identify the tradeoffs and priorities of the managed curb lane, driving not only development and implementation, but ongoing decision making related to the changing needs of the community and curb lane. Along these lines, the Town has recently begun a study of passenger loading zones with the project RD2263 Heritage District Passenger Loading Zone Infrastructure.

While the personal vehicle has historically dominated the curb lane, in many places the curb is quickly becoming a hub for a variety of modes and services, such as:

- **Active loading.** Active loading includes the traditional demands of commercial freight and package deliveries as well as the growing demand related to transportation network companies (TNCs) such as Uber and Lyft. Active loading may also include the influx of on-demand delivery services providing store to door services for grocers, restaurants, and retailers. The increase in deliveries due to the rise in ecommerce has put added pressure and demand at the curb. It's estimated that ecommerce has caused delivery truck traffic to double in the past 10 years[10] due to an increase in shopping via sites like Amazon, and for hire delivery services such as DoorDash, Postmates, and Uber Eats.

- **Micro mobility**. Micro mobility is becoming less of a trend and more a mainstay in fulfilling short-distance trips. Scooters, bike share, and even electric mopeds provide travelers with a cellular device an on-demand and relatively low-cost option connecting a variety of locations. Micro mobility devices may be docked, geofenced or dockless, but because they are frequently banned from use on sidewalks,

[10] Curb Control, *Planning*, June 2019

vendors and cities are more frequently looking to move their storage into the curb lane to promote and emphasize their appropriate place in the transportation system for riders, as well as to reduce sidewalk congestion and conflicts with pedestrians.

- **Bicycles and pedestrians**. These modes remain dominant users of the public right-of-way, second only to personal vehicles. Many communities seeking to reduce traffic congestion and greenhouse gas emissions continue to prioritize these modes of travel due to the accessibility, reliability, and stakeholder preferences. Prioritizing bike and pedestrian modes of travel includes such components as bicycle parking and bike lanes, increasing shade trees along walking paths, and providing furniture for social gathering.

- **Transit**. Transit is an established alternative mode of transportation that contribute to curb lane demands to accommodate loading and unloading of passengers. In some areas, dedicated transit lanes increase the reliability and frequency of headways, reducing conflicts with passenger vehicles and providing for a freer flow of transit traffic. Prioritizing transit may also include providing enhanced transit stops, queue jumps providing transit a "head start" from passenger traffic at intersections, flexible curb lanes, bus bulbs to align transit stops with the parking lane, and right-turn pockets, among others.

- **Other uses.** These are uses that contribute to curb lane demand include parklets that extend café seating without encroaching of pedestrian pathways, food trucks and street vendors, and accessibility requirements for curb access and the various combinations of modes described above.

BICYCLE PARKING

Adequate bicycle infrastructure of safe travel ways and parking is necessary to promote biking as a viable alternative mode of transportation. Regardless of mode of transportation, the average person prefers a distance no more than approximately 500 feet from their parking or arrival point to their destination. Often, when bicycle parking is located out of this range, cyclists will park their bicycles at light poles, trees, and other objects. Similarly, lack of travel ways that provide a sense of comfort and safety for riders can lead many cyclists to ride on sidewalks, increasing conflicts with pedestrians. These types of behaviors can negatively impact the pedestrian environment and create accessibility issues for the mobility impaired.

The main bicycle path serving the Heritage District is the Western Powerline Trail, which runs approximately east and west on the northern end of the Study Area, as shown in the figure on the following page. The existing bicycle infrastructure in terms of safe pathways of travel is otherwise relatively limited, lacking a north-south connection between the Western Powerline Trail and Elliot Road.

A sample of available bicycle parking inventory was collected in July during the same time period as vehicle parking inventory. This sample included sites within the study area north of the railroad tracks. Based on a 500-

foot walking tolerance, **Figure 49**, on the next page, demonstrates there is good coverage of bicycle parking in terms of location of facilities.

Figure 49: Existing Bicycle Infrastructure and Core Area Bicycle Parking

Source: Walker Consultants

OVERSIZED VEHICLE PARKING AND ALTERNATIVE TRANSPORTATION MODES

Dedicated parking for oversized vehicles should be provided in perimeter off-street facilities where they will have less potential negative impact on the curb lane's ability to promote turnover through service to as many vehicles as possible and to reduce impacts to traffic lane, as vehicles that exceed the typical approximately 21-foot parking length also tend to exceed the approximately 9-feet width, and could pose a traffic hazard. Alternatively, where curb lanes exceed approximately even 21-foot lengths for personal vehicles, dedicated stalls to accommodate motorcycles can be provided in groups of 2 or less. Provision of motorcycle spaces at the end of parking areas for personal vehicles encourages motorcycle drivers to not utilize the larger spaces and accommodates more vehicles overall along the curb lane. Because motorcycle stalls are generally angled, clusters of more than 2 can make accessing motorcycles parked on the interior of the clusters more difficult.

Electronic vehicle charging stations should be incorporated into new parking facilities with infrastructure that supports expansion of stations as need for them grows. While the infrastructure can be placed on street it would reduce turnover of spaces and optimization of the types of vehicles that can access those stalls. Municipalities that updated land use codes to provide for electric vehicles typically base requirements for number of stalls as a ratio of percentage of total provided parking. For instance, Montgomery County, Maryland requires 1 electric vehicle charging station per 50 parking spaces. Mountlake Terrace, Washington, provides requirements based on the land use type with Multifamily residential requiring 10% of total parking to accommodate electric vehicles, retail establishments providing 1% of their parking to electric vehicles, office and medical establishments providing 3%, and generally ranging from 1 to 3% for other uses as listed within their Code.

MICRO MOBILITY

Micro mobility provides transportation options for short-distance trips, either as standalone trips or to provide first and last-mile connectivity to destinations in combination with other modes such as transit or remote parking of personal vehicles. Micro mobility includes such options as scooter and bike sharing, as well car sharing and TNCs. Each mode having an optimal distance for targeting user types, and each providing unique challenges and demands on the parking and transportation system.

Not all micro mobility options aim to or should fulfill all transportation needs. Each option has a comfort threshold of typical users both in terms on comfort level in using each option and the comfort of the user while using that option. For instance, car sharing is best utilized in this sense for trips up to 5 miles or lasting 15 to 30 minutes. Car shares typically charge minute but provide climate-controlled comfort and extra storage for users traveling with items that may be difficult to carry while utilizing other options.

Car shares typically do not have additional parking or fuel costs in excess of the base per minute charge, but some do offer monthly or annual memberships for reduced fees. Bike shares, however, vary more widely in pricing options, some offering a per minute charge while others a flat fee for a base period of time, or some

combination thereof. Bike shares are typically best to accommodate trips of to 3 miles or lasting 10 to 15 minutes. Scooters have the shortest average comfort distance at 1.5 miles or trips lasting less than 10 minutes. While these are currently very popular, they have presented many communities regulatory challenges, increased rider and pedestrian injuries, and in some circumstances, excessive sidewalk clutter.

With micro mobility options, regulations should address where devices can be used, where they can be parking, and their top speed. Not only should these regulations be enforced with riders, but measures can be required of the vendors to protect the community's interest in managing these devices and providing a safer and more enjoyable experience for riders. It should be noted that the Town recently adopted a new ordinance specifically addressing micro mobility devices. In review of this ordinance, it is clearly written with an understanding of allowing for flexibility in future technologies and adaptations in devices, providing for variables in a way that in nonrestrictive in its ability to be applied consistently and equitably. This is a well written ordinance that should be help as an example for other communities.

WHERE MICRO MOBILITY DEVICES CAN BE USED

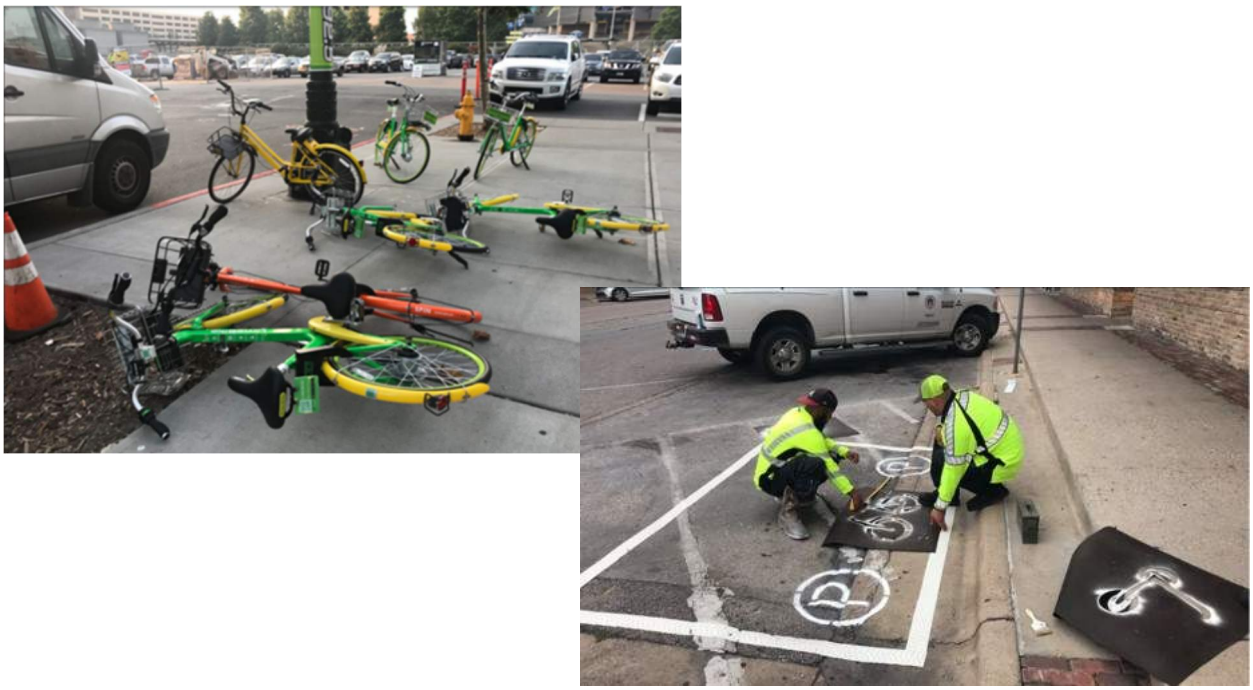
Typically, bikes cannot be ridden on the sidewalk and motorized devices such as e-scooters cannot be used on sidewalks nor in bike lanes. Clarifying regulations for micro mobility devices' permitted use should provide language that is flexible enough to address future options not currently on the market in addition to those in use today. The current ordinance prohibits motorized micro mobility devices from utilizing sidewalks or bicycle lanes, and while forcing these vehicles into traffic roadways, it does limit them to roadways with speed limits at or below 25 miles per hour. While pedestrian conflicts with motorized micro mobility devices are not desirable, the risks associated with riders intermixed with vehicles traffic have present considerable risk as well. Many communities are adapting their regulations to permit use of motorized micro mobility devices within bicycle lanes, while also requiring vendors of these devices to restrict the top potential speed.

MANAGING MICRO MOBILITY PARKING

Since the onslaught of dockless shared devices, finding bicycles left lying in bushes or strewn across sidewalks, and e-scooters with dead batteries abandoned in streets and cluttering pedestrian pathways quickly become an unacceptable norm. Communities responded by confiscating devices, requiring vendors to remove them from the community, and scrambled for means to corral the mess.

Today, many communities are using a mix of putting the ownness for responsible storage of a device once a user has completed their ride on the vendors with providing vendors guidelines and often specifically marked areas in which devices should be parked. Similar to geofencing used by ride-hailing mobile applications, communities have begun requiring micro mobility device vendors to geofence parking for the devices within specified locations. In these instances, the rider cannot terminate their session and stop charges to their account without parking the device within the geofenced area indicated in the app, often also marked for device parking, as shown in **Figure 50**, on the following page.

Figure 50: Micro Mobility Parking



Source: Walker Consultants

KEEPING MICRO MOBILITY DEVICES OFF THE SIDEWALK

While micro mobility vendors do summarize regulations related to the usage of their devices within the terms and conditions and typically again in the introductory screens that begin each ride session, according to a survey conducted by Consumer Reports in March 2019, 27% of riders are uncertain of the traffic laws they should follow.[11] Additionally, with 20% of respondents in the survey indicating discomfort with riding these devices in traffic, a common enforcement issue is their presence on sidewalks. While inappropriate and a demonstrated safety concern for pedestrians, without consistent enforcement of requirements to utilize bike lanes, whether shared in traffic or dedicated space, riders will continue to use the sidewalk.

This was demonstrated by a pilot of e-scooters in Portland, where 8% of riders chose to use the sidewalk when a dedicated bike lane was available, versus 66% of riders who chose to the use the sidewalk when no bike lane was present and the alternative was to ride in traffic.[12] The preference among riders to utilize the sidewalk is not only a reflection of safety concerns in riding in traffic, but also reflects the condition of many curb lanes and the infrastructure to support bikes and micro mobility devices within traffic travel ways, such as narrow roads, potholes and other obstacles in the curb lane that present a physical barrier to safely navigating the roadway.

[11] https://www.consumerreports.org/product-safety/deaths-tied-to-e-scooters/
[12] https://www2.deloitte.com/us/en/insights/focus/future-of-mobility/micro-mobility-is-the-future-of-urban-transportation.html?id=us:2ps:3gl:confidence:eng:cons:42319:nonem:na:nhRV7UOl:1149484916:344865936403:b:Future_of_Mobility:Micromobility_BMM:nb

ENFORCING MICRO MOBILITY

The current ordinance describes area in which micro mobility devices are permissible for use. To ensure these areas are recognized, and prevent riders from going outside the prescribed zone, communities are requiring vendors to geofence where devices may be operated. This method slows and stops the device's ability to operate as it leaves the geofenced boundary. Geofencing is also used to enforce the use of designated parking areas to avoid cluttering curb lanes and sidewalks with devices, as previously mentioned. A rider may not end their session, nor the billing for that session, until the device is returned to a designated area. It is essential to identify areas for parking that will not limit accessibility for others, ensuring ADA access is not unduly limited.

Equipment and operational requirements, such as the maximum speed the device can operate at, can also be used to enforce regulations of micro mobility devices. Operational requirements may also require the vendor to share data of usage patterns and trends.

MONETIZING THE CURB LANE BEYOND PERSONAL VEHICLE PARKING

As communities begin to restrict where micro mobility and ride share providers may store devices and conduct passenger loading, many have chosen to monetize access to the curb lane to offset the associated costs to enforce. Generally, the curb lane must first be managed to support enforcement of regulations of parking policies to coincide with these efforts. However, charging for idle time at the curb helps to ensure equitable access for all drivers and riders, and encourages micro mobility providers to better distribute and maintain devices throughout the community and in lower or no cost areas that may benefit from improved or increased mobility options. As pickup and drop off activities with the Heritage District are already reported to frequently occur within the travel lane, and the use of automated enforcement methods is controversial in the area, monetized micro mobility and ride share activities is not recommended at this time.

Valet is another opportunity to monetize the curb lane and provide regulations on locations and accessibility. Valet services typically occupy several spaces along the public right-of-way to provide both pick up and drop off at the stand, but in queuing spaces. Centralized valet reduces the potential impacts of competing services occupying large portions of curb lane in high demand areas. Additionally, a centralized system allows stands to network and operate as one, facilitating customers who drop off at one location and pick up at another. Valet can also increase the capacity and utilization of remote parking facilities through alternative parking patterns, such as stacked or tandem parking, that would not be possible with individual drivers. Use of the valet could by paid by the customer, community or participating businesses through a voucher system. Alternatively, valet can be provided as an amenity for a specific business, in which permitting of the curb space provides an additional revenue source for the managed parking system.

SPECIAL EVENTS

The Town of Gilbert and Heritage District hosts several large events in each year, events that can significantly increase demands on the parking system in excess of typical conditions. Given the temporary nature of parking demands related to special events, the relatively high cost of building additional parking supply, and unique needs of parking for each event, Walker does not recommend planning building new parking supplies specifically for special events. The exception to this would be if an event occurs during typical peak conditions for the Heritage District and at frequent enough intervals that would classify them as "typical conditions" for the area.

Currently, special event permitting requires only that "the applicant is responsible for ensuring adequate parking for attendees and minimizing any negative impacts to adjacent areas," obtaining appropriate approval via a provided additional form to utilize private parking supplies. Additionally, the applicant is required to indicate the type of parking that is planned for the event, as shown in **Figure 51** below.

Figure 51: Excerpt from Parking Section of Town of Gilbert's Special Events Permit Application

Parking

The applicant is responsible for ensuring adequate parking for attendees and for minimizing any negative impacts to adjacent areas. The applicant is responsible for obtaining authorized approval for any private parking or event areas.

The event will include the following (check **all** that apply):

☐ Public parking (Town parking lot, on-street parking)

☐ On-site Non-Town of Gilbert parking (Will require written permission from property owner and/or landlord)

☐ Off-site parking (Will require written permission from property owner and/or landlord)

☐ Parking on a dirt lot (The Town of Gilbert recommends you contact Maricopa Air Quality to request a complimentary inspection of the undeveloped site you plan on using for parking. Contact: 602-506-6179

☐ Shuttle service from off-site parking areas (attach a shuttle plan and written permission from property owner and/or landlord).

Source: Town of Gilbert (https://www.gilbertaz.gov/home/showdocument?id=3816)

As shown above, the Special Events Permit Application has no requirements or suggestion to include alternative modes of transportation to reduce parking demands related to the event. The application does, however, require indication of the location of proposed parking facilities and where applicant intends to provide accessible parking on the site plan, among other event components.

Ideally, event related parking demands will have minimal impacts on existing Heritage District activities and parking demands. One effective strategy to accommodate event parking is to provide remote parking with shuttle connections. Utilizing temporary signage to direct event goers to specific parking facilities to prevent a large proportion of event traffic from entering already high demand areas. For instance, during the U.S. Senior Open in Colorado Springs each year, variable messaging signs on Interstate-25 direct event goers to specific parking facilities with the promise of free parking and shuttle connections as they enter the city with reminders and directional signage to these facilities along the interstate through town to the parking destination, utilizing temporary variable messaging signage typically used for construction to off the interstate. Wayfinding is not provided to the event site until much closer to the golf course and away from main travel ways.

In the Heritage District, utilizing existing remote, large parking facilities during their off-peak times could considerably offset parking demands in high demand areas. Facilities such as schools and churches typically have large surface parking lots that sit relatively empty during popular evening and weekend event periods. Event organizers should be encouraged to explore shared-use parking opportunities at these and similar venues outside of the Heritage District to accommodate their event's parking needs and minimize traffic and parking impacts when possible. As discussed in the Town's Transportation Master Plan, "transportation planning is shifting away from the singular goal of moving vehicular traffic towards an approach that looks at all transportation modes and takes into consideration quality of life, economic development, and the environment."

To facilitate the use of alternative modes of travel and remote parking options, promoting consistency among events that attendees can come to rely on, the Town should cultivate and provide a suite of options for event organizers to consider. Options may include shuttle provider and shared use facility contact information, recommended shuttle routes, bicycle infrastructure for rent, etc. It should be noted while shuttles can be highly effective in moving people through systems, ridership is typically low during initial implementation. Shuttles, and transit in general, are most effective in environments where service is highly reliable and predictable. Shuttle service should be widely promoted - through event advertisements and media, by the primary event organizer and by event partners. The route should be shared with headways and stop times provided for attendees to plan their travel in advance.

Bicycling and the expansion of bicycle infrastructure to accommodate not only residents but visitors can reduce daily and special event parking demands. Bicycle share near popular visitor lodging locations provides visitors the opportunity to explore Gilbert and the Heritage District at a slower, more personalized pace. Bicycle valet can be a cost-effective way to promote sustainability and reduced cost transportation at special events, while contributing to reduced traffic congestion and parking demand. Bicycle valet can be accomplished internally with modest investment in infrastructure that setups and tears down quickly. Valet services could be provided by event organizer staff or volunteers through a contracted service.

RIDESHARE STAGING FOR SPECIAL EVENTS

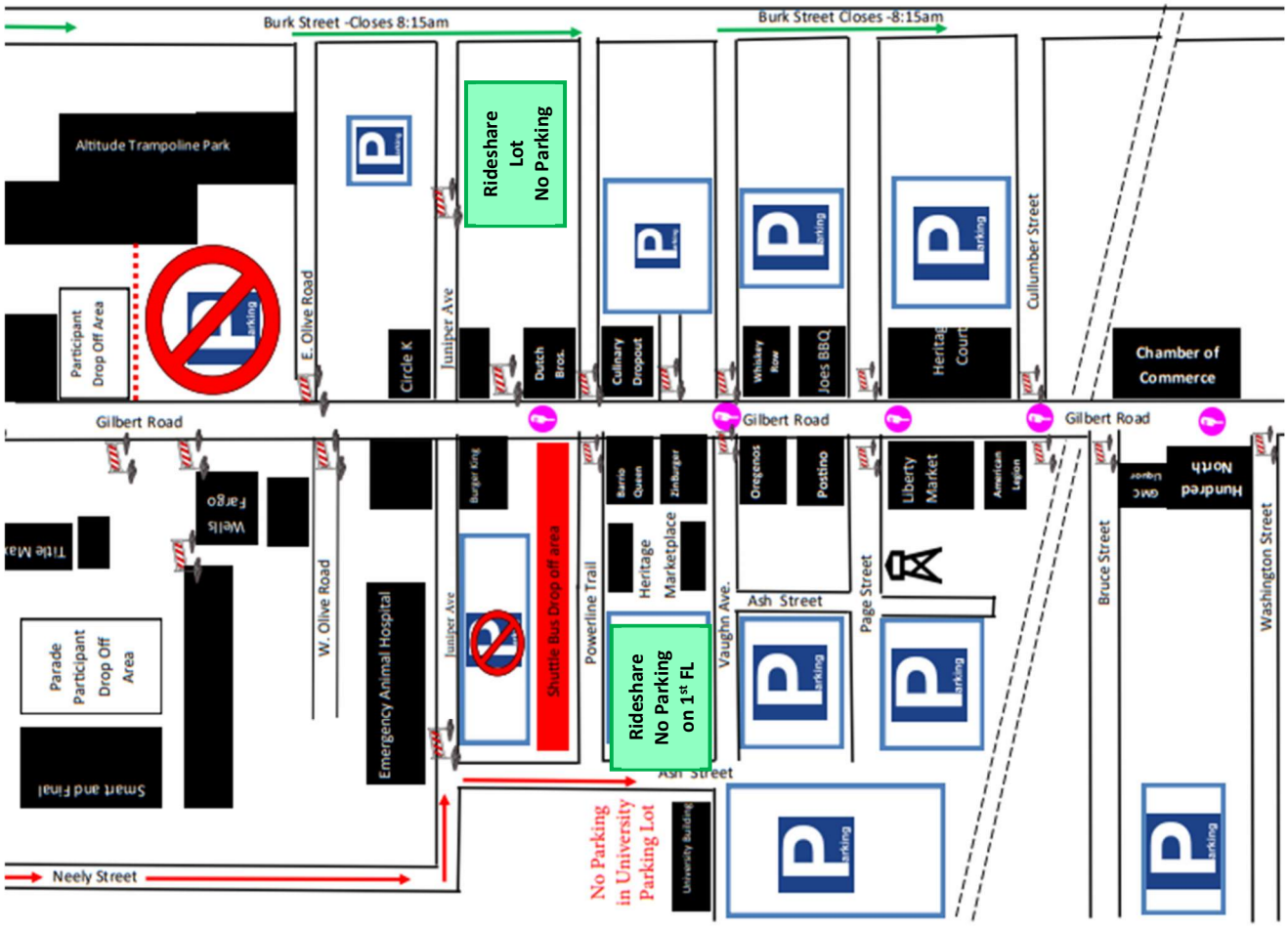
Well planned rideshare staging for special events can provide convenience for attendees and enhance first and last perceptions of the overall event. Poorly planned or mismanaged rideshare staging, however, can detract from the experience and leave attendees with a poor perception of the event, the venue, and the Town or District. As such, requiring private events to incorporate rideshare planning in the event application process is not only in event organizers' best interest, but also that of the venue's and the District's. Planning components to consider for rideshare staging will vary based on the location of the event, the anticipated number of attendees, and availability of resources. These may include:

- Conveniently locating designated pick up and drop off areas to encourage mode shift away from personal vehicles to reduce overall parking demands related to the event and impacts on the existing parking system
- Locating designated pick up and drop off areas away from parking facilities where passenger loading activities may otherwise congest traffic, to minimize additional strain on the roadways
- Minimizing pedestrian and vehicle conflicts by locating designated pick up and drop off areas away from pedestrian travel paths between the venue and parking and transit stations
- Work with TNCs leading up to the event to establish geofenced designated pick up and drop off areas
- For larger events, Uber and Lyft have special events programs that match drivers and riders by a PIN number in a next rider in line to next driver in the queue manner (see Portland case study) to reduce congestion related to drivers and riders searching for each other
- Offer area businesses the opportunity to sponsor ride credits for an event. For example, those with receipts over $25 at Joe's Burger Barn receive a code for a $5 Uber or Lyft credit valid the evening of the Gilbert Days parade. Advertised before and during the event, this can help to distribute rideshare demand throughout the evening and reduce congestion immediately following the event.

Similar to private events, the above considerations should be made of Town sponsored, public events. While specific components will vary by event, the following map demonstrates the use of an off-street solution for a potential drop off and pick-up area for the Gilbert Days Parade. Locating the rideshare staging lot near the shuttle lot further promotes use of alternative modes of transportation for the event and reduces parking related traffic congestion.

Figure 52 provides an example of where and how rideshare could be staged in the Heritage District for the Gilbert Days Parade. In this example, the rideshare pick up, drop off, and staging is proposed for the first floor of the parking garage just south of Powerline Trail along Ash Street. Alternatively, or in addition, rideshare could be staged in the surface parking lot behind Dutch Brothers near the intersection of Juniper Avenue and Elm Street.

Figure 52: Example Given of Staging Rideshare in the Heritage District during the Gilbert Days Parade



Source: Walker Consultants

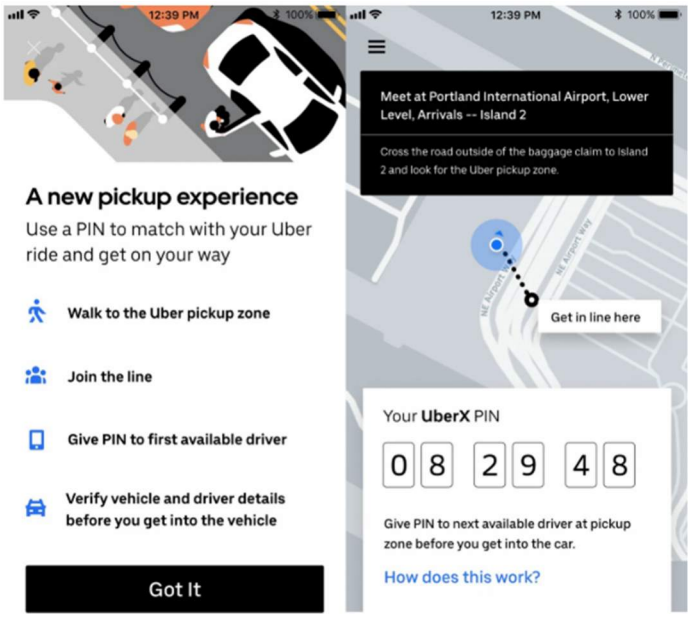
PORTLAND CASE STUDY

Congestion along the terminal curb lane is a common issue at airports across the country, as personal vehicles, taxis, TNCs, shuttles, and others compete for convenient loading and unloading space. To address congestion and reduce driver dwell times, Uber launched a pilot program at Portland International Airport in May 2019. Operating similarly to a taxi queue, rather than matching individual riders with individual drivers, riders received a personal identification number (PIN) upon requesting a ride pick-up at the airport, as shown in **Figure 53**. The rider is then directed to enter a line at a designated location. Concurrently, a driver is dispatched to enter the designated driver queue.

Once the rider reaches the front of the line, the rider provides the driver at the front of that queue with their PIN. The driver enters the rider's PIN into their app and both parties then receive information allowing them to verify each other's identities (i.e. the same information provided for individually matched rides with driver vehicle information and rider picture and name)[13]. Lyft launched a similar program pilot, Fast Match, in May 2019 at Portland as well[14].

The PIN Program is not new for Uber. Initially implemented in 2016, the program was designed to service high volume events and has been deployed at more than 60 events around the world as of Fall 2019, including the Kentucky Derby.

Figure 53: Uber Mobile Application PIN Interface



Source: Uber

[13] Uber Launches PIN Feature to Cut Wait Times at US Airports, Starting in Portland, May 2019 https://techcrunch.com/2019/05/13/uber-launches-pin-feature-to-cut-wait-times-at-airports-starting-in-portland/
[14] Introducing Fast Match: Making PDX Pickups Easier For You, May 2019 https://blog.lyft.com/posts/making-airport-pickups-easier-for-you-pdx

10 Strategy Implementation Plan

STRATEGY IMPLEMENTATION PLAN KEY TAKEAWAYS

SUMMARY OF STRATEGY AND ACTION ITEM BY TIME HORIZON

Strategy	Immediate & Short-Term 0 – 5 Years	Mid-Term 5 – 10 Years	Long-Term 10+ Years
Parking Enforcement	• Hire and/or contract and train parking program manager and parking enforcement/ambassadors • Develop and provide enforcement regulations and educational materials • Implement active parking enforcement of managed facilities	• Monitor parking utilization and enforcement data for necessary routing and staffing adjustments	• Ongoing monitoring of enforcement needs and adjustments
Signage & Wayfinding	• Conduct detailed Inventory of existing wayfinding and guidance signage • Begin thinking about preferred branding and identity for District parking system • RFP for design, development, and acquisition of static and dynamic signage and wayfinding • Dynamic wayfinding should include integration of parking location and availability into any mobile payment application that may be in place as part of the paid parking strategy option	• Ongoing maintenance of signage and wayfinding	• Ongoing maintenance of signage and wayfinding
Curb Lane Management	• Development of curb lane policy and program • Implement curb lane policy and program	• Ongoing evaluation and adjustment of curb lane management policy and program, to include ongoing coordination with Downtown Merchants Association and other Heritage District stakeholders as needs adapt over time	• Ongoing evaluation and adjustment of curb lane management policy and program, to include ongoing coordination with Downtown Merchants Association and other Heritage District stakeholders as needs adapt over time
Time Limited Parking	• Implement on-street time limits • Identify requirements for neighborhood parking permit program (NPPP) eligibility • Ensure parking enforcement training includes time limits	• Ongoing evaluation of on-street time limits based on enforcement and utilization data, in terms of duration and locations • Evaluation of off-street parking utilization trends for potential time limited parking expansion as necessary • Identify locations for NPPP and implement is neighborhood meets eligibility requirements	• Ongoing evaluation of on-street and off-street adequacy and adjustments of time limits and locations • Ongoing evaluation and adjustment of NPPP as necessary
Paid Parking	• Identification of threshold for implementation of paid parking – funding source driven, system utilization driven, or combination. Workshop session with Town Council to review and discuss.	• Ongoing evaluation of identified metrics driving implementation • If metrics indicate need, RFP development and acquisition of payment technologies • If metrics indicate need, identification of facilities or areas to be paid, to remain time limited, and/or permit areas	• If metrics indicate, implement paid parking • Ongoing evaluation of system utilization trends and funding needs
Special Events	• Collect vendor information for event planners to utilize in promotion of alternative modes for events • Update Special Event Permit application to include recommendations and requirements for alternative modes of transportation	• Investment in alternative mode infrastructure to rent to organizers for special events	• Ongoing evaluation of vendors, modes, and permit process

SECTION 10 – STRATEGY IMPLEMENTATION PLAN

The following section summarizes the key points of the above strategies in terms of the current condition or extent to which each strategy is implemented in the Heritage District, as well as the metric or scenario that would trigger the strategy's deployment. Information needed to identify where the Heritage District is in relation to those triggers is provided along with applicable next steps and identification of the resources and projected costs necessary to implement the strategy. These are followed by a table summarizing the timeline for implementation of the strategies.

PARKING ENFORCEMENT

Current Condition: Provided by police department on a predominantly complaint-based instance.

Trigger: Immediately upon public notice of intent to begin managing parking. Initially, parking ambassadors will be providing informational brochures to parkers to aid in notification of upcoming changes to the system. The educational campaign should commence a minimum or 60 days prior to active enforcement, and parking ambassador introduction to community should commence a minimum or 30 days prior to active enforcement and issuing citations. Enforcement FTEs should be based on providing adequate coverage of enforcement areas as needed to route officers at least equal to posted time limits. For instance, areas with posted 3-hour parking should be enforced every three hours.

Recommendation(s): 2.0 FTEs should be sufficient to cover the core area providing for shift changes with overlapping staffing and enforcement of on-street spaces at least every approximately 3 hours.

Next Steps: Code update, development of educational materials, parking ambassador training

Budget & Resources:

Implementation Item	Quantity	Initial Investment (Per Unit)	Initial Investment (Total)	Ongoing Annual Cost
Parking Ambassadors	2.0 FTE	-	-	$77,000 - $109,000
Parking Program Manager	1.0 FTE	-	-	$82,000 - $125,000
Enforcement Technology				
Handheld Units	4 units	$5,000 - $10,000	$20,000 - $40,000	
Advanced Mobile Unit[1]	1 unit	$50,000	$50,000	
Software	-	-	-	$5,000
Total			**$20,000 - $50,000**	**$164,000 - $239,000**

1. Initial investment and ongoing annual cost not inclusive of any vehicle-related costs (i.e., purchase of vehicle, maintenance, fuel, et cetera).

SIGNAGE & WAYFINDING

Current Condition: The Town does not currently provide adequate signage and wayfinding to public parking, nor does it provide any dynamic messaging alerting drivers to which parking facilities have parking supply availability.

Trigger: Immediate. Establishing a consistent, cohesive, and comprehensive suite of parking guidance and wayfinding will be instrumental in connecting visitors to the District with parking.

Recommendation(s): Establish a cohesive brand and image for the District's public parking, including a regular nomenclature system that clearly identifies all public parking assets both internally and externally. When complete, implement branding across a suite of new parking facility signage as well as on new APGS signs that are being recommended to serve the dynamic messaging needs of the District's parking system. APGS serves to optimize parking utilization in off-street parking facilities by directing parking patrons to available spaces. Separate sign families may be appropriate depending on the user context (pedestrian or vehicle). When branding and design are complete, fabricate and install new signs at locations indicated in this report.

Next Steps: Conduct detailed inventory of all parking guidance and wayfinding signage, and other ancillary signage, in order to identify extent of need for new or enhanced signage. Begin discussion about preferred branding and identity for parking system.

Budget & Resources: Varies dependent upon signage type and quantity chosen. Dynamic signage costs approximately $9,000 to $10,800 per sign while the static signage discussed and recommended in this report can vary between $500 and $1,000 per unit.

CURB LANE MANAGEMENT

Current Condition: No existing curb lane programming policy.

Trigger: Immediate. Establishing a policy early on not only supports management of parking resources but supports the parking program's place within the larger curb lane management program.

Recommendation(s): With much of the existing curb lane unmanaged, aside from a few locations providing 15-minute or user specific spaces, the Town should look to prioritize curb lane components for each zoning district or neighborhood based on community transportation, sustainability, economic and other goals to develop a curb lane management policy. This policy will guide programming on the assignment of time limited, paid, loading, and accessible spaces, as well as on placement and approval of potential parklets, designated rideshare pickup zones, placement of personal mobility device parking, and other demands on the public right-of-way. Establishing the policy framework prior to assigning any of these uses designated space along the curb allows for equitable and consistent decision making that can be tied directly back to the support the larger community goals.

Next Steps: Development of a curb lane management policy and on-going evaluation of effectiveness of the policy and utilization patterns of the area to identify and address needed changes or areas of spillover for expanded management.

Budget & Resources: Town staff time

TIME LIMITED PARKING

Current Condition: Spaces are marked for specific businesses, as shown in the example in the section above, however such spaces are self-enforced by those businesses. Outside of privately managed parking, public parking is not currently managed.

Trigger: Where pockets of localized high occupancies and low turnover of premium spaces are occurring, time limits are used to redistribute parking demands.

Recommendation(s): Complete necessary updates to Town ordinance to provide additional flexibility in application of time limited zones and management off-street facilities as necessary, add signage for time limited areas. Implementation of 3-hour time limited parking within the one-block radius of Gilbert Avenue to encourage turnover of spaces and improve access to area businesses. Provide time limit information on the Town website in addition to posted signage on-street and an education campaign prior to enforcement. Ongoing evaluation of parking utilization to identify need to update time limits or expand management area as the system matures and the area continues to experience growth.

Budget & Resources: Town staff time for updating ordinance language, as well as investment in signage and Town staff time for installation of signage.

PAID PARKING

Current Condition: Paid parking is not currently utilized in the Town of Gilbert.

Trigger: When time limited parking with efficient enforcement no longer provides sufficient incentive to redistribute parking demands, when overall parking demands of the parking system exceed efficient capacity, or parking revenue generation is needed and desired to fund the operation, maintenance, or capital investments in the system.

Recommendations: Identify the Town's financial goals for the parking system and obtain Town leadership direction and buy-in for funding parking management and related capital improvement projects. If user fees are determined to be the appropriate source of funding for the District's managed parking system, creation of an ordinance is necessary to define the parameters for implementing paid parking. The Town will need to identify and release a request for bids for the desired technology to manage parking and the collection of fees. Ongoing evaluation of the system to adjust fees as needed against the established funding goals. If the Town does not feel paid parking and user fees are the appropriate source for funding, another funding source will need to be identified based on the Town's priorities and goals as discussed in Section 7.

Next Steps: Conduct parking utilization and turnover study annually to monitor need for management of spaces via payment, and/or if identification of funding sources prioritizes user fees, identify management structure and develop RFP for equipment.

Budget & Resources:

Implementation Item	Quantity	Initial Investment (Per Unit)	Initial Investment (Total)	Ongoing Annual Cost
On-Street Parking Kiosk[1]	17	$10,000	$170,000	$17,000
Off-Street Parking Kiosk[1]				
Cash & Credit Card	16	$55,000	$880,000	$88,000
Credit Card Only	27	$20,000	$540,000	$54,000
Gated Entry Lane[1]	24	$22,000	$528,000	$52,800
Gated Exit Lane[1]	24	$25,000	$600,000	$60,000
Management Software	-	$50,000	$50,000	$15,000
		Total	**$2,768,000**	**$286,800**

1.Pricing may vary based on quantity discounts and options chosen per kiosk

SPECIAL EVENTS

Current Condition: Special event permit applicants are required to plan for adequate parking, with permission from private entities as applicable, as part of the permit application process. Alternative modes of transportation or parking demand management is not a current consideration of the permit application.

Trigger: Immediate. Updating policies regarding special events will support the Town's sustainability and mobility goals.

Recommendation(s): Town staff should begin updating event permit application materials and creating a vendor menu immediately.

Next Steps: Update Special Events Permit to include recommendations and/or requirements for alternative modes of transportation to consider when event planning. Contact vendors to collect service menu for event organizers to reference.

Budget & Resources: Town staff time, potential investment in temporary bicycle parking infrastructure for rentals varies from $300 per temporary a-frame bicycle valet rack to $700 for single sided free-standing vertical rack, or $1,200+ per bicycle storage cage.

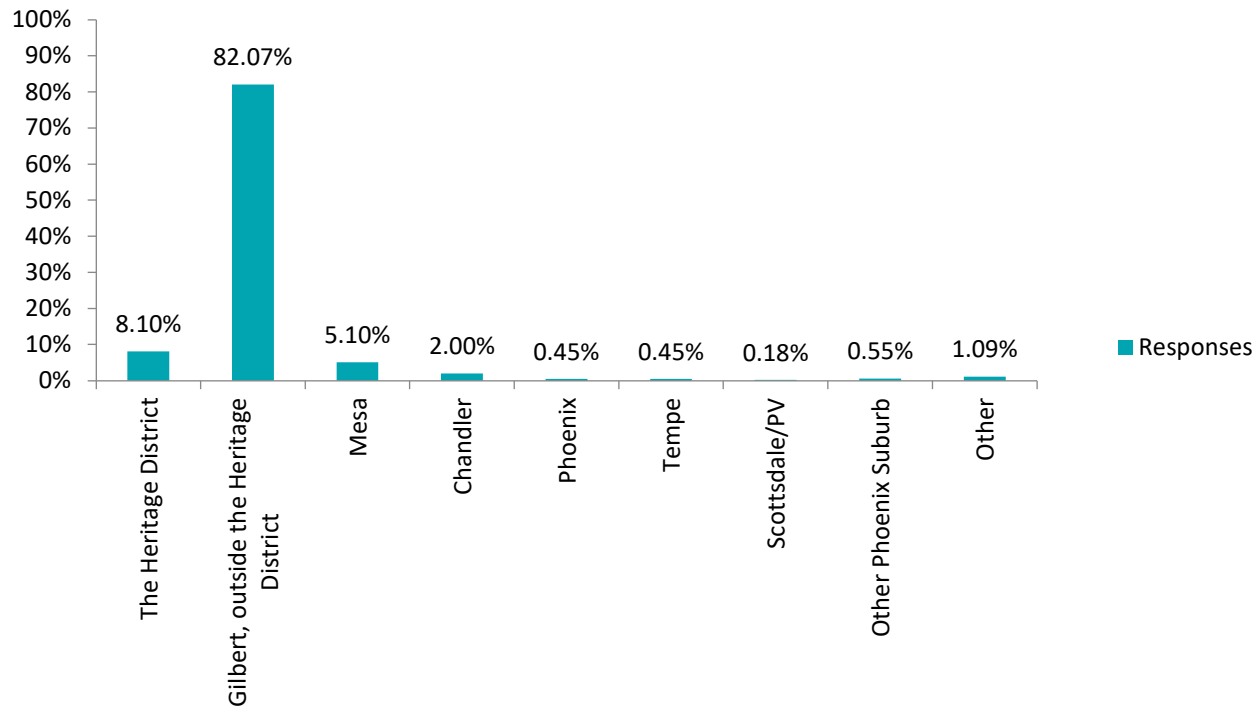
END OF REPORT

Appendix

AGGREGATED ONLINE QUESTIONNAIRE RESULTS BY QUESTION

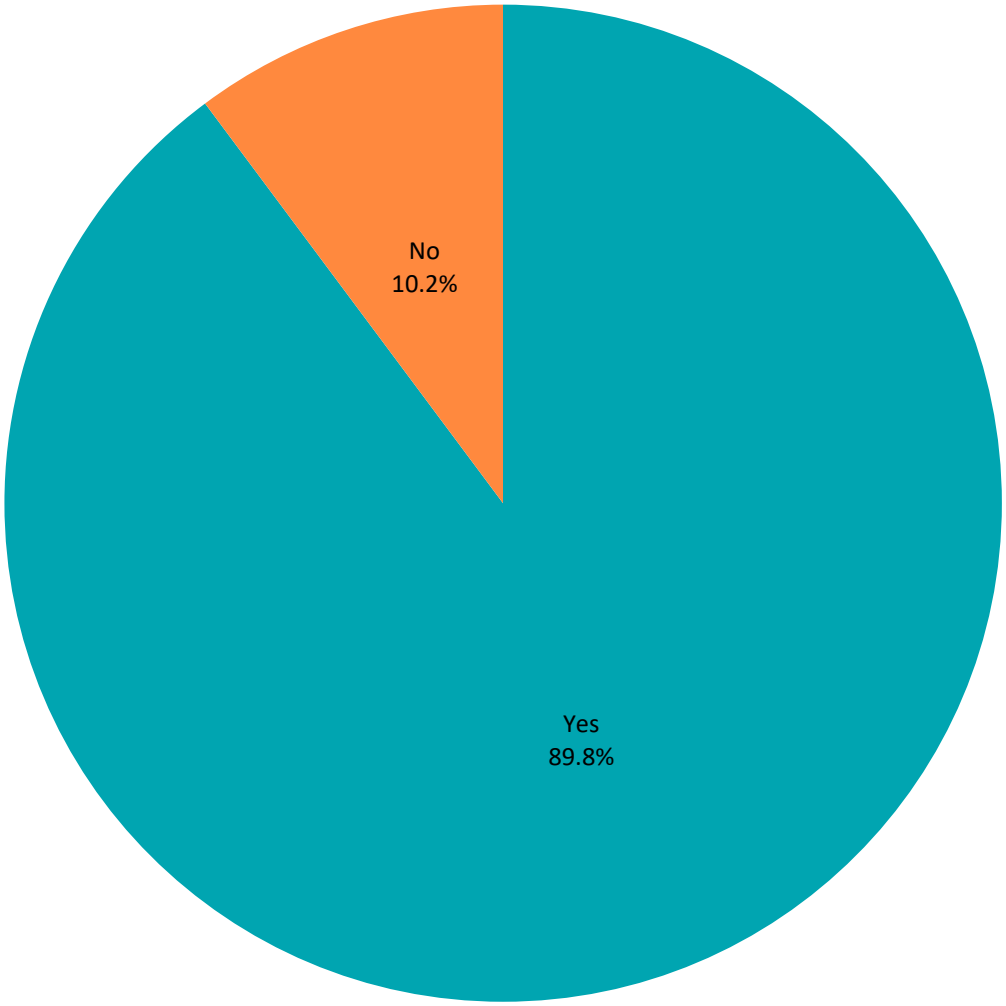
Q1. Where do you live?

Answer Choices	Responses	
The Heritage District	8.10%	89
Gilbert, outside the Heritage District	82.07%	902
Mesa	5.10%	56
Chandler	2.00%	22
Phoenix	0.45%	5
Tempe	0.45%	5
Scottsdale/PV	0.18%	2
Other Phoenix Suburb	0.55%	6
Other	1.09%	12
	Answered	**1099**
	Skipped	**0**



Q2. Does your residence provide on-site parking?
*This question was only asked of those that responded as residing within the Heritage District.

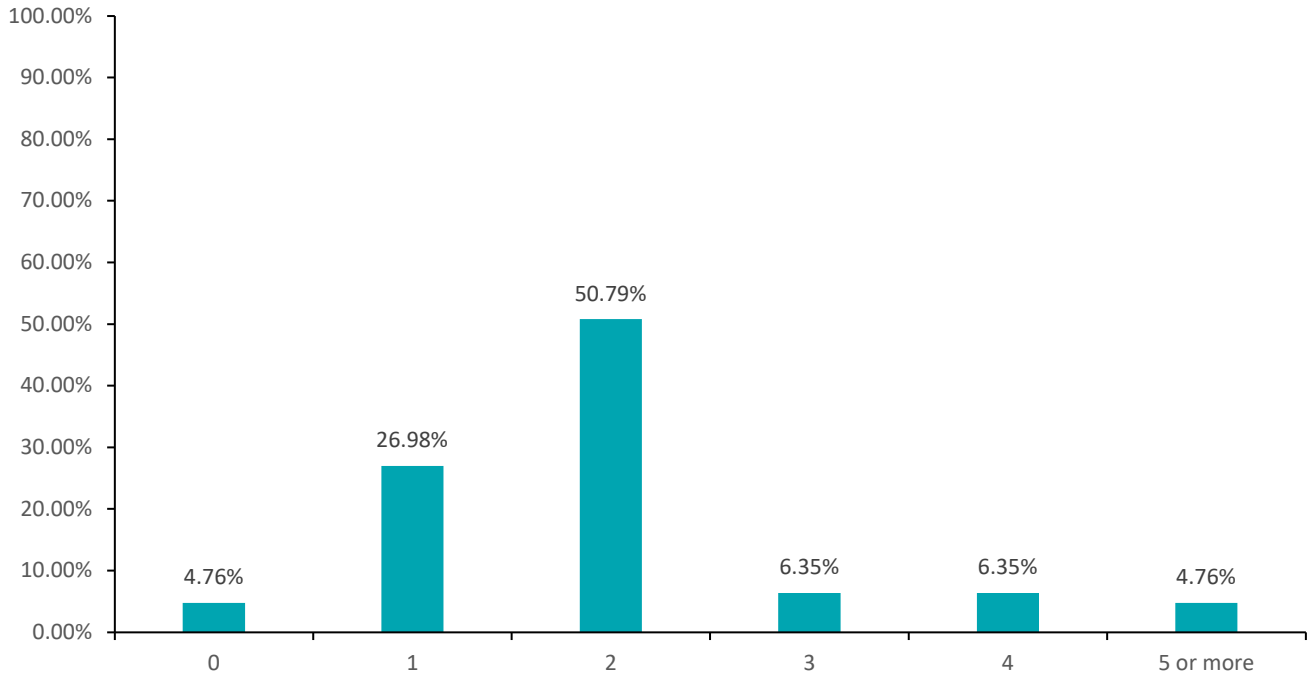
Answer Choices	Responses	
Yes	89.80%	88
No	10.20%	10
	Answered	**98**
	Skipped	**1001**


No
10.2%
Yes
89.8%

Q3. How many on-site parking spaces are provided for your residence in the Heritage District? For those in multifamily housing, how many spaces are provided for your specific housing unit, not the overall property?
*This question was only asked of those that responded as residing within the Heritage District.

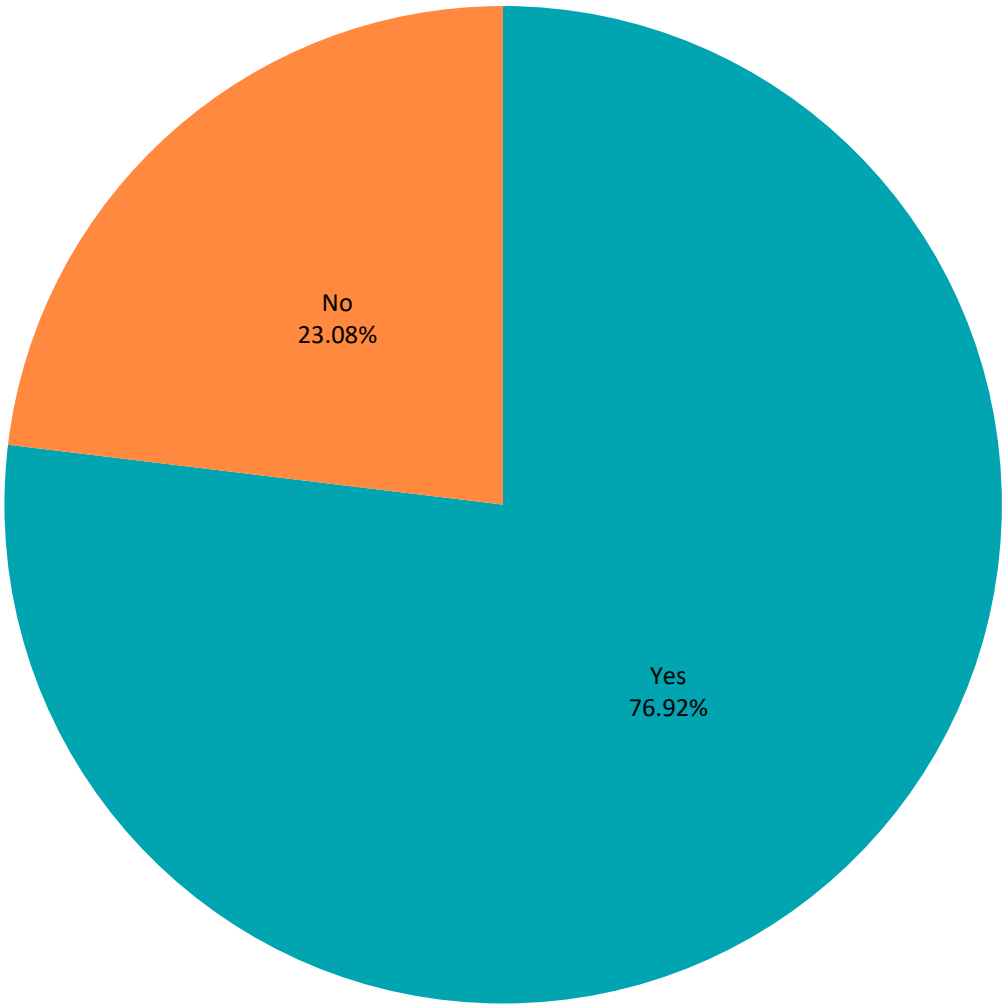
Answer Choices	Responses	
0	4.76%	3
1	26.98%	17
2	50.79%	32
3	6.35%	4
4	6.35%	4
5 or more	4.76%	3
	Answered	**63**
	Skipped	**1036**

Minimum response:	0 per household
Maximum response:	20 per household
Average response:	2.2 per household
Median response:	2 per household



Q4. Does the provided on-site parking adequately meet the needs of your residence?
*This question was only asked of those that responded as residing within the Heritage District.

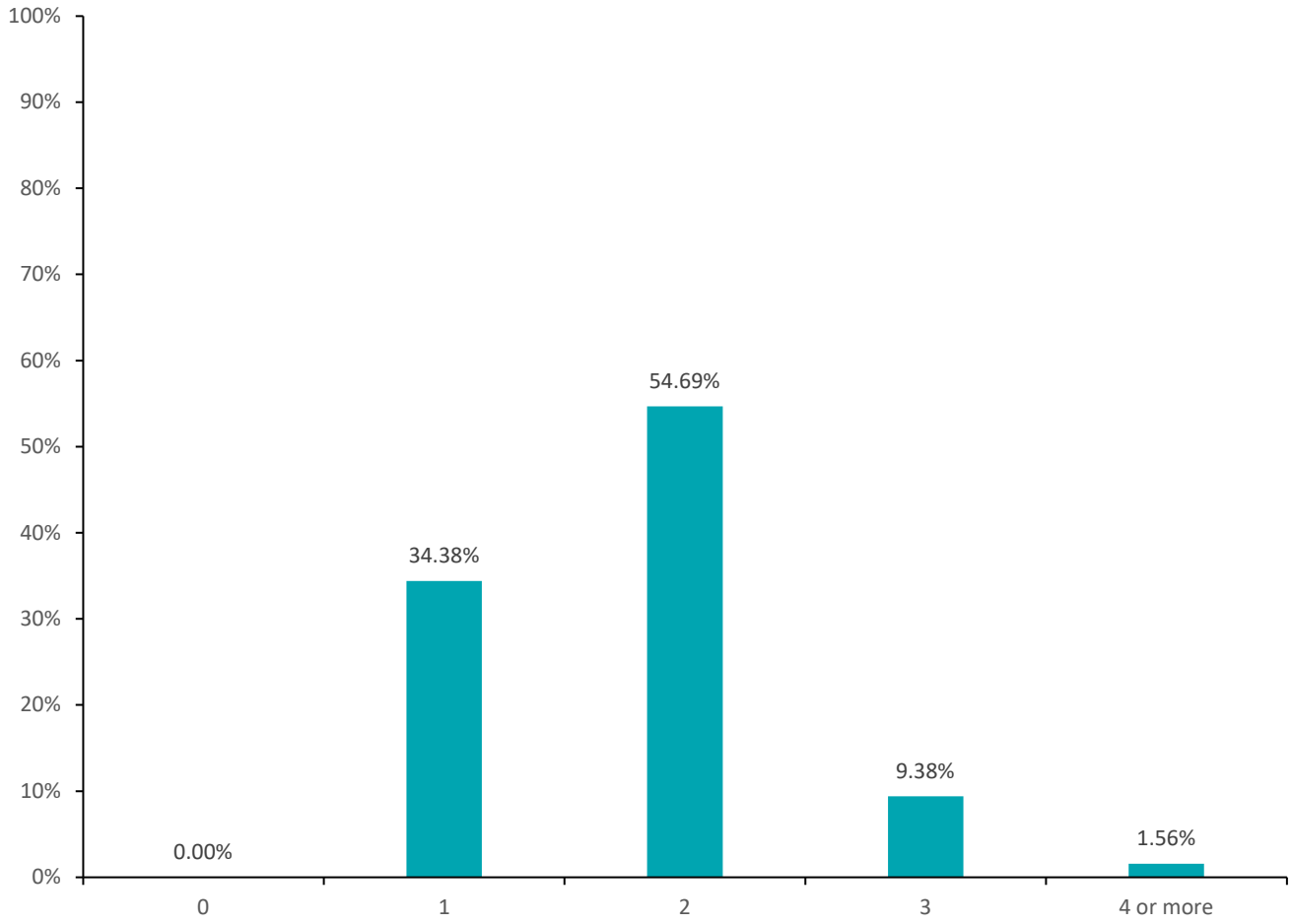
Answer Choices	Responses	
Yes	76.92%	50
No	23.08%	15
	Answered	**65**
	Skipped	**1034**



Q5. How many vehicles are registered at your residence in the Heritage District?
*This question was only asked of those that responded as residing within the Heritage District.

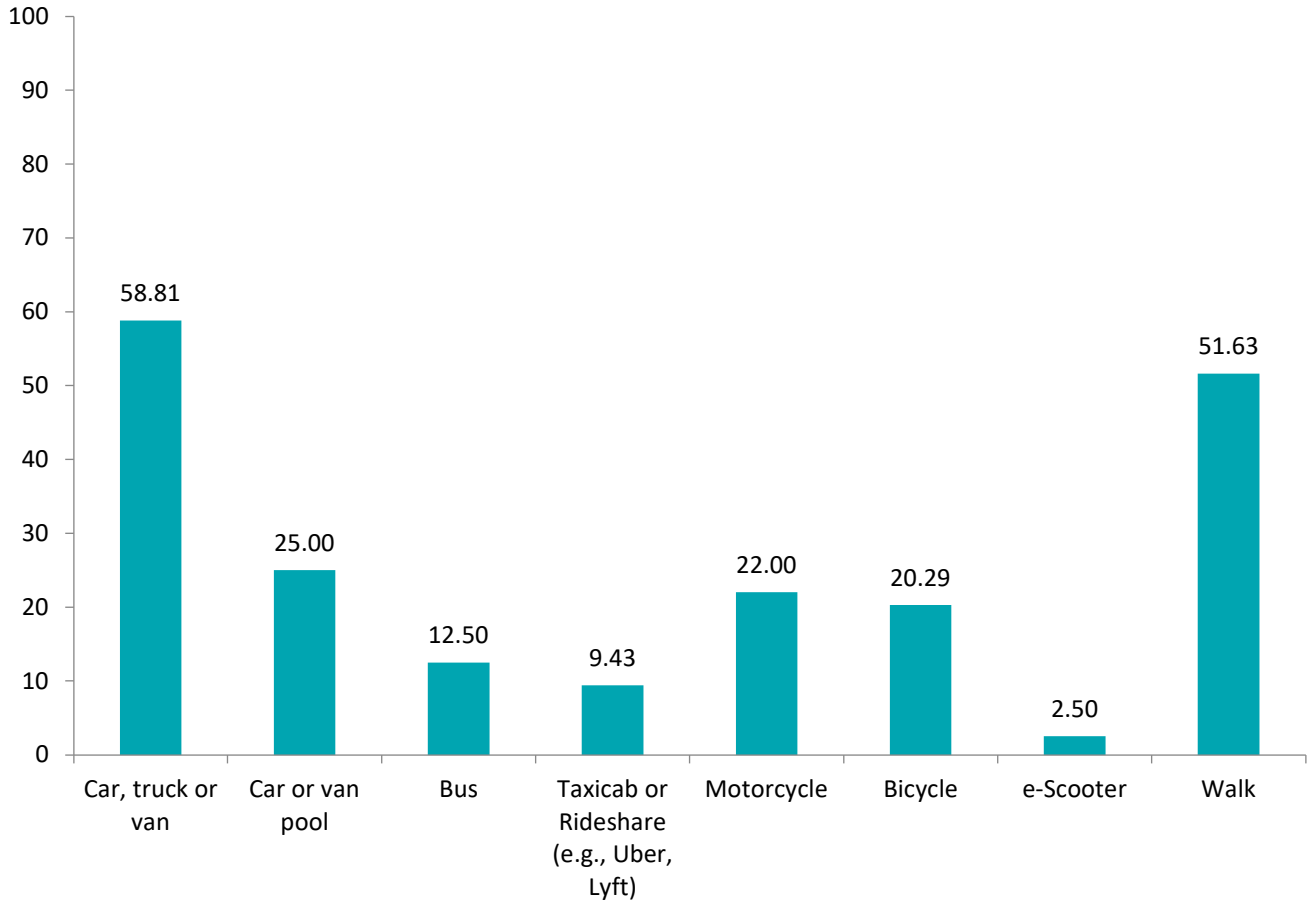
Answer Choices	Responses	
0	0.00%	0
1	34.38%	22
2	54.69%	35
3	9.38%	6
4 or more	1.56%	1
	Answered	**64**
	Skipped	**1035**

Minimum response:	1 per household
Maximum response:	4 per household
Average response:	1.78 per household
Median response:	2 per household



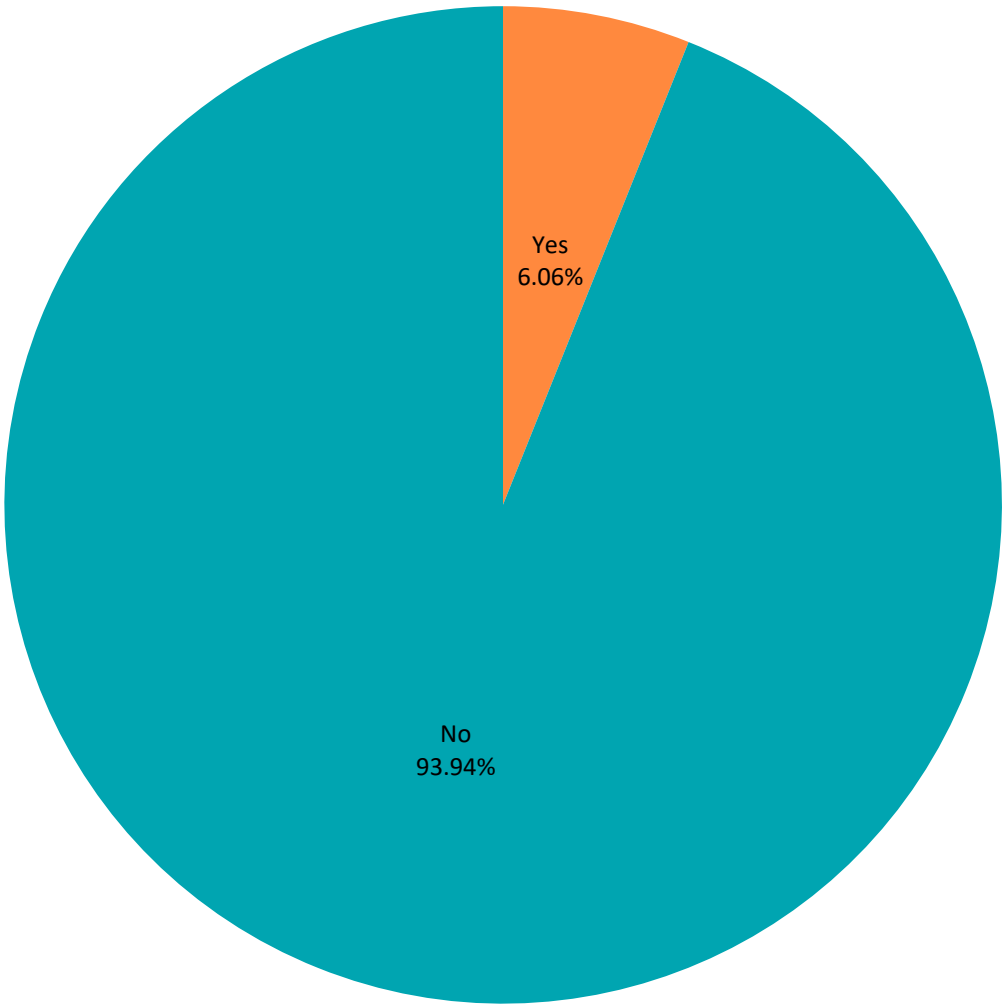
Q6. How do you typically travel within the Heritage District? (Distribute the percentage of your trips among the following options; percentage distribution among options must total 100%)
*This question was only asked of those that responded as residing within the Heritage District.

Answer Choices	Average Number	Total Number	Responses	
Car, truck or van	58.81355932	3470	86.76%	59
Car or van pool	25	125	7.35%	5
Bus	12.5	50	5.88%	4
Taxicab or Rideshare (e.g., Uber, Lyft)	9.428571429	66	10.29%	7
Motorcycle	22	110	7.35%	5
Bicycle	20.28571429	284	20.59%	14
e-Scooter	2.5	10	5.88%	4
Walk	51.63461538	2685	76.47%	52
			Answered	**68**
			Skipped	**1031**



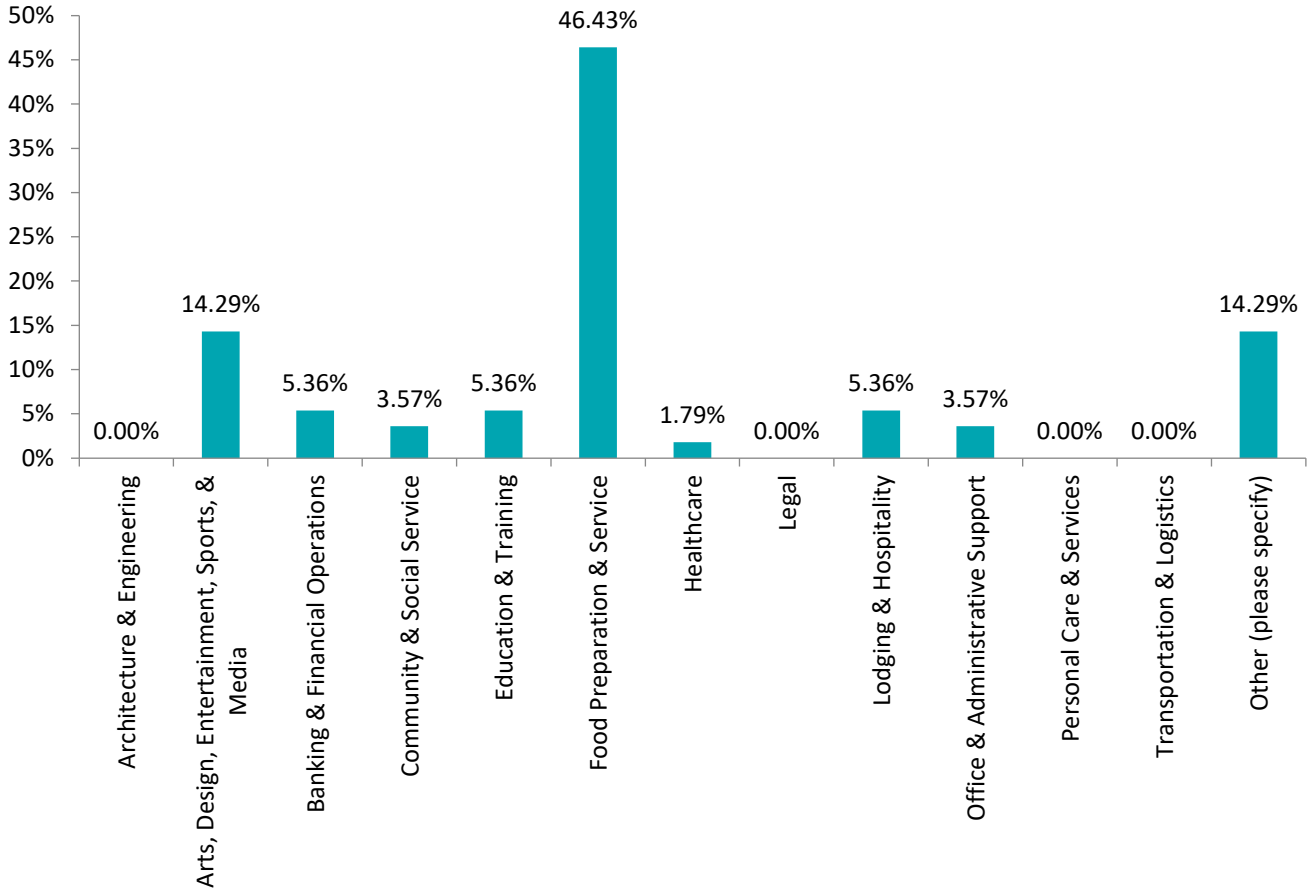
Q7. Do you work in the Heritage District?

Answer Choices	Responses	
Yes	6.06%	65
No	93.94%	1008
	Answered	**1073**
	Skipped	**26**



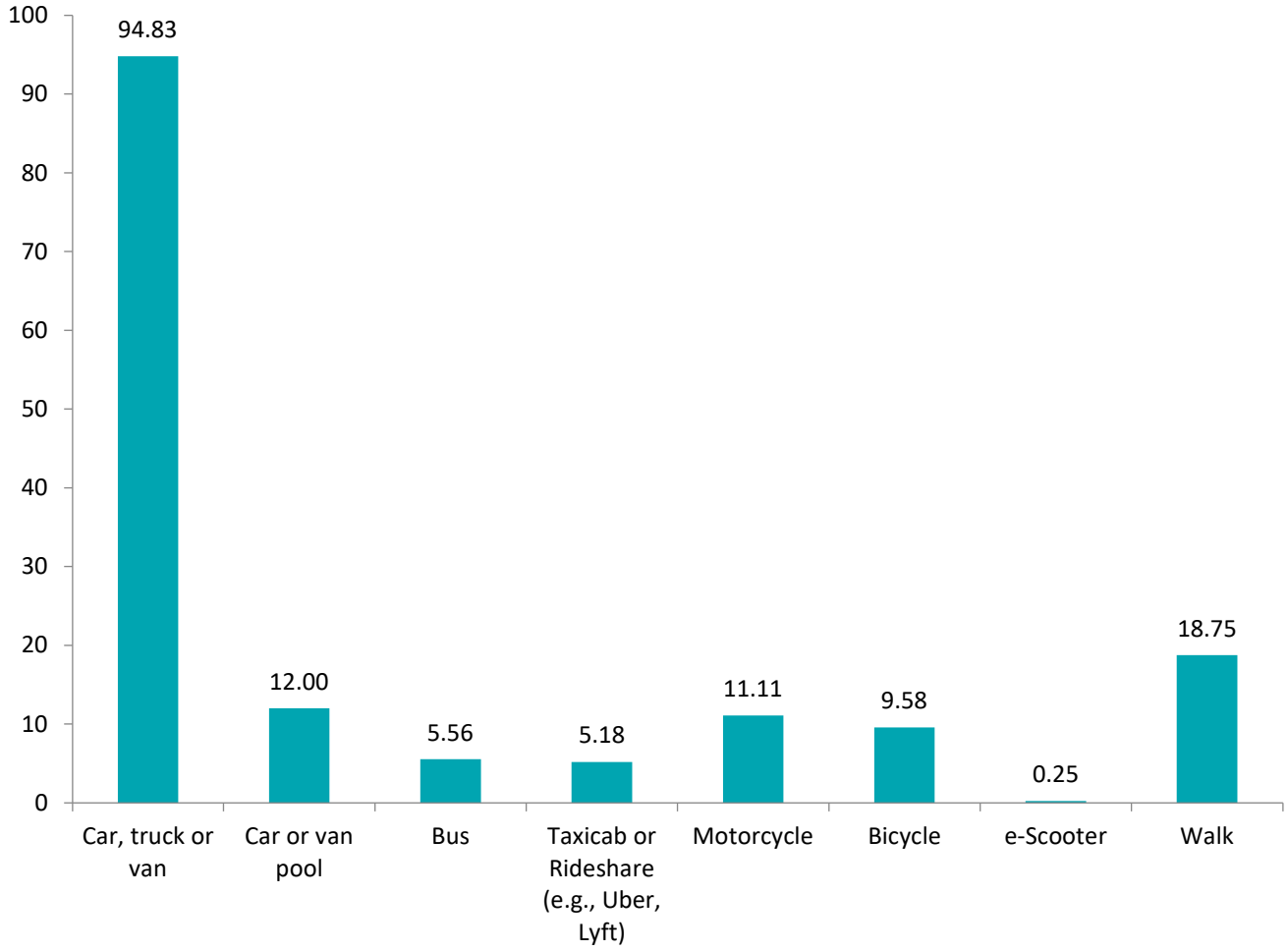
Q8. Which of the following best describes the industry in which you work?
*This question was only asked of those indicating they work in the Heritage District.

Answer Choices	Responses	
Architecture & Engineering	0.00%	0
Arts, Design, Entertainment, Sports, & Media	14.29%	8
Banking & Financial Operations	5.36%	3
Community & Social Service	3.57%	2
Education & Training	5.36%	3
Food Preparation & Service	46.43%	26
Healthcare	1.79%	1
Legal	0.00%	0
Lodging & Hospitality	5.36%	3
Office & Administrative Support	3.57%	2
Personal Care & Services	0.00%	0
Transportation & Logistics	0.00%	0
Other (please specify)	14.29%	8
	Answered	**56**
	Skipped	**1043**



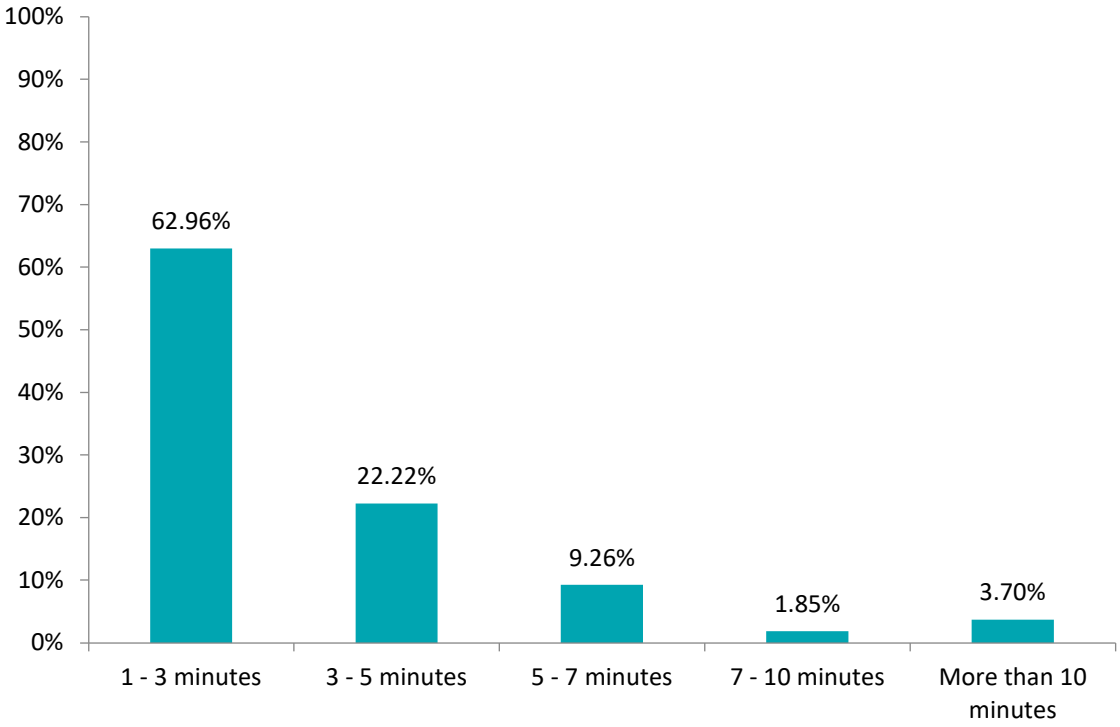
Q9. How do you typically travel to the Heritage District for work? (Distribute the percentage of your trips among the following options; percentage distribution among options must total 100%)
*This question was only asked of those indicating they work in the Heritage District.

Answer Choices	Average Number	Total Number	Responses	
Car, truck or van	94.82692308	4931	92.86%	52
Car or van pool	12	120	17.86%	10
Bus	5.555555556	50	16.07%	9
Taxicab or Rideshare (e.g., Uber, Lyft)	5.181818182	57	19.64%	11
Motorcycle	11.11111111	100	16.07%	9
Bicycle	9.583333333	115	21.43%	12
e-Scooter	0.25	2	14.29%	8
Walk	18.75	225	21.43%	12
			Answered	**56**
			Skipped	**1043**



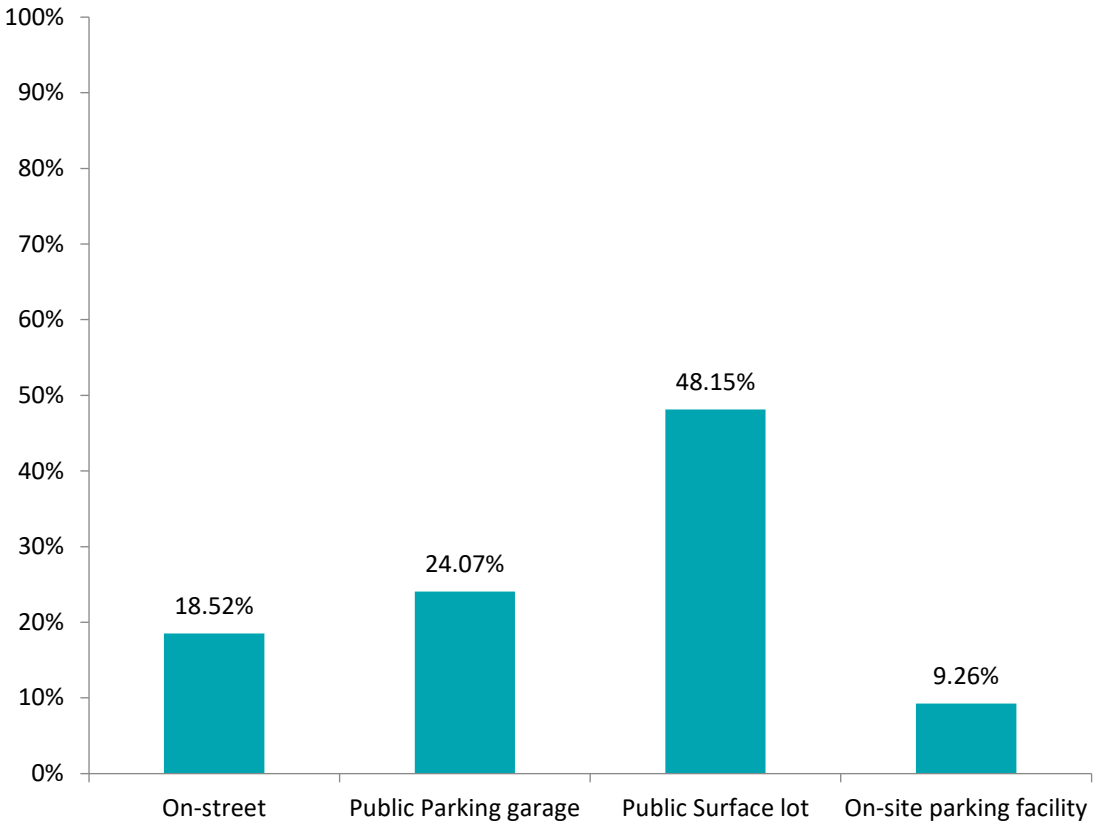
Q10. How long does it typically take you to find a parking space?
*This question was only asked of those indicating they work in the Heritage District.

Answer Choices	Responses	
1 - 3 minutes	62.96%	34
3 - 5 minutes	22.22%	12
5 - 7 minutes	9.26%	5
7 - 10 minutes	1.85%	1
More than 10 minutes	3.70%	2
	Answered	**54**
	Skipped	**1045**


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
62.96%
22.22%
9.26%
1.85%
3.70%
1 - 3 minutes
3 - 5 minutes
5 - 7 minutes
7 - 10 minutes
More than 10 minutes

Q.11 Where do you generally look FIRST for parking when you arrive at work?
*This question was only asked of those indicating they work in the Heritage District.

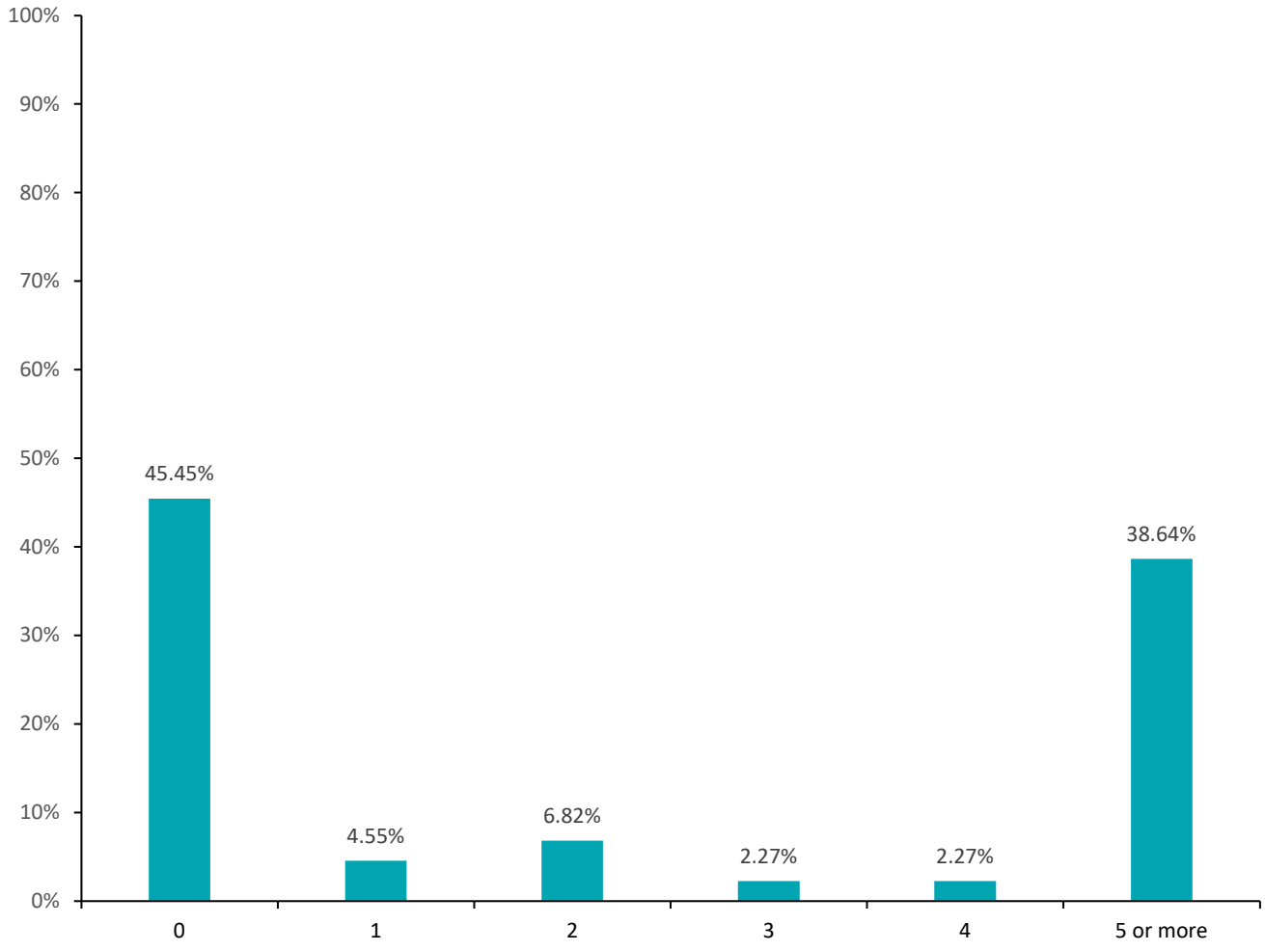
Answer Choices	Responses	
On-street	18.52%	10
Public Parking garage	24.07%	13
Public Surface lot	48.15%	26
On-site parking facility	9.26%	5
	Answered	**54**
	Skipped	**1045**



Q12. How many on-site parking spaces are provided for your place of employment in the Heritage District?
*This question was only asked of those indicating they work in the Heritage District.

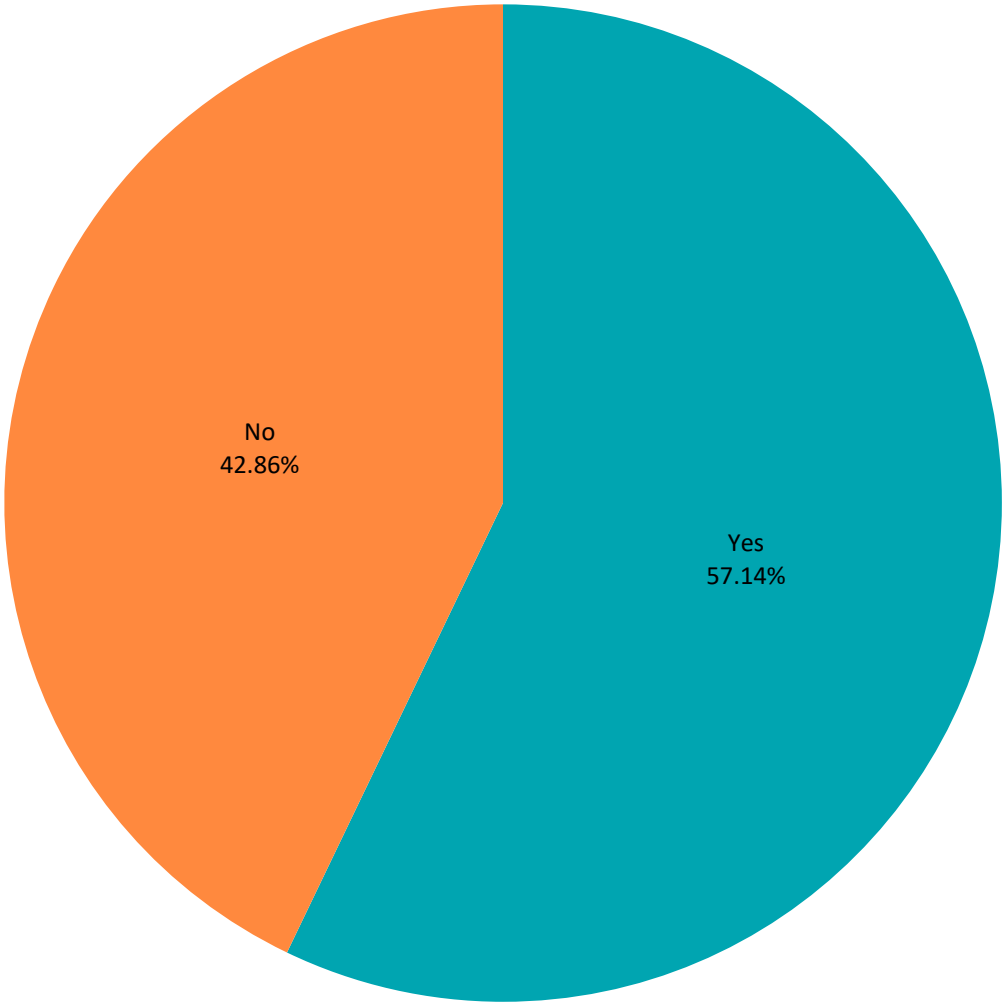
Answer Choices	Responses	
0	45.45%	20
1	4.55%	2
2	6.82%	3
3	2.27%	1
4	2.27%	1
5 or more	38.64%	17
	Answered	**44**
	Skipped	**1055**

Minimum response:	0 per employer
Maximum response:	100+ per employer
Average response:	10.48 per employer
Median response:	1.5 per employer



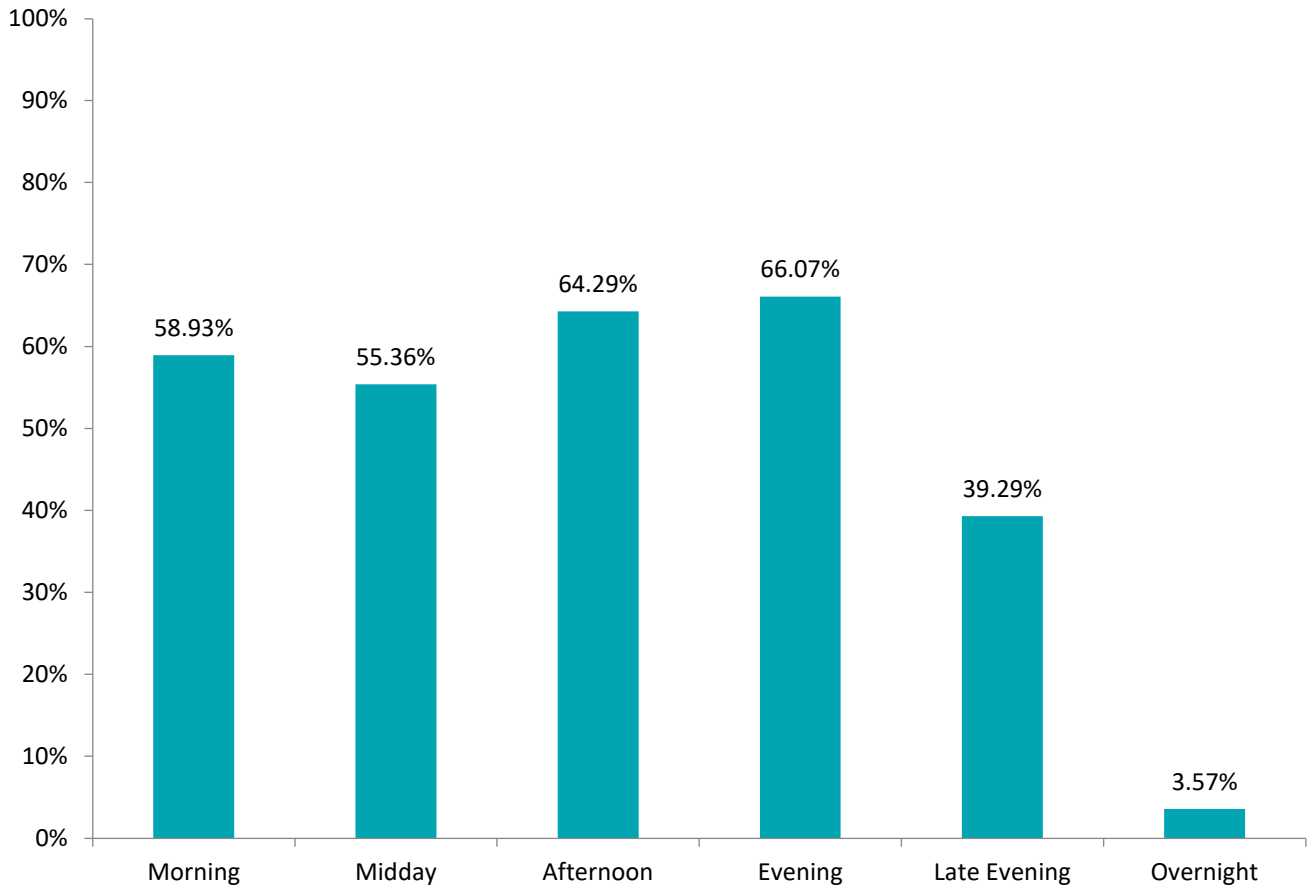
Q13. Does the provided on-site parking adequately meet the needs of your place of employment?
*This question was only asked of those indicating they work in the Heritage District.

Answer Choices	Responses	
Yes	57.14%	32
No	42.86%	24
	Answered	**56**
	Skipped	**1043**



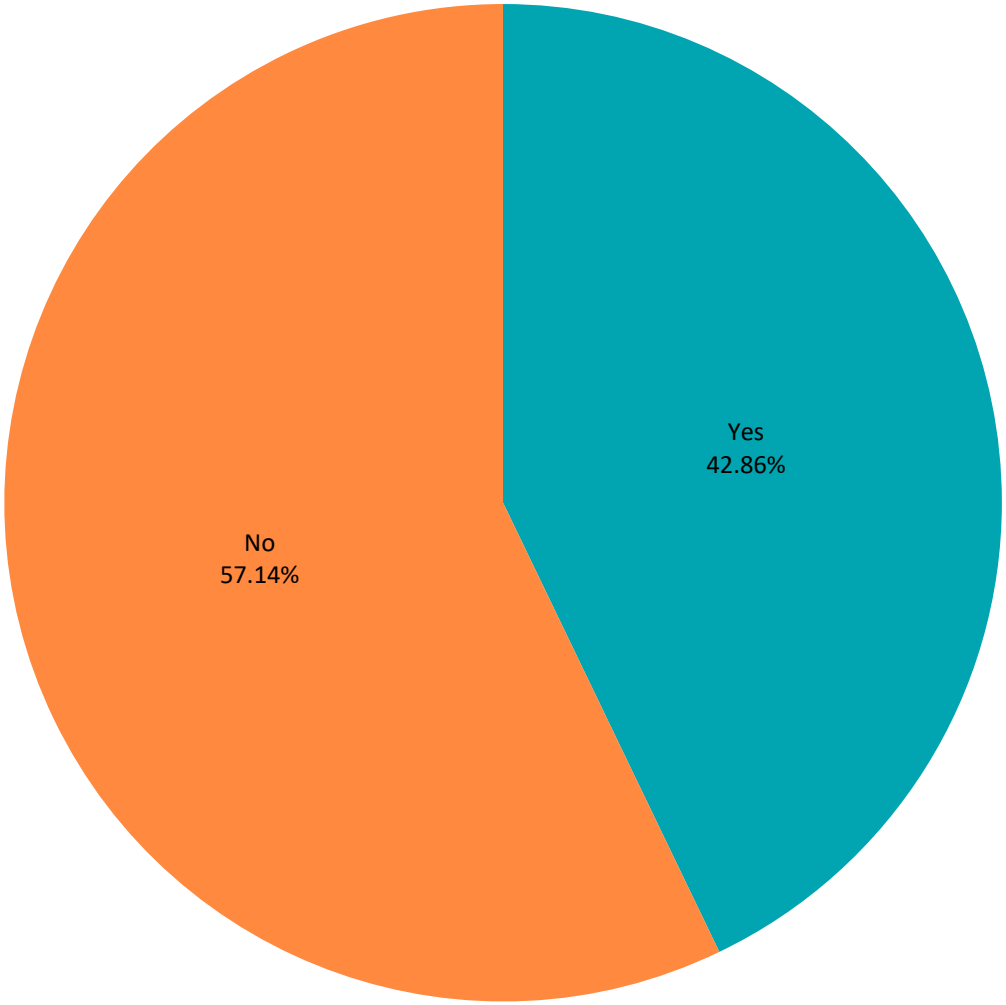
Q14. What hours do you typically work in the Heritage District? (choose all the hour(s) that apply during which you most frequently work)
*This question was only asked of those indicating they work in the Heritage District.

Answer Choices	Responses	
Morning	58.93%	33
Midday	55.36%	31
Afternoon	64.29%	36
Evening	66.07%	37
Late Evening	39.29%	22
Overnight	3.57%	2
	Answered	**56**
	Skipped	**1043**



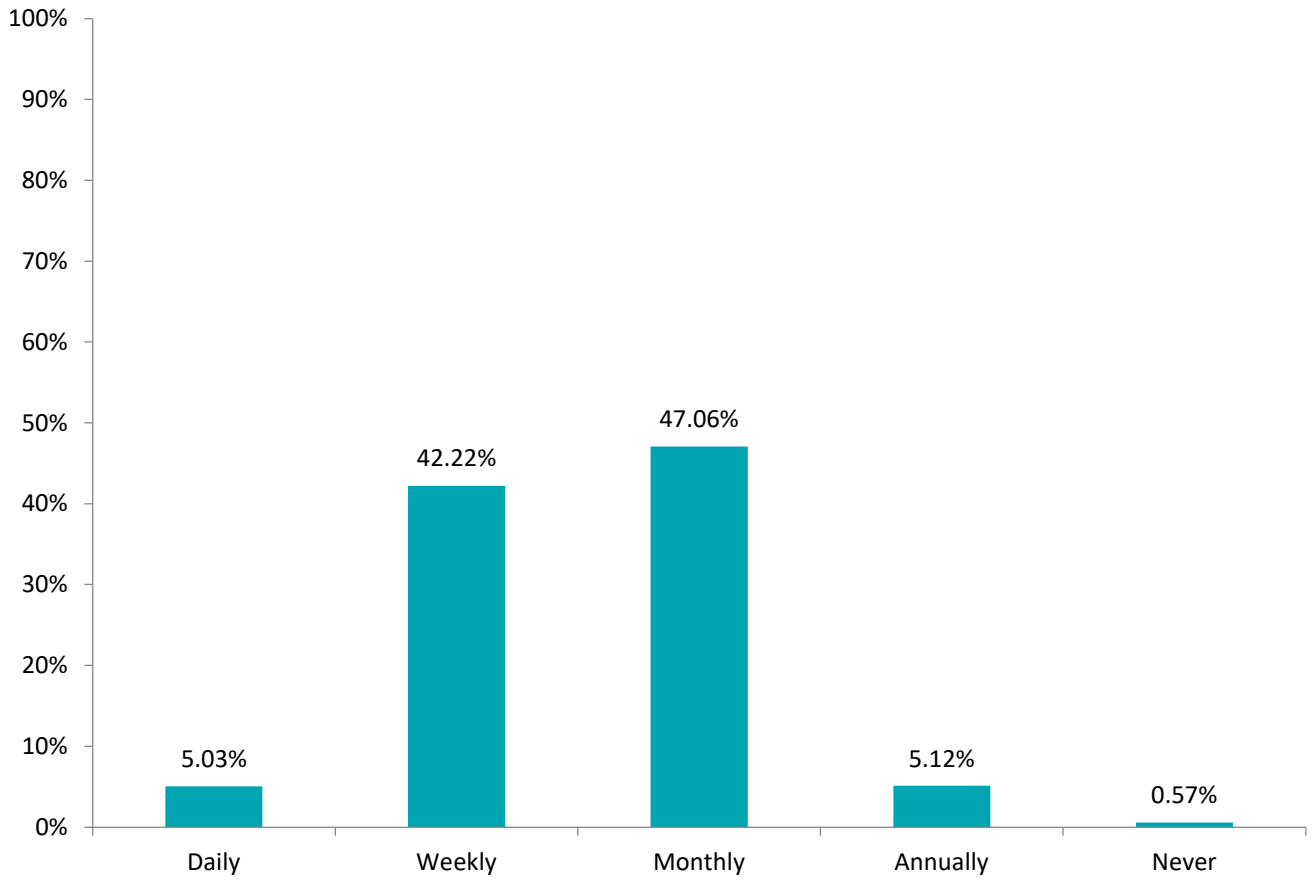
Q15. If you had access to real time parking availability in the Heritage District (app, website, dynamic signage), would you be willing to park one to two blocks further knowing space was available rather than circle to look for an open space?
*This question was only asked of those indicating they work in the Heritage District.

Answer Choices	Responses	
Yes	42.86%	24
No	57.14%	32
	Answered	**56**
	Skipped	**1043**



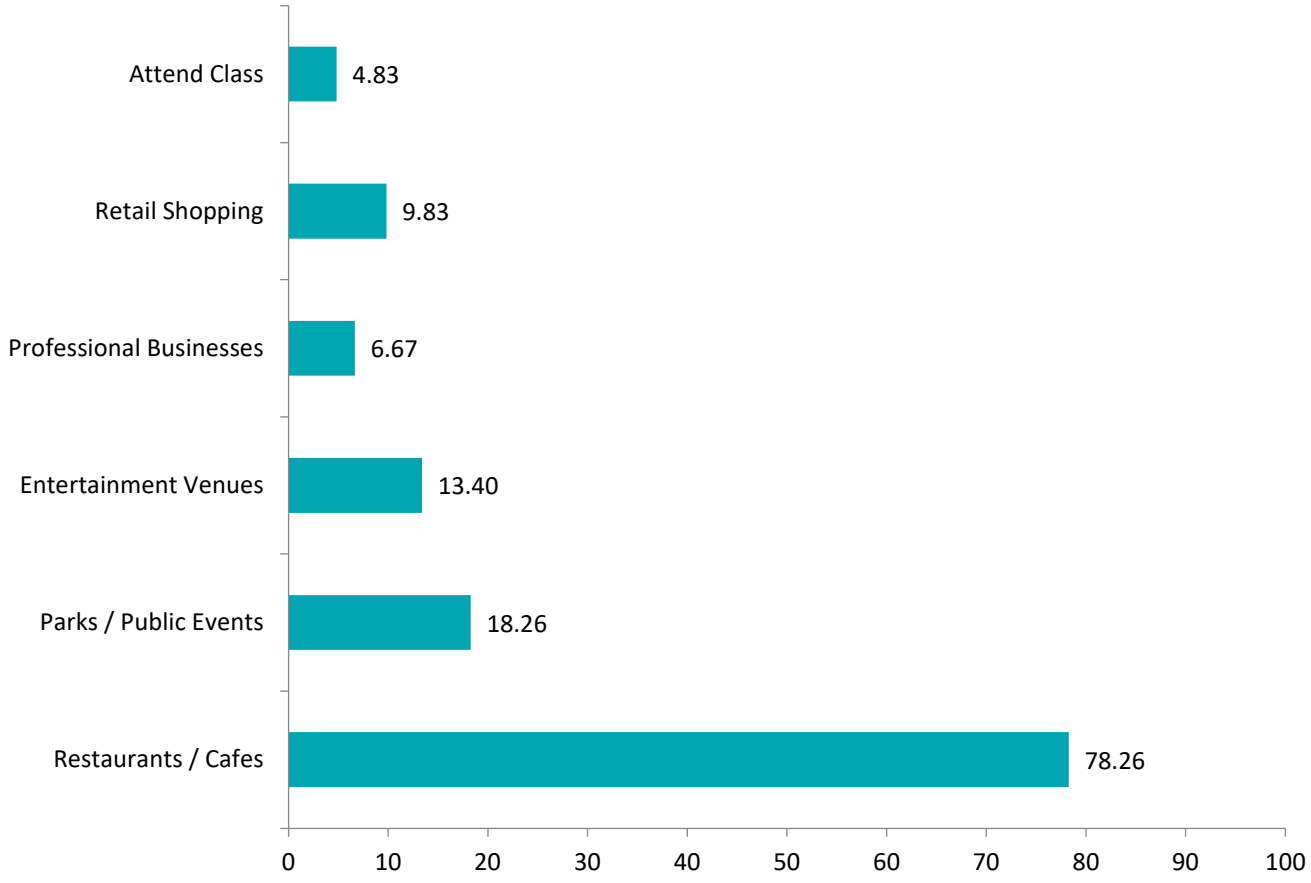
Q16. Approximately how often do you visit the Heritage District?

Answer Choices	Responses	
Daily	5.03%	53
Weekly	42.22%	445
Monthly	47.06%	496
Annually	5.12%	54
Never	0.57%	6
	Answered	**1054**
	Skipped	**45**



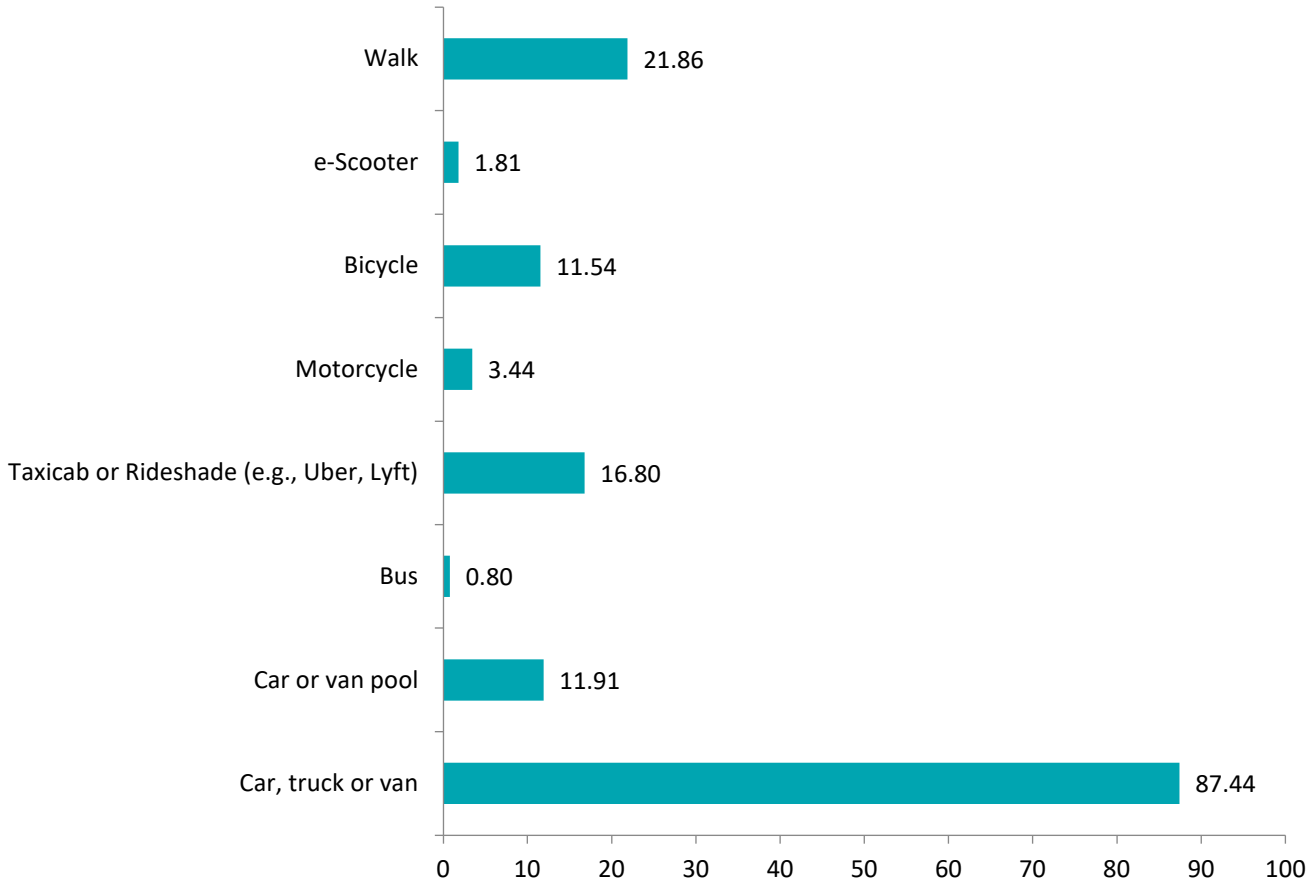
Q17. Why do you typically visit the Heritage District? (Distribute the percentage of your trips among the following options; percentage distribution among options must total 100%)

Answer Choices	Average Number	Total Number	Responses	
Restaurants / Cafes	78.2595339	73877	99.68%	944
Parks / Public Events	18.26226415	9679	55.97%	530
Entertainment Venues	13.40394089	5442	42.87%	406
Professional Businesses	6.668202765	1447	22.91%	217
Retail Shopping	9.833827893	3314	35.59%	337
Attend Class	4.825641026	941	20.59%	195
			Answered	**947**
			Skipped	**152**



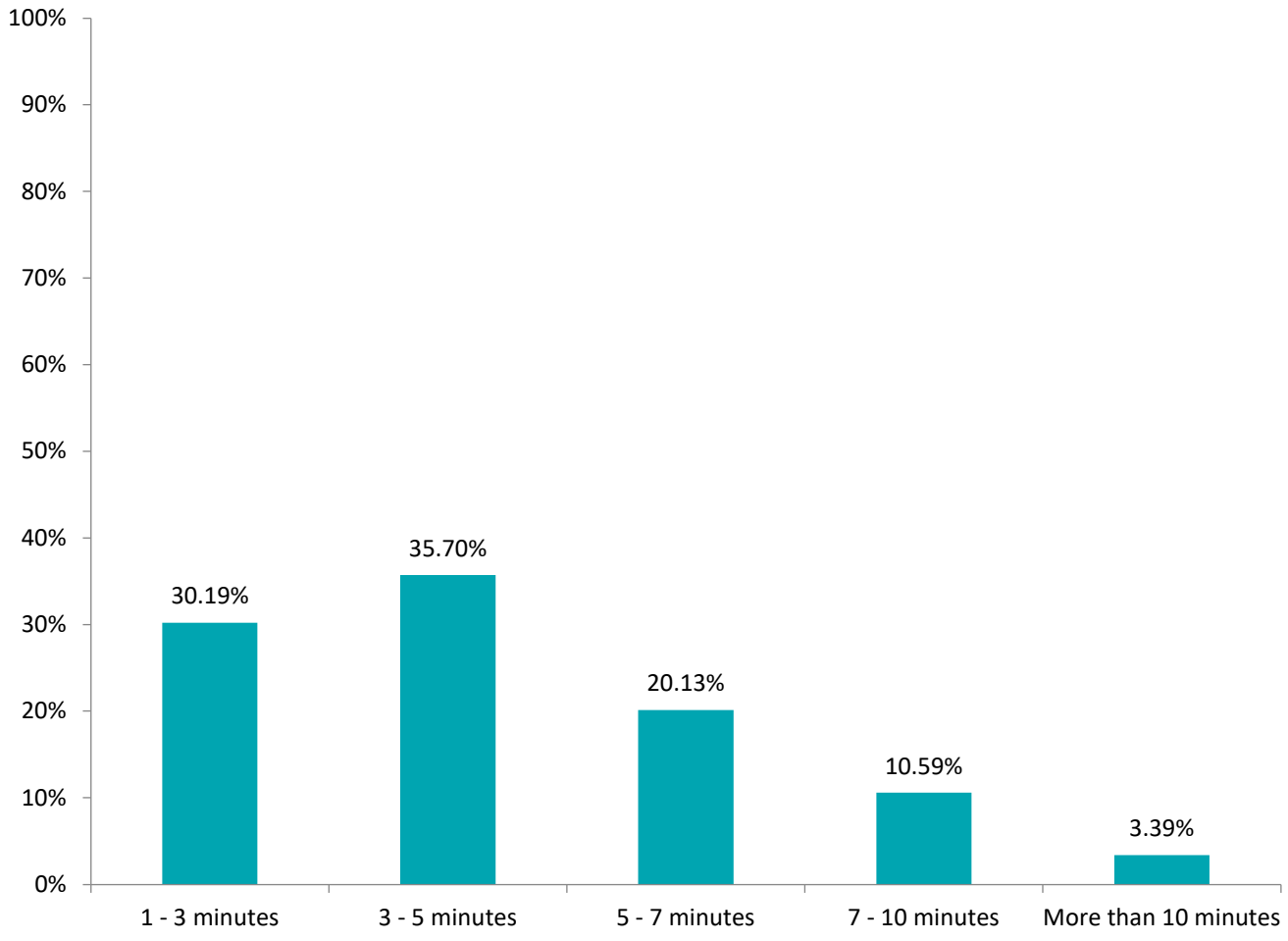
Q18. How do you typically travel to the Heritage District? (Distribute the percentage of your trips among the following options; percentage distribution among options must total 100%)

Answer Choices	Average Number	Total Number	Responses	
Car, truck or van	87.43899782	80269	97.25%	918
Car or van pool	11.91156463	1751	15.57%	147
Bus	0.803571429	90	11.86%	112
Taxicab or Rideshade (e.g., Uber, Lyft)	16.80073801	4553	28.71%	271
Motorcycle	3.442622951	420	12.92%	122
Bicycle	11.53731343	2319	21.29%	201
e-Scooter	1.810344828	210	12.29%	116
Walk	21.8630137	4788	23.20%	219
			Answered	**944**
			Skipped	**155**



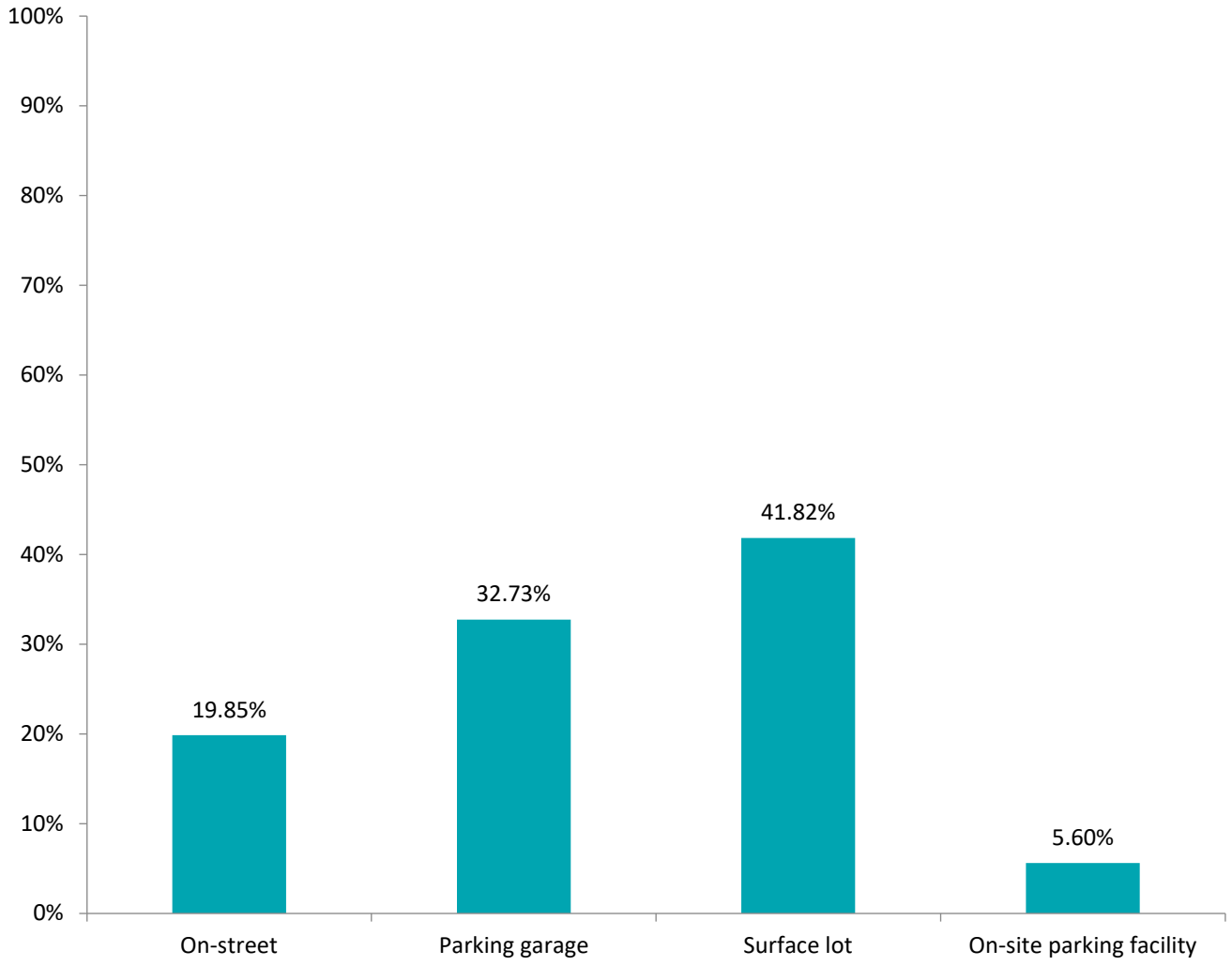
Q19. How long does it typically take you to find a parking space?

Answer Choices	Responses	
1 - 3 minutes	30.19%	285
3 - 5 minutes	35.70%	337
5 - 7 minutes	20.13%	190
7 - 10 minutes	10.59%	100
More than 10 minutes	3.39%	32
	Answered	**944**
	Skipped	**155**



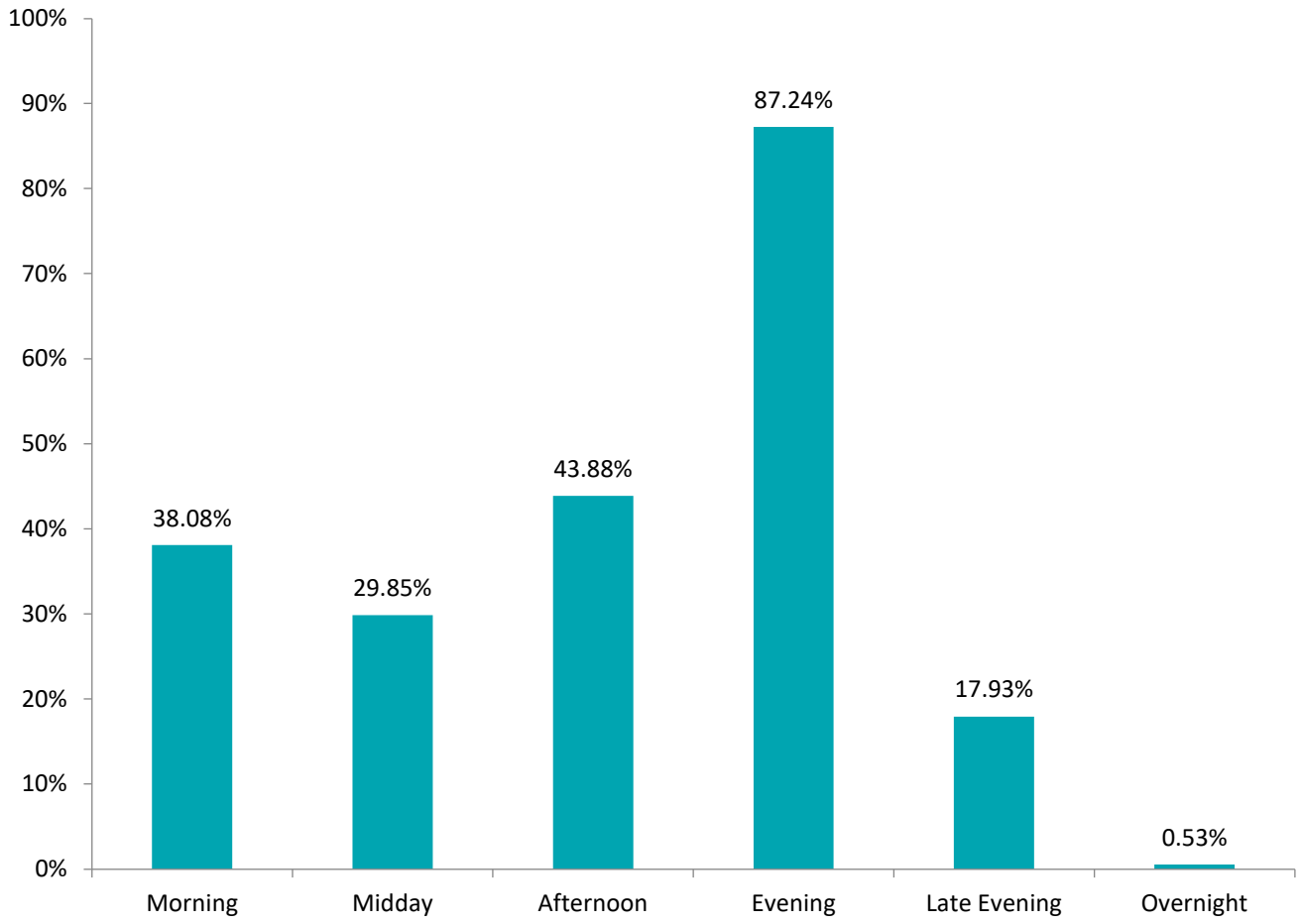
Q20. Where do you generally look FIRST for parking when you visit?

Answer Choices	Responses	
On-street	19.85%	188
Parking garage	32.73%	310
Surface lot	41.82%	396
On-site parking facility	5.60%	53
	Answered	**947**
	Skipped	**152**



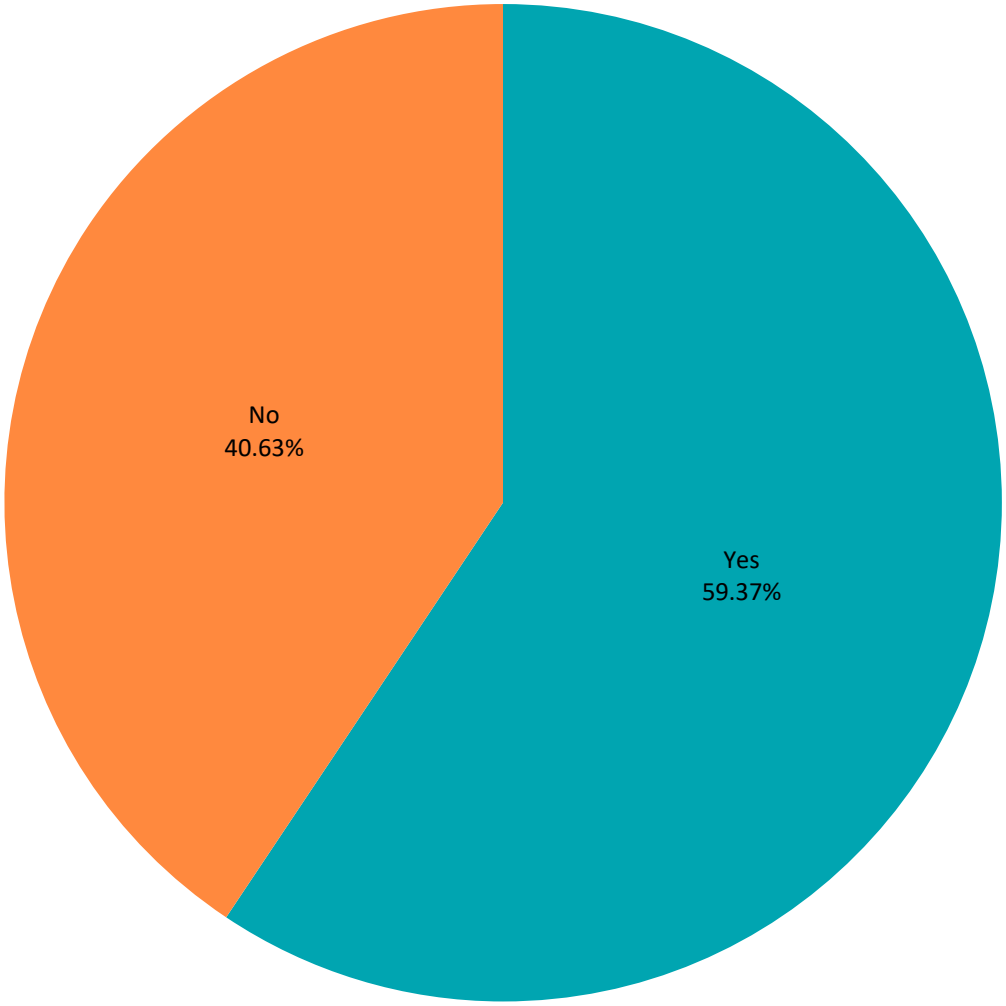
Q21. When do you typically visit the Heritage District? (choose all the hour(s) that apply during which you most frequently visit)

Answer Choices	Responses	
Morning	38.08%	361
Midday	29.85%	283
Afternoon	43.88%	416
Evening	87.24%	827
Late Evening	17.93%	170
Overnight	0.53%	5
	Answered	**948**
	Skipped	**151**



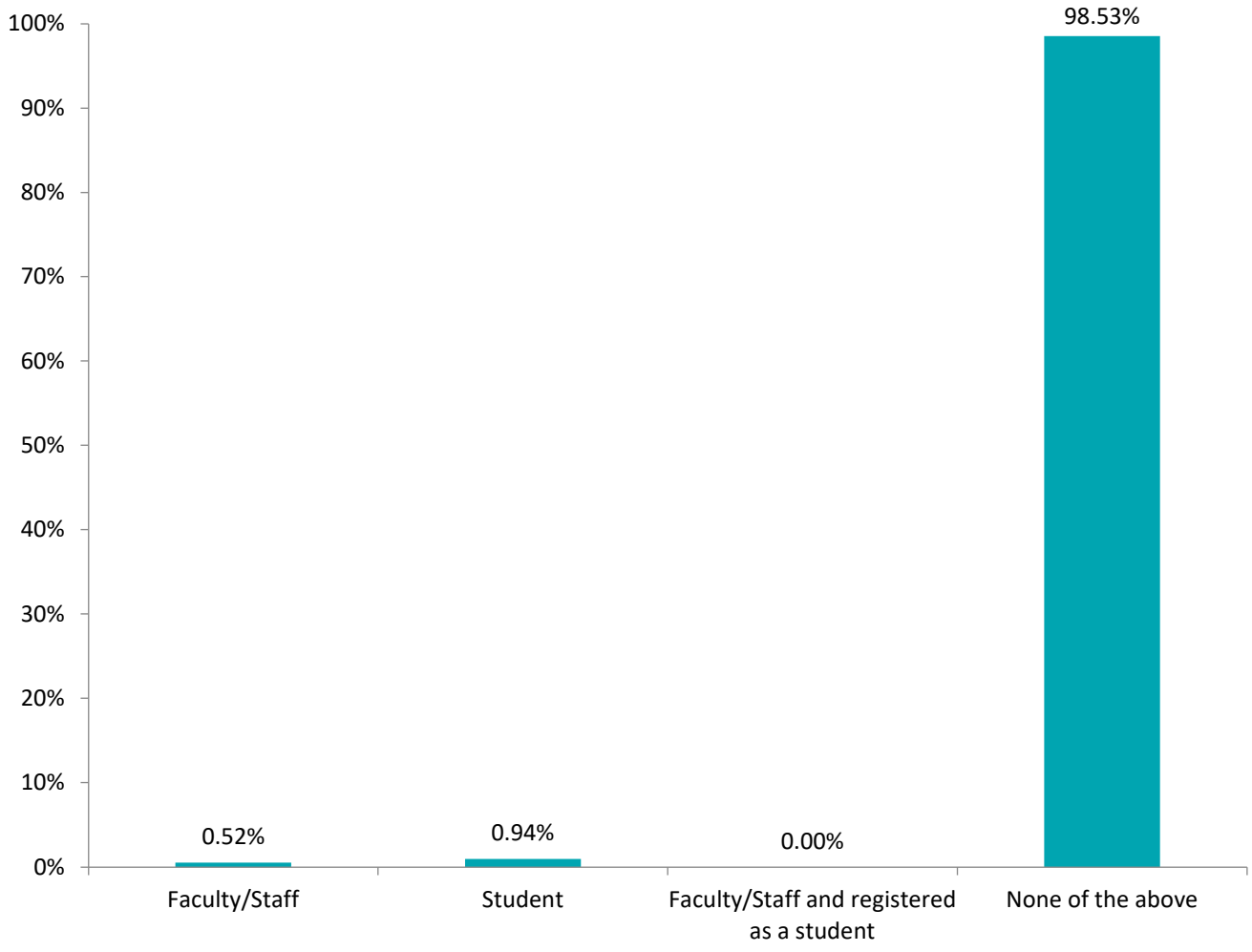
Q22. If you had access to real time parking availability in the Heritage District (app, website, dynamic signage), would you be willing to park one to two blocks further knowing space was available rather than circling to find a space?

Answer Choices	Responses	
Yes	59.37%	564
No	40.63%	386
	Answered	**950**
	Skipped	**149**



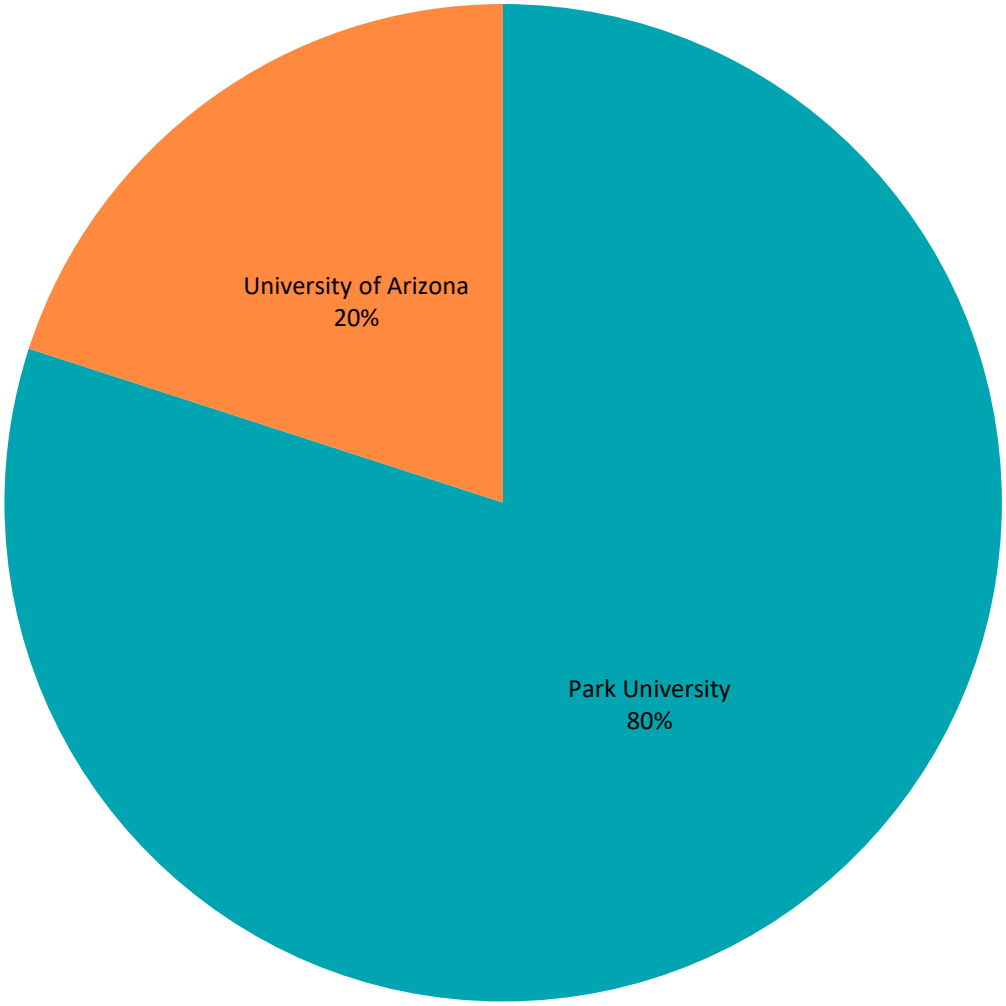
Q23. Which best describes your current affiliations with Park University or the University of Arizona in the Heritage District?

Answer Choices	Responses	
Faculty/Staff	0.52%	5
Student	0.94%	9
Faculty/Staff and registered as a student	0.00%	0
None of the above	98.53%	940
	Answered	**954**
	Skipped	**145**



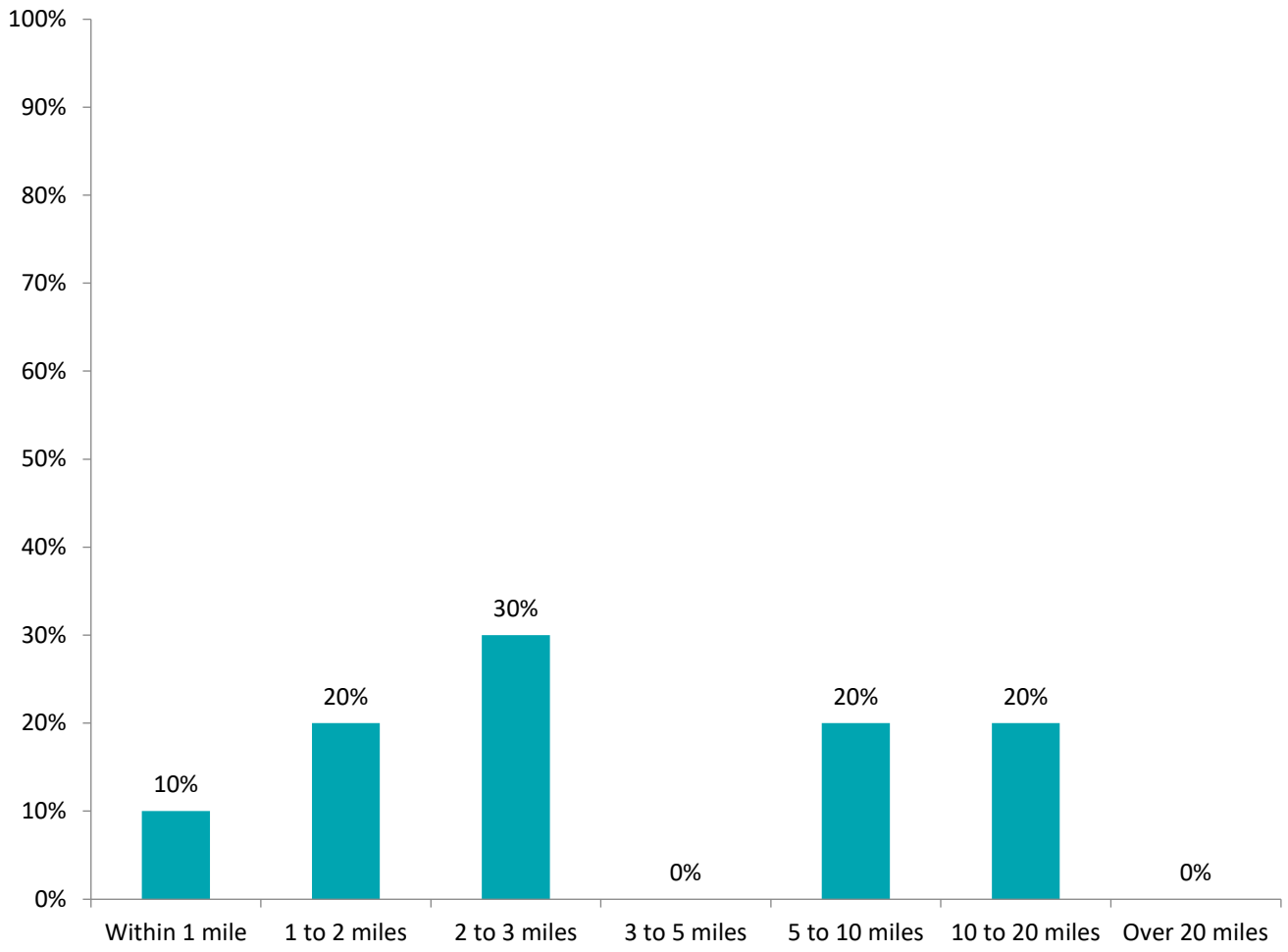
Q24. Select the university with which you are affiliated:
*This question was only asked of those that indicated they are affiliated with Park University or University of Arizona in the Heritage District.

Answer Choices	Responses	
Park University	80.00%	8
University of Arizona	20.00%	2
	Answered	**10**
	Skipped	**1089**



Q25. Approximately how far from the University do you live during the academic year?
*This question was only asked of those that indicated they are affiliated with Park University or University of Arizona in the Heritage District.

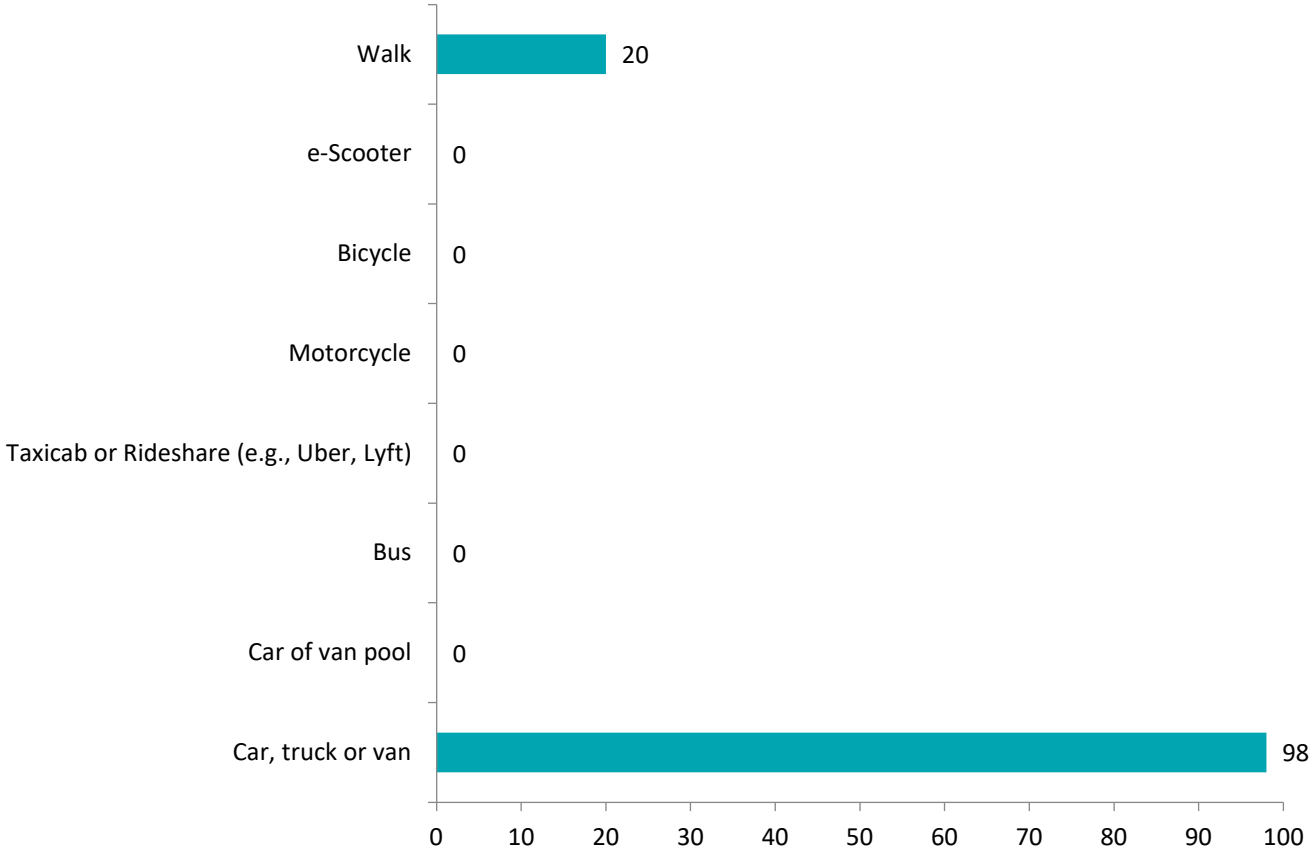
Answer Choices	Responses	
Within 1 mile	10.00%	1
1 to 2 miles	20.00%	2
2 to 3 miles	30.00%	3
3 to 5 miles	0.00%	0
5 to 10 miles	20.00%	2
10 to 20 miles	20.00%	2
Over 20 miles	0.00%	0
	Answered	**10**
	Skipped	**1089**



Q26. How do you typically travel to the University? (Distribute the percentage of your trips among the following options; percentage distribution among options must total 100%)
*This question was only asked of those that indicated they are affiliated with Park University or University of Arizona in the Heritage District.

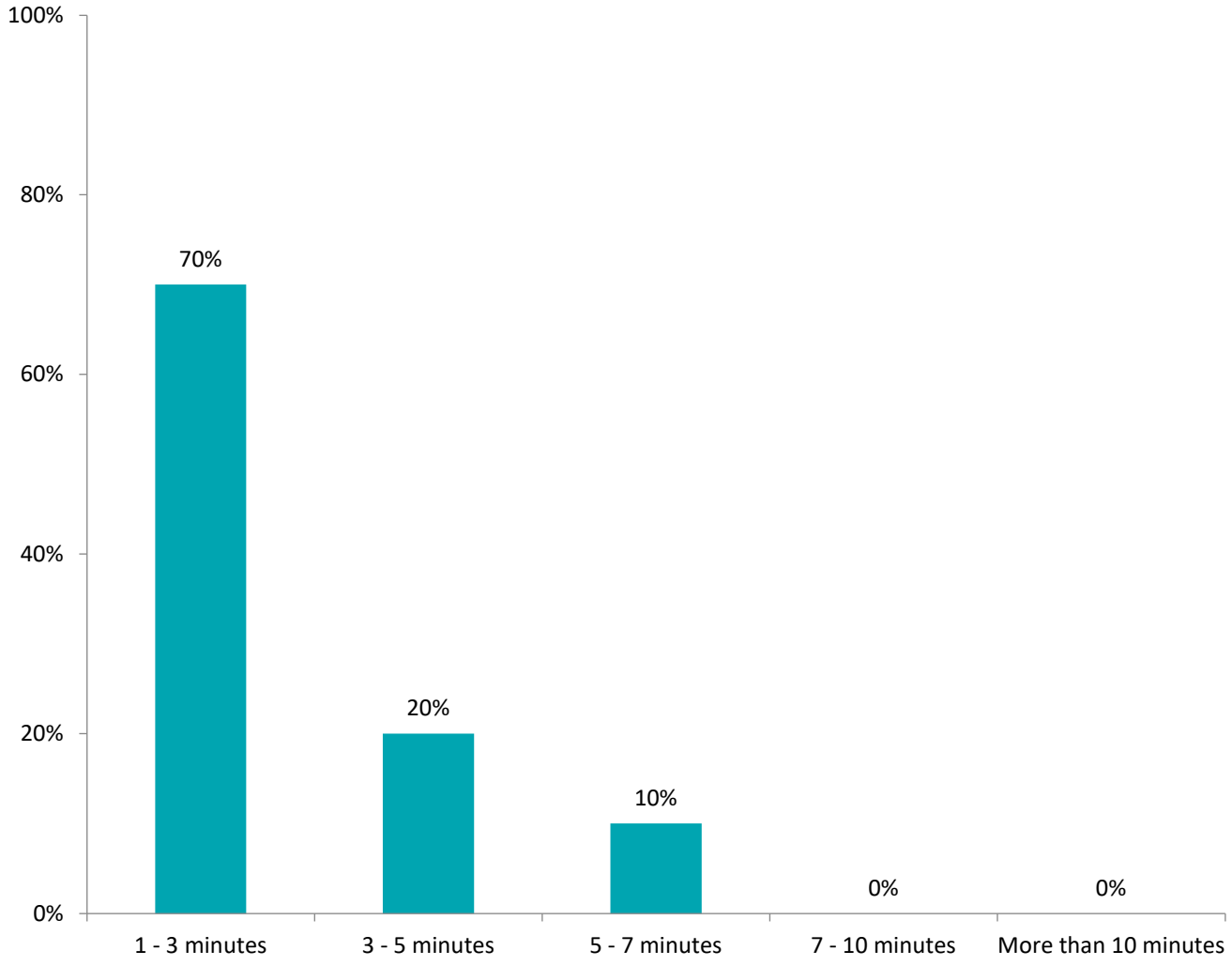
Answer Choices	Average Number	Total Number	Responses	
Car, truck or van	98	980	100.00%	10
Car of van pool	0	0	0.00%	0
Bus	0	0	0.00%	0
Taxicab or Rideshare (e.g., Uber, Lyft)	0	0	0.00%	0
Motorcycle	0	0	0.00%	0
Bicycle	0	0	0.00%	0
e-Scooter	0	0	0.00%	0
Walk	20	20	10.00%	1
			Answered	**10**

Skipped **1089**



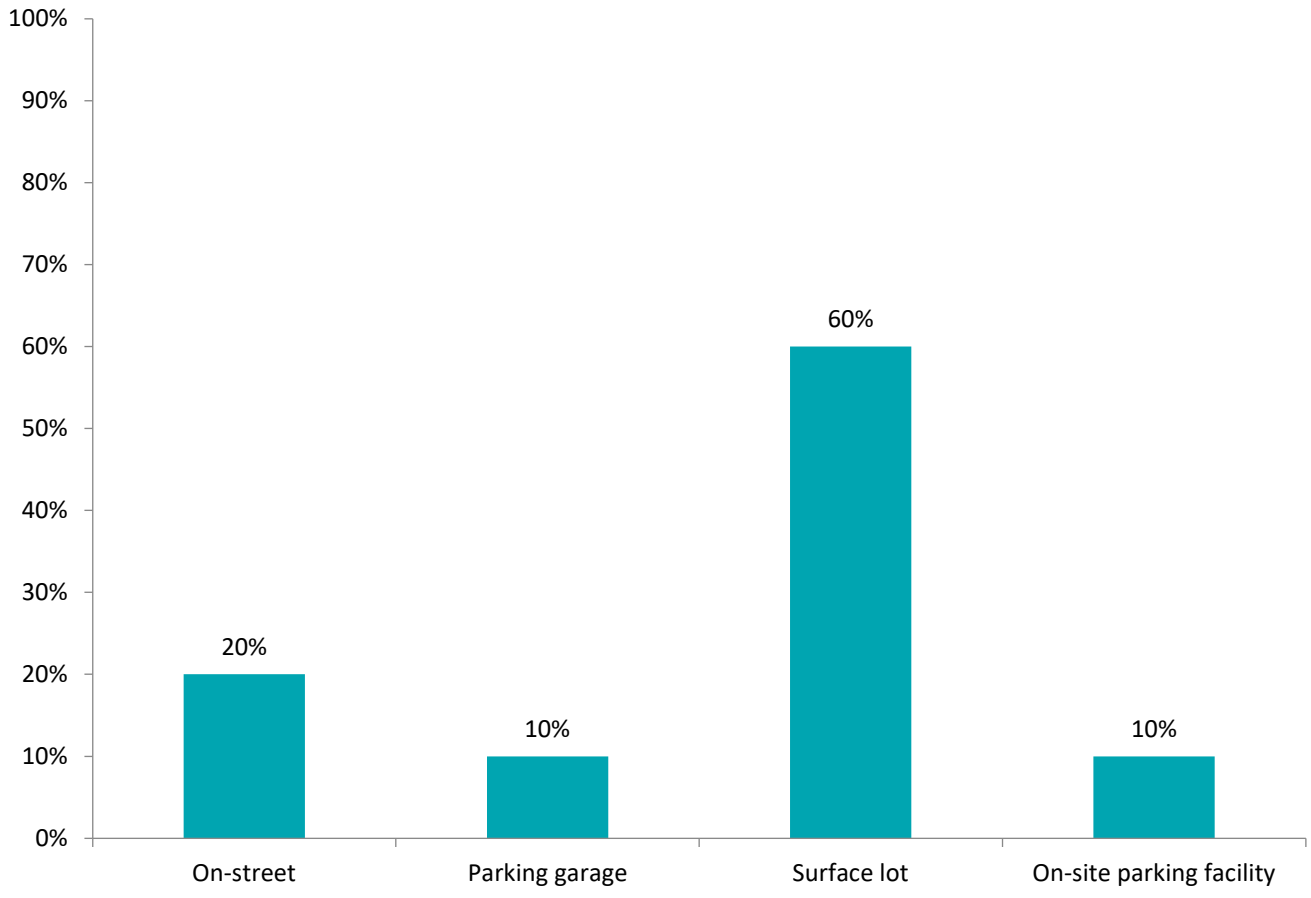
Q27. How long does it typically take you to find a parking space at the University?
*This question was only asked of those that indicated they are affiliated with Park University or University of Arizona in the Heritage District.

Answer Choices	Responses	
1 - 3 minutes	70.00%	7
3 - 5 minutes	20.00%	2
5 - 7 minutes	10.00%	1
7 - 10 minutes	0.00%	0
More than 10 minutes	0.00%	0
	Answered	**10**
	Skipped	**1089**



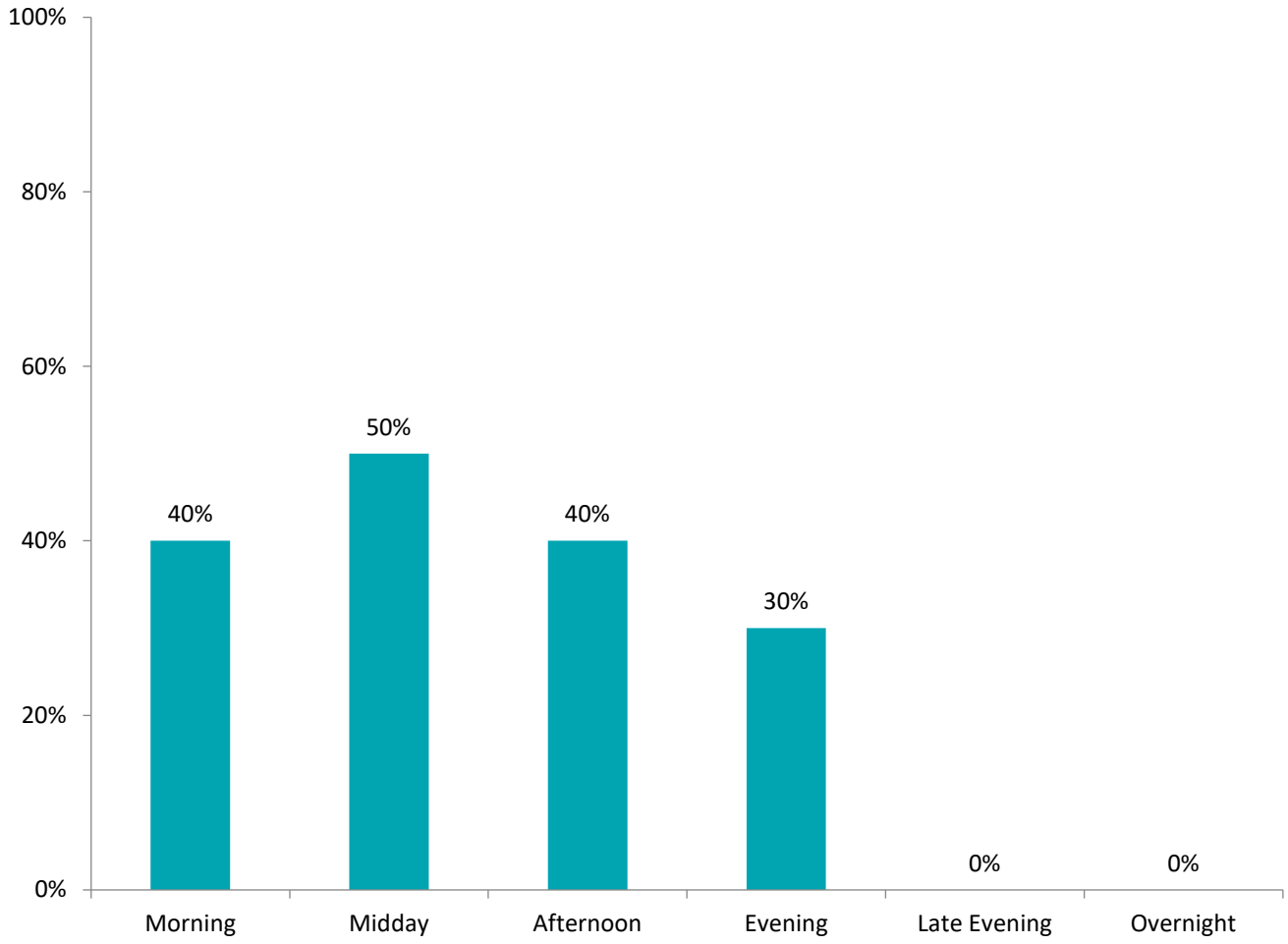
Q28. Where do you generally look FIRST for parking when you visit the University?
*This question was only asked of those that indicated they are affiliated with Park University or University of Arizona in the Heritage District.

Answer Choices	Responses	
On-street	20.00%	2
Parking garage	10.00%	1
Surface lot	60.00%	6
On-site parking facility	10.00%	1
	Answered	**10**
	Skipped	**1089**



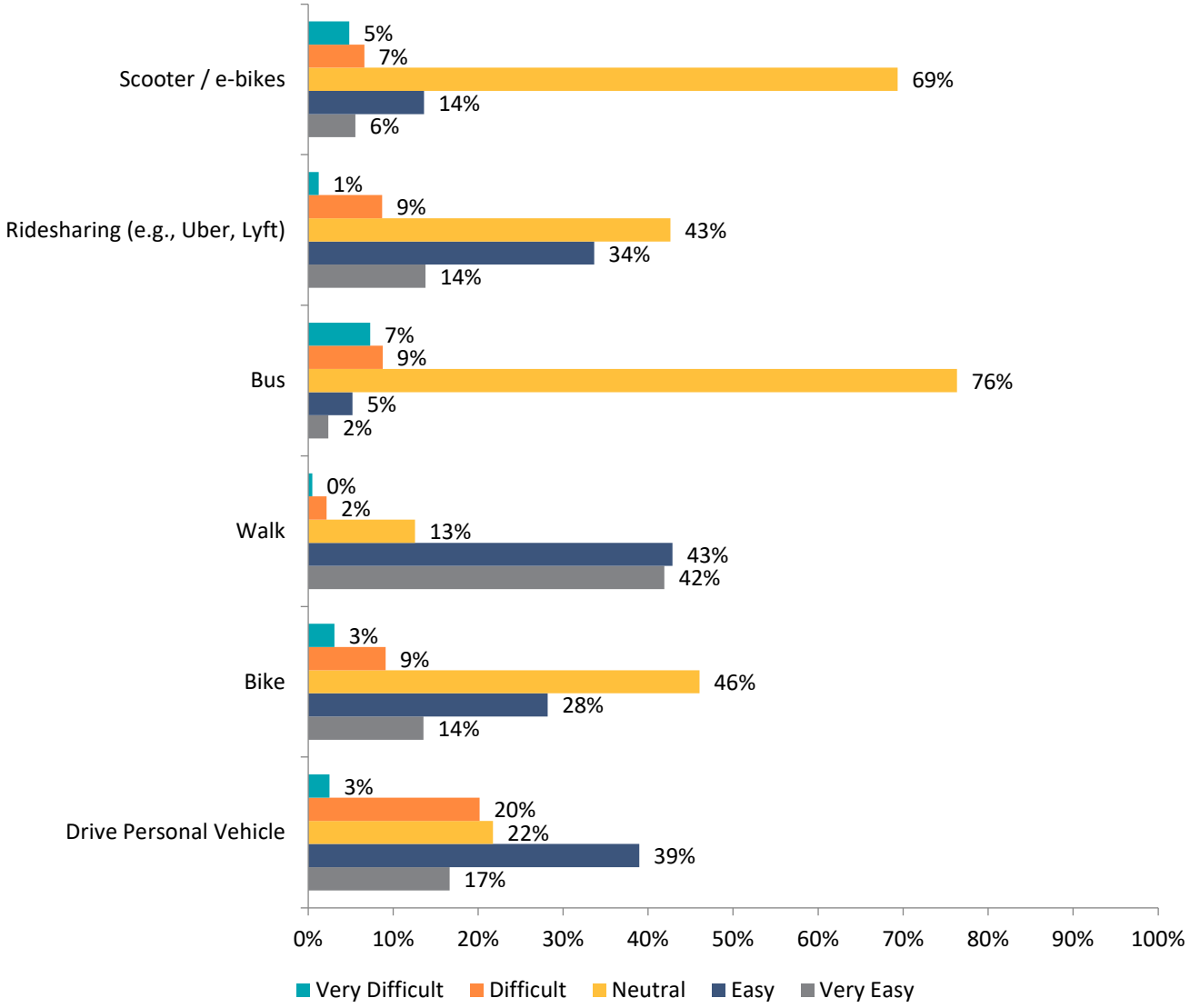
Q29. When do you typically arrive on campus? (choose all the hour(s) that apply during which you most frequently visit the University)
*This question was only asked of those that indicated they are affiliated with Park University or University of Arizona in the Heritage District.

Answer Choices	Responses	
Morning	40.00%	4
Midday	50.00%	5
Afternoon	40.00%	4
Evening	30.00%	3
Late Evening	0.00%	0
Overnight	0.00%	0
	Answered	**10**
	Skipped	**1089**


100%
80%
60%
40%
20%
0%
40%
50%
40%
30%
0%
0%
Morning
Midday
Afternoon
Evening
Late Evening
Overnight

Q30. Rate the ease of mobility within the Heritage District for each mode of transportation.

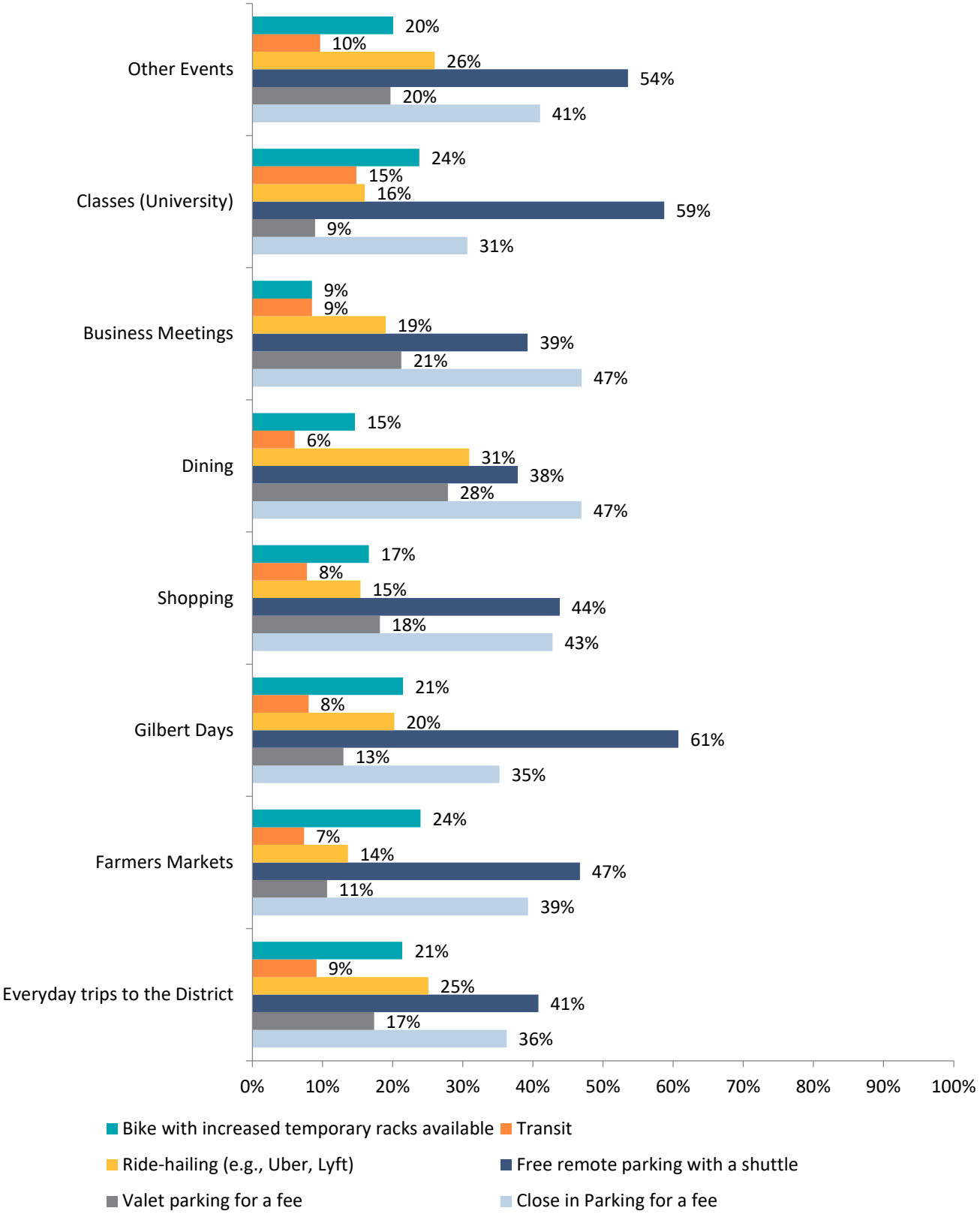
	Very Easy	Easy	Neutral	Difficult	Very Difficult	Total
Drive Personal Vehicle	146	342	191	177	22	878
Bike	101	210	343	68	23	745
Walk	347	355	104	18	4	828
Bus	16	35	513	59	49	672
Ridesharing (e.g., Uber, Lyft)	100	244	309	63	9	725
Scooter / e-bikes	38	93	473	45	33	682
					Answered	**878**
					Skipped	**221**



Q31. For the following types of trips, I would consider using:

	Close in Parking for a fee	Valet parking for a fee	Free remote parking with a shuttle	Ride-hailing (e.g., Uber, Lyft)	Transit	Bike with increased temporary racks available	Total
Everyday trips to the District	234	112	263	162	59	138	645
Farmers Markets	251	68	298	87	47	153	638
Gilbert Days	228	84	393	131	52	139	647
Shopping	247	105	253	89	45	96	577
Dining	311	185	251	205	40	97	663
Business Meetings	232	105	194	94	42	42	494
Classes (University)	130	38	249	68	63	101	424
Other Events	229	110	299	145	54	112	558
						Answered	**737**
						Skipped	**362**

(Corresponding graph on following page)


Other Events
20%
10%
26%
54%
20%
41%
Classes (University)
24%
15%
16%
59%
9%
31%
Business Meetings
9%
9%
19%
39%
21%
47%
Dining
15%
6%
31%
38%
28%
47%
Shopping
17%
8%
15%
44%
18%
43%
Gilbert Days
21%
8%
20%
61%
13%
35%
Farmers Markets
24%
7%
14%
47%
11%
39%
Everyday trips to the District
21%
9%
25%
41%
17%
36%
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Bike with increased temporary racks available
Transit
Ride-hailing (e.g., Uber, Lyft)
Free remote parking with a shuttle
Valet parking for a fee
Close in Parking for a fee

Q32, 34, & 36. In terms of where you park for ___, rank the following three priorities in terms of preference in a parking location where 1 is the highest priority in your decision-making process.

Home

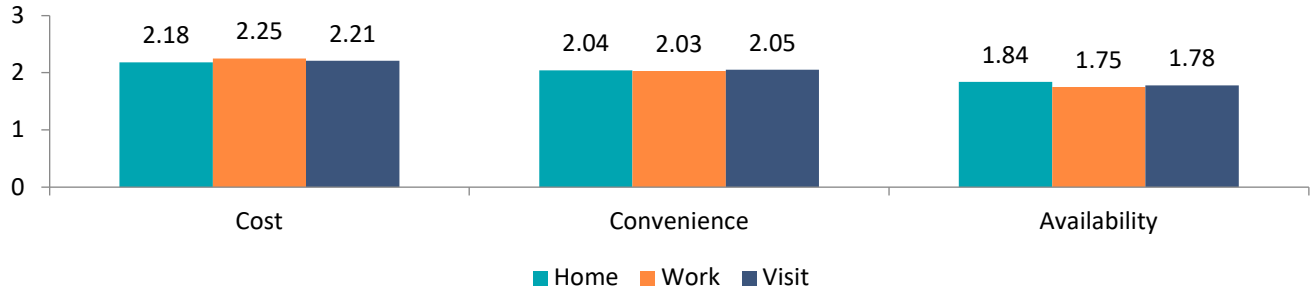
	1	2	3	Total	Score
Cost - parking is provided free or at a lower cost (or with no or longer time limits)	337	138	216	691	2.18
Convenience - parking is located close to your destination	219	287	188	694	2.04
Availability - parking is abundant and easy to find	161	276	277	714	1.84
				Answered	**722**
				Skipped	**377**

Work

	1	2	3	Total	Score
Cost - parking is provided free or at a lower cost (or with no or longer time limits)	356	109	194	659	2.25
Convenience - parking is located close to your destination	192	300	169	661	2.03
Availability - parking is abundant and easy to find	128	250	294	672	1.75
				Answered	**678**
				Skipped	**421**

Visit

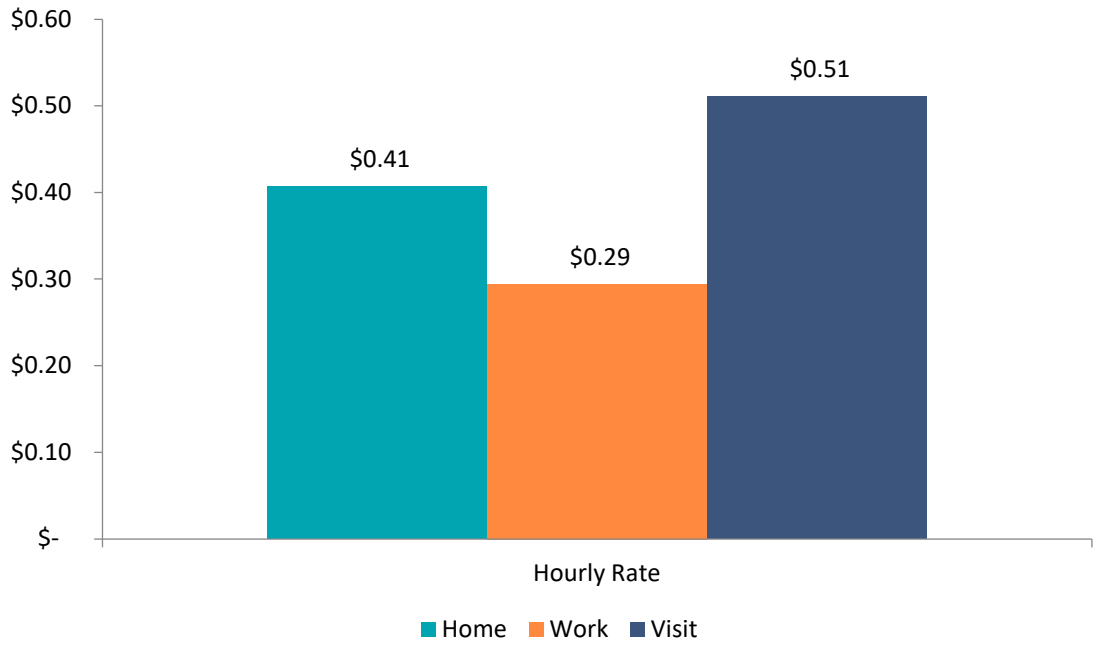
	1	2	3	Total	Score
Cost - parking is provided free or at a lower cost (or with no or longer time limits)	336	151	192	679	2.21
Convenience - parking is located close to your destination	212	287	181	680	2.05
Availability - parking is abundant and easy to find	147	241	295	683	1.78
				Answered	**698**
				Skipped	**401**

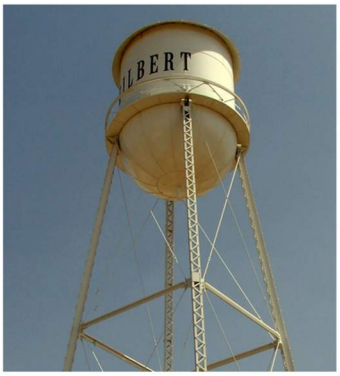


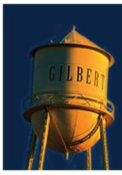
Q.33, 35, 37 Please indicate the maximum hourly price you would consider for parking that is closer to your home and available immediately, before you would park further away and/or circle for an undetermined period of time waiting for a space to become available.

Note: Respondents were presented a sliding scale of $0.25 to $2.25. The average number is a value of 0-100 which can be converted to a dollar value by factoring it as a percentage of the upper limit of the scale provided in the question ($2.25).

Answer Choices	Average Number	Converted Value	Responses	
Home	18.10162003	$0.41	100.00%	679
Work	13.07266983	$0.29	100.00%	633
Visit	22.69026549	$0.51	100.00%	678







Heritage District
Parking Master Plan