The Research Bureau

FEEDING THE METER

Public Parking Usage in Worcester

REPORT 24-07

July 2024

EXECUTIVE SUMMARY

PARKING, is a difficult issue in many cities. Plentiful parking is necessary where the personal automobile is the dominant mode of transportation; and even if other modes predominate, some amount of parking is still necessary. No matter how much parking a city might have, it can still be a charged political issue.

In many cities, including in Worcester, the municipal government provides some public off-street parking, creates the rules for on-street parking, and governs the creation of parking in new and existing developments.

This report, **Part 1 of a two-part Bureau series on parking**, dives into the public data from city-owned garages and surface lots, as well as data on on-street parking use. **Feeding the Meter** finds that parking in city facilities has been strong since a 2021 downturn, but that some garages are under-performing. In addition, since the City adopted a Department of Transportation and Mobility and switched on-street parking to kiosks and a mobile app, it has seen more people using the mobile app year over year.

PAGES 3-6 | DISCUSSES THE GENERAL STATE OF PARKING IN WORCESTER

- Worcester has **five municipally owned garages and five public surface lots** open-year round. Two more lots, the MBTA/Amtrak and Grafton St Lots are managed by the City. All are located in Downtown or the Canal District.
- These garages and lots represent **over 4,000 parking spaces**, on top of the many parking spaces available in privately owned garages and lots.
- Maps on page 5 show **the extent of public and private parking** in Downtown, the Canal District, and down Park Ave.
- The City has **paid, on-street parking located primarily Downtown,** with pockets elsewhere. A map of these is located on page 6.

PAGES 6-11 | ANALYZES MOBILE APP AND KIOSK DATA FOR ON-STREET PARKING

- In 2021, the City replaced single space meters with **pay-by-plate, using centralized kiosks and mobile app zones** to keep track of parking.
- Since the adoption of the mobile app, **each month of app use has seen higher revenue than the same month the year before**, and each year has collected more revenue than the year before in the app.
- Average time for on-street parking transactions has remained stable since 2021, **but each year has seen greater time spent in the non-gated surface lots**.
- Kiosks have seen slightly greater revenue collection than the mobile app, but **have not seen year-over-year growth**
- Both **app and kiosk usage see revenue drop offs in July, and in the Fall months**; during baseball season, two lots, Lamartine and Madison St, are included in the app and kiosk usage numbers as they are Polar Event Lots only. They are not otherwise used for parking.

PAGES 12-16 | EXAMINES MONTHLY OCCUPANCY OF THE MUNICIPAL GARAGES AND THE MCGRATH LOT

- The McGrath (Library) Lot is included in this data as it has gated access and a similar payment system to the garages.
- Just like the use of on-street and surface lots sees a reduction in July, the **garages and gated lots in general see a reduction in use over the same time frame.**
- **By far the most used garage is Major Taylor**; whether that is monthly pass holders or transient users (temporary parkers), Major Taylor is consistently the top garage for occupancy. **Federal Plaza is a close second.**
- In terms of volume of users, **McGrath had more monthly pass users entering it each month than either Union Station or Worcester Common**, every month between December 2022 and April 2024.
- **Pearl Elm is the only garage with fewer average transient users each month than its average number of monthly pass holders users**.
- Major Taylor **has the most transient users between 5 AM and Midnight on Weekends** in the period under study; and **for most months had the most monthly pass users during the same time frame on weekdays**.

INTRODUCTION

Parking, in any city in the United States, is a contentious issue. After all, so much of the American city has been designed around the use and proliferation of the personal automobile. Even if the typical American City was to increase mass-transit, it would still need to figure out a way to accommodate personal vehicles. But how can a city balance parking—static lots, street spaces, or garages—with other forms of economic development or housing? Every foot of parking is one less foot for housing, business, civic space, open space, parks, sidewalks, or any myriad of other desirable uses.

This report, in both this and part two, aims to examine parking within Worcester. **Part One** will look at data regarding the usage of City-owned on- and off- street parking; i.e., it will describe parking as it exists today within Worcester. Indeed, it is focused on publicly-owned and managed paid parking in the City. **Cities charge for parking for a variety of reasons**, including to pay for its maintenance and upkeep, to encourage turnover for businesses reliant on public parking, and to help balance demand and parking supply. **Part Two** will describe the history of Downtown parking since the 1920s in Worcester, and focus largely on parking minimums required by zoning for new development. Part Two will conclude with questions and considerations from the Bureau on the future of parking in the City.

While reading Part One, readers should keep in mind the following: building parking is expensive. It is expensive to construct and to maintain, of course; and increasing the amount of parking that is available in a city has high opportunity costs. More parking can also mean lower tax revenues and less walkable communities, as lots can increase space between destinations. Moreover, parking has environmental costs: an increase in impervious surface that can increase flood risk, and large, often dark, areas that can serve to create or exacerbate urban heat islands (areas that absorb sunlight and raise ambient air temperature). However, in places dependent on vehicle commuting, or in places starting a transition to more sustainable forms of transit, the costs of no parking can be high as well. It is worthwhile to examine the issue in depth if we want to fully appreciate where we put our cars.

THE STATE OF PARKING IN WORCESTER

Both public and private parking play an important role in Worcester. The City itself has a number of public parking garages and lots across the Downtown and through the Canal District. While the Downtown and the Canal District are subject to eliminated or reduced parking minimums, there is still quite a lot of parking across these two zones.

First, there are five public garages in Downtown Worcester. They range from 511 spaces at Federal Plaza to 983 at Major Taylor. Information about them, including rates, can be found in the chart below. According to the latest City Auditor report, there are also 100 publicly available spaces at the Polar Park Garage. Information about this garage was unavailable to the Bureau.

Table 1: City-Owned Garages

Garage	Federal Plaza	Major Taylor	Pearl-Elm	Union Station	Worcester Common
Address	570 Main St	30 Major Taylor Blvd	20 Pearl St	225 Franklin St	3 Eaton Place
Number of Spaces	511	983	819	500	500
Daily Rate (0-1 Hour)	$4	$4	$4	$4	$4
Additional Hours	$1	$1	$1	$1	$1
Max Rate Daily (6+ Hours)	$13	$15	$15	$15	$17
Evening Rate	$1	-	$1	$1	$3
Overnight	$5	-	$5	$5	$5
24/7 Monthly Parking	$165	$191	$191	$191	$216
Monthly Weekday Parking	$150	$173	$173	$173	$196

Table 2: Surface Lots

Lot	Amtrak/MBTA	Grafton Street	Green Street	Highland Street	McGrath (Library)*	Millbury Street	Water Street
Address	25 Shrewsbury St	39 Grafton St	96 Green St	40 Highland St	40 Salem St	51 Millbury St	85 Water St
Number of Spaces	124	230	27	93	282	47	34
Daily Rate	$4	$4	-	-	-	-	-
Hourly Rate (Max	-	-	$2	$2	$2	$2	$2
Monthly Parking	-	$63	-	$63	$65	$63	-

Source: City of Worcester. Note: McGrath Lot recently lost some spaces to the City's Miyawaki Forest Initiative. The City does not own but does manage the Amtrak/MBTA and Grafton Street Lots.

Between the below five garages, **there are a total of 3,313 spaces available**. Some of these spaces are pre-leased through agreements to various Downtown employers. However, for the most part, there are hundreds of spaces available for both daily and monthly parkers.

Additionally, Worcester owns five open-air public parking lots and manages another two. They range from 27 spaces at the Green Street lot to 282 at the McGrath lot, which is located on Salem St next to the Main Library. Prices range from $2 an hour to $4 a day at the Amtrak/MBTA and Grafton Street lots. More information about them can be found on Table 2. In total, **they represent another 837 spaces**.

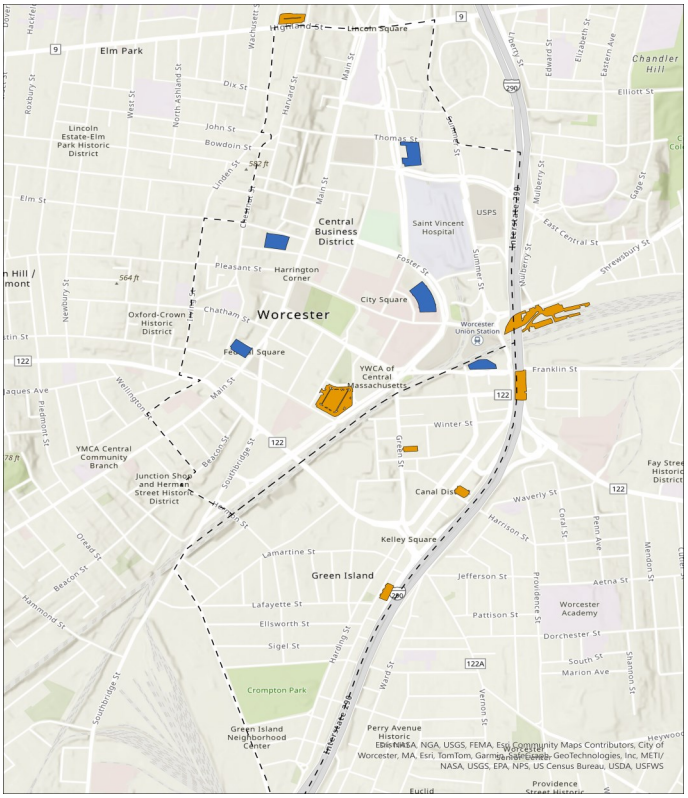
The City's public garages and lots are found throughout the Downtown and into the Canal District, and can be seen on **map 1** (**blue** represents garages and **orange** represents open-air surface lots).

Of course, these aren't the only parking options in Worcester, and especially not in the Downtown. Data from the City's Assessing Department (downloaded from the MassGIS Data Property Tax Parcels set), shows parcels within the Downtown and the Canal District whose **major uses are classified as strictly commercial parking garages or lots** (although not in the dataset, the Bureau has included the Green Island Blvd Garage, i.e., Polar Park). *This map does not show every parcel with parking*. Still, it gives us some idea of the land use dedicated to parking in these areas. These are on **map 2** and, again, garages are **blue** and open-air surface lots are **orange**. Unlike the public lots, the Bureau does not have data on the usage or revenues of the private garages and lots.

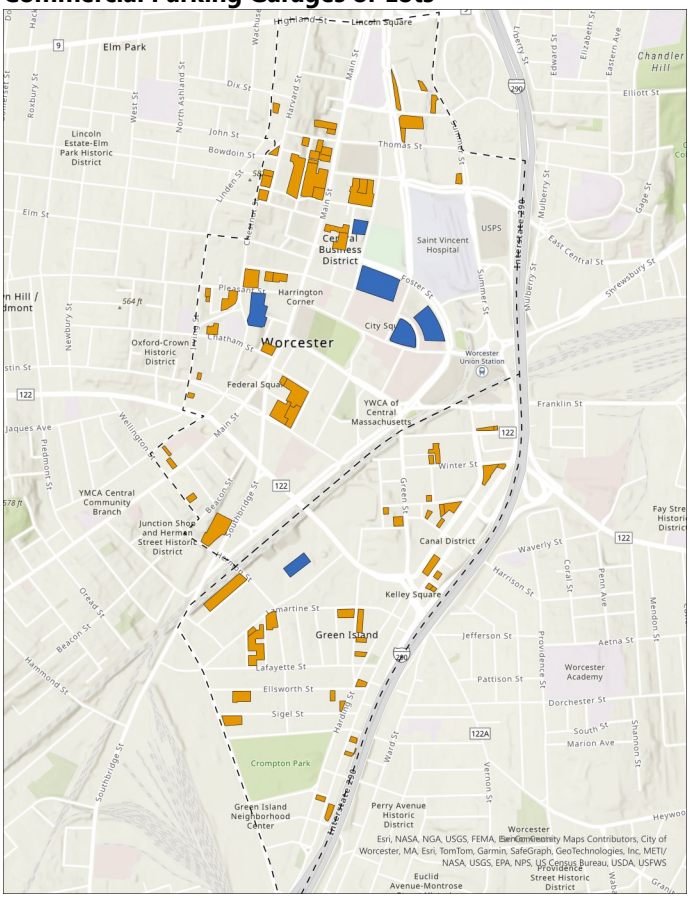
Despite the surfeit of parking in these areas, and despite the limitations on parking minimums in these areas (discussed at length in Part 2), new parking is regularly being discussed or built. Some is for new development, like a garage for Polar Park, and others is expanding or rethinking existing lots; for example, the City's 2016 Urban Revitalization Plan discussed building a parking garage on the parking lot behind Hanover Theater, and considered other improvements to the McGrath Lot.

Whether public parking lots or "primarily commercial garages or lots," the areas marked on these maps only make up a fraction of total land dedicated to parking in these two areas. **Indeed, according to a report from the Parking Reform Network, nearly 35% of land in Worcester's Central Business District is dedicated to parking of some kind**. (McNamara 2023) Besides the ten municipal garages and lots, as well as the commercial parcels dedicated solely to parking, many other parcels across Downtown and the Canal District have parking of some kind. **All the parking across these two areas is**

Map 1: Worcester's Publicly Owned Garages and Lots



Map 2: Downtown and Canal District Parcels Classified as Commercial Parking Garages or Lots



Source: MassGIS Property Tax Parcels Dataset; City of Worcester

reflected on map 3. It should be noted, too, that Downtown and the Canal District have eliminated or reduced parking minimums for new development.

This is not to mention, of course, the parking that exists across the entire city. To illustrate that, **map 4** shows parking along Park Ave, though by no means is Park Ave unique for its preponderance of parking.

These maps are estimations of parking; using Google Earth, the Bureau mapped where parking was located in these areas. Lots and parcels that appeared to have parking lines within them, or cars on them, were counted as parking areas; parking lots were excluded in some residential areas. Any non-garage buildings on lots were purposely excluded. On Park Ave, parking lots were included if they could be seen from the street.

ON-STREET PARKING IN WORCESTER

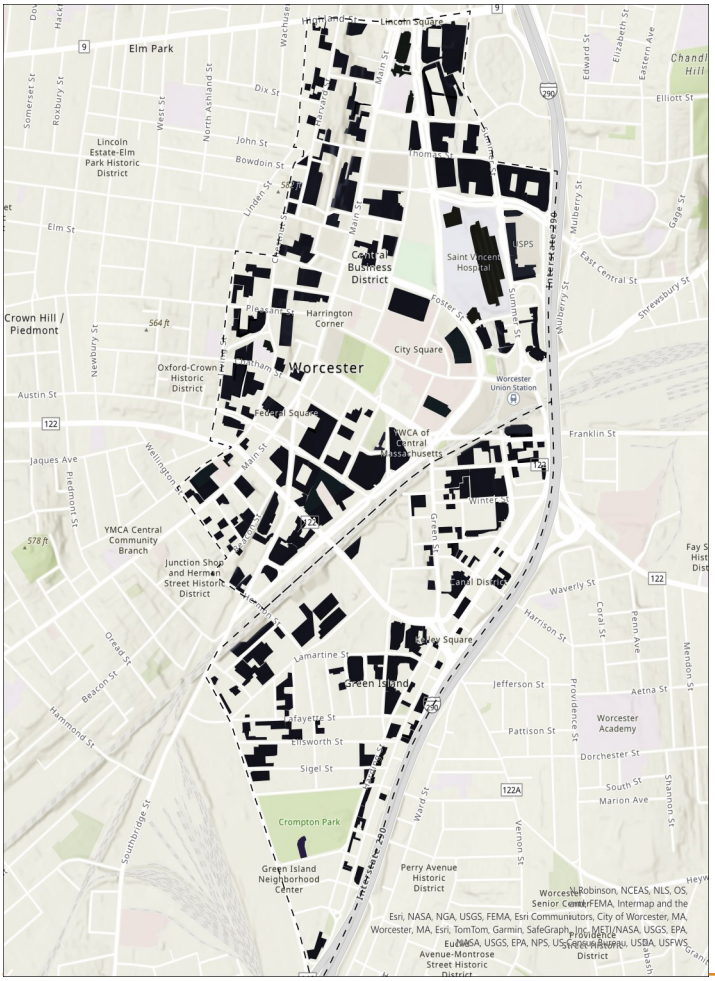
Off-street parking is one aspect of the parking equation. On most streets in the city, some form of on-street parking is allowed. Depending on the area, parking may be free, require a residential permit, or a metered payment for use.

On-street pay-to-use parking transitioned to pay-by-plate from single space meters in 2021. The areas in Worcester where street parking is not free are separated into zones. Using an on-street kiosk or a parking app on their phone, drivers can enter their license plate number and the amount of time they plan to stay in the zone (generally up to two hours). While their parking session is active, they are free to move around the zone and park elsewhere.

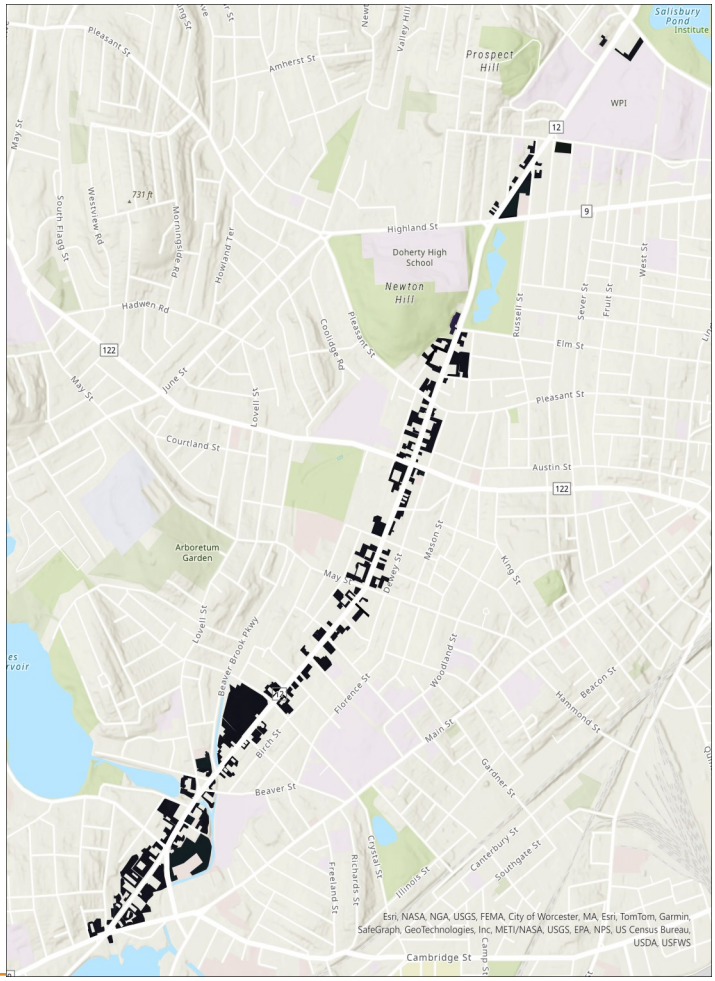
Once a driver has reached the maximum time, they must move their car or face a fine from parking enforcement. **This allows for frequent turnover of spots**. If one needs more time, one can move to a different zone; however, it should be said that the locations of zone boundaries are not always very clear, and may be located too far apart for some drivers to simply move, especially those with disabilities. Most of the areas where there is zoned on-street parking also have nearby garages and lots meant for longer-term parking.*

Map 5 shows the areas of the city of that have paid on-street parking. The main map shows on-street parking separated into six districts according to the Department of

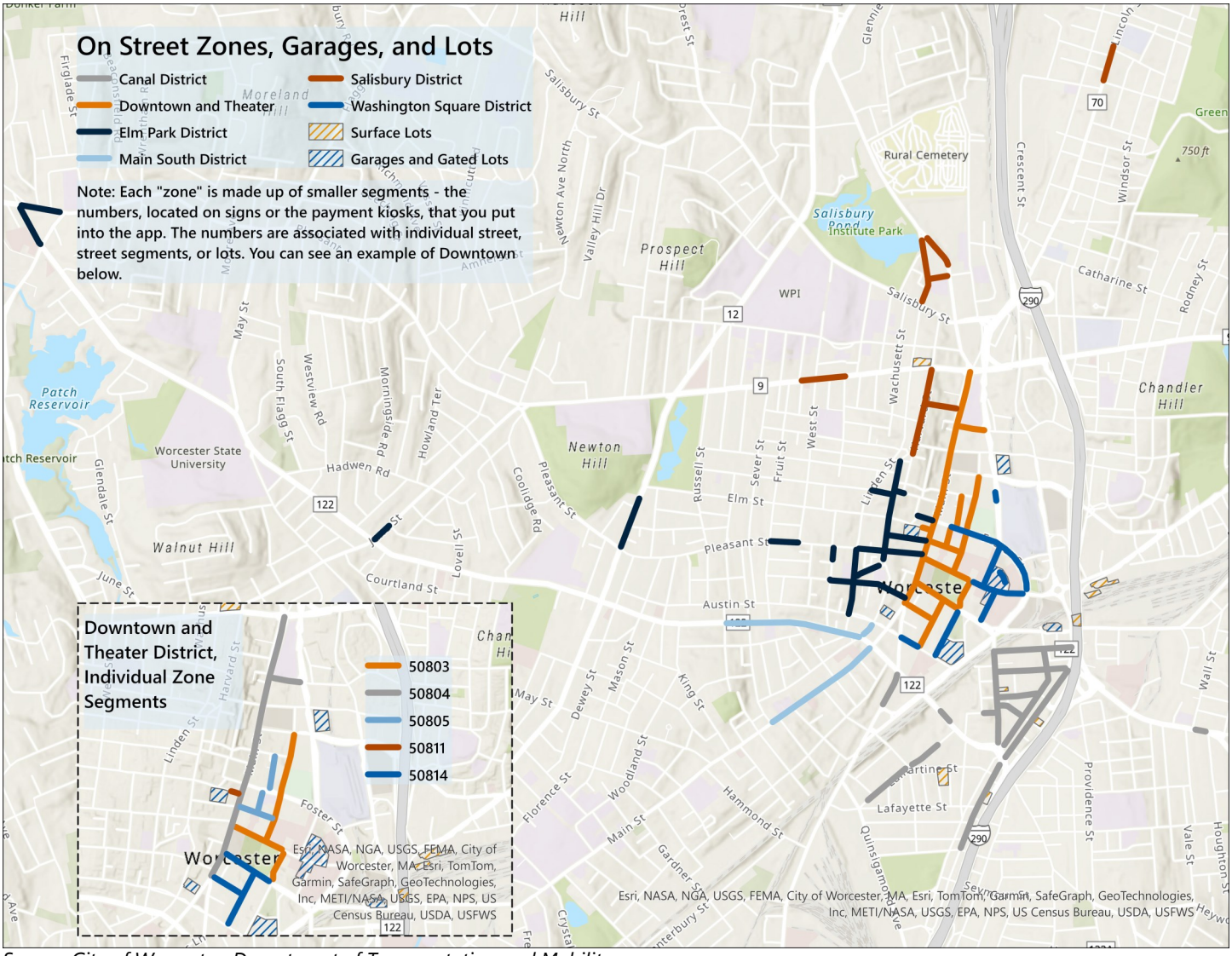
Map 3: All Garages and Lots Downtown and in Canal District



Map 4: All Garages and Lots Across Park Ave, from Main Street to Salisbury Street



Map 5: On-Street Parking Zones, Garages, and Lots Throughout Worcester



Source: City of Worcester, Department of Transportation and Mobility

Transportation and Mobility. Each district is made up of a number of smaller zones—**28 in total**—that span entire streets, street segments, or multiple streets combined, depending on the area. The zones (labelled as 508XX) are what drivers use to identify where they are in the mobile app. The inset of the Downtown area shows how the Downtown District is split into five zones for the purposes of paying for parking.

Having discussed the publicly-owned parking situation in Worcester, the next section of this report will look specifically at how those public options are faring—through revenues and occupancy data provided to the Bureau by Worcester's Department of Transportation and Mobility.

PUBLIC PARKING USAGE

Fully analyzing public parking usage requires data, and thanks to the City of Worcester's Department of Transportation and Mobility (DTM), the following section is drawn from data provided to the Bureau regarding parking mobile app and kiosk usage as well as garage occupancy. Before discussing revenue, we should note that parking revenues, whether from garages, the mobile app, or kiosks, are used to pay for and support parking maintenance and upkeep across all of the City's holdings. Parking violation fines, on the other hand, are not used to support on and off-street parking under DTM and are revenue to be used for other purposes. The City's parking properties, therefore, are largely self-sustaining with no tax levy thanks to the revenues they generate from everyday parking activity. While reading the following charts, too, it should be remembered that for at least part of this period the City was dealing with the COVID-19 pandemic; this assuredly affected revenue and occupancy especially in

Chart 1: Month by Month Revenue, Street (2021-2024)

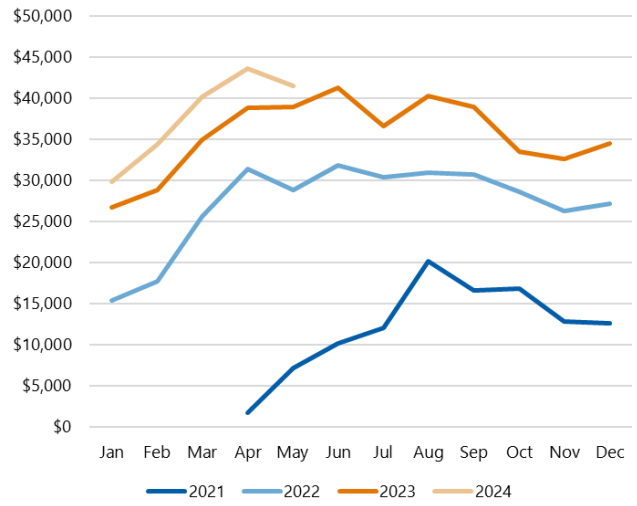
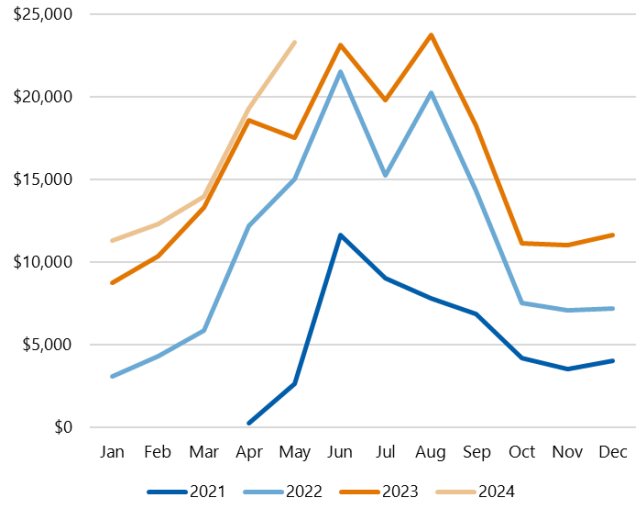


Chart 2: Month by Month Revenue, Lots (2021-2024)



2021 and 2022, and likely still plays a role when considering the incidence of remote work.

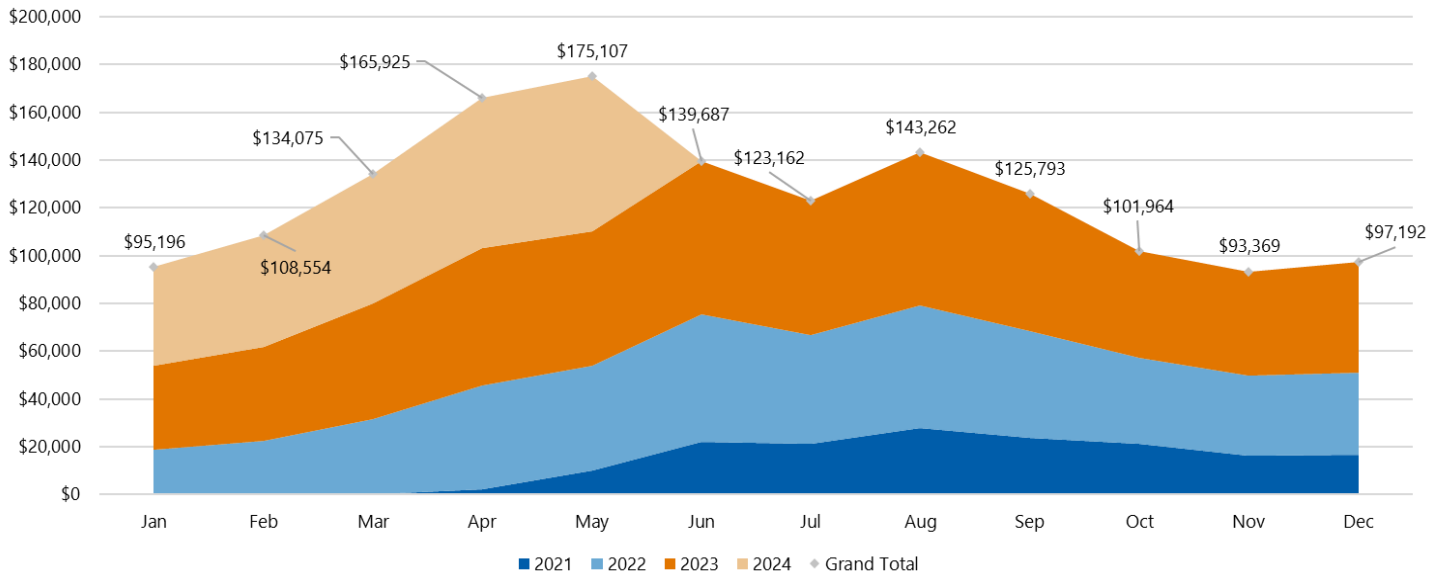
PARKING PAYMENTS BY MOBILE APP

In April 2021, the City of Worcester began using a mobile app and universal kiosks—as opposed to single space meters—for all of its paid on-street parking and parking in ungated off-street lots (i.e., every lot but the McGrath Lot next to the library). Drivers can choose to use the app to pay for their parking, or can input their license plate into a nearby kiosk. In general, as already noted, the drivers can park for up to two hours on the street and substantially longer in individual lots. **The charts in this section reflect data from the mobile app only**.

Revenues from the app have been higher compared to the same month from the year before, each year, whether we are considering on-street or off-street parking. **Charts 1 and 2 on the left display revenue month by month compared to the same month the year before** (these numbers *do not include* the $0.20 fee the app charges per transaction). One thing that we can glean from these charts is that people are not parking on-street or in the lots as often in the winter; the biggest months for revenue have generally been June and August, with dips in July.

Since the transition from individual parking meters to app and kiosk, every year has seen higher revenues than the year before from the *app*, as reflected in **Chart 3 below**. **The totals listed on the chart represent the total amount of revenue collected in that month for all years combined**.

Chart 3: Net Revenues (No Fees), Yearly And By Month, Using the Mobile App



Source: City of Worcester, Department of Transportation and Mobility

The story is the same when looking at the rolling sum of revenues over the course of the year: each year has been higher than the last, though from the 2024 data provided to the Bureau, it appears that growth is slowing. This is reflected in **Charts 4 and 5** to the right. **Likely this is due to both plateauing adoption of the app as well as the amount of people parking**. Still, if past patterns hold, June and August will be the largest months of the year for mobile app parking revenue.

Percent change in revenue from month-to-month has been slowing. **Chart 6** shows this data, excluding April and May 2021 (as the first and second months of app data, these are outliers that skew the values significantly compared to the following months). Most months show growth, but **notably July, September, October, and November are always months where collected revenue decreased from the months before**.

Revenue is reflective of drivers parking and using the street, whether more often or for larger amounts of time. **As revenue has grown, so has the amount of time paid for in the app. Most of this growth is due to increases in average time in lots**, as lots allow for more flexibility in terms of how long one can park there (as opposed to two hours).

Chart 7 shows the average amount of time per transaction (in minutes) that drivers used for on-street and off-street parking in the app. Like revenues, each month surpasses the same month from the year before for each year and month for which we have data.

Chart 4: Annual Rolling Revenue by Month, Street

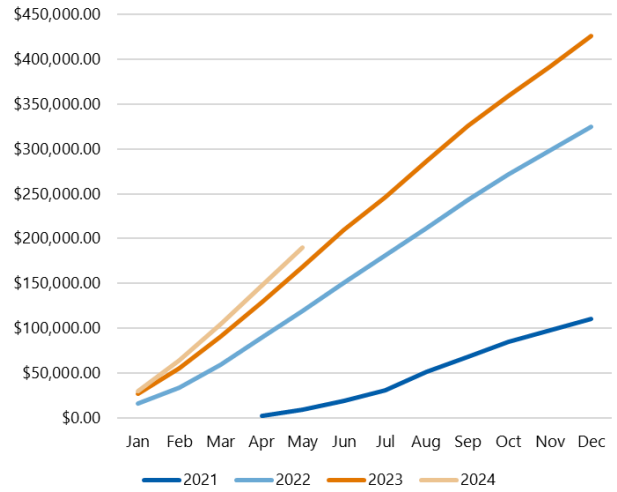


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Chart 5: Annual Rolling Revenue by Month, Lots

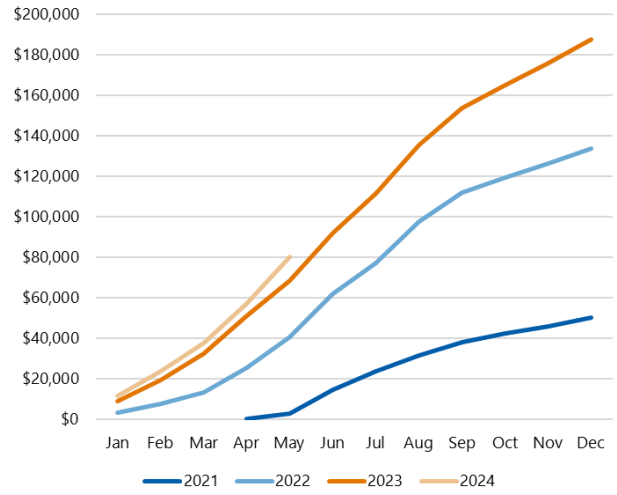
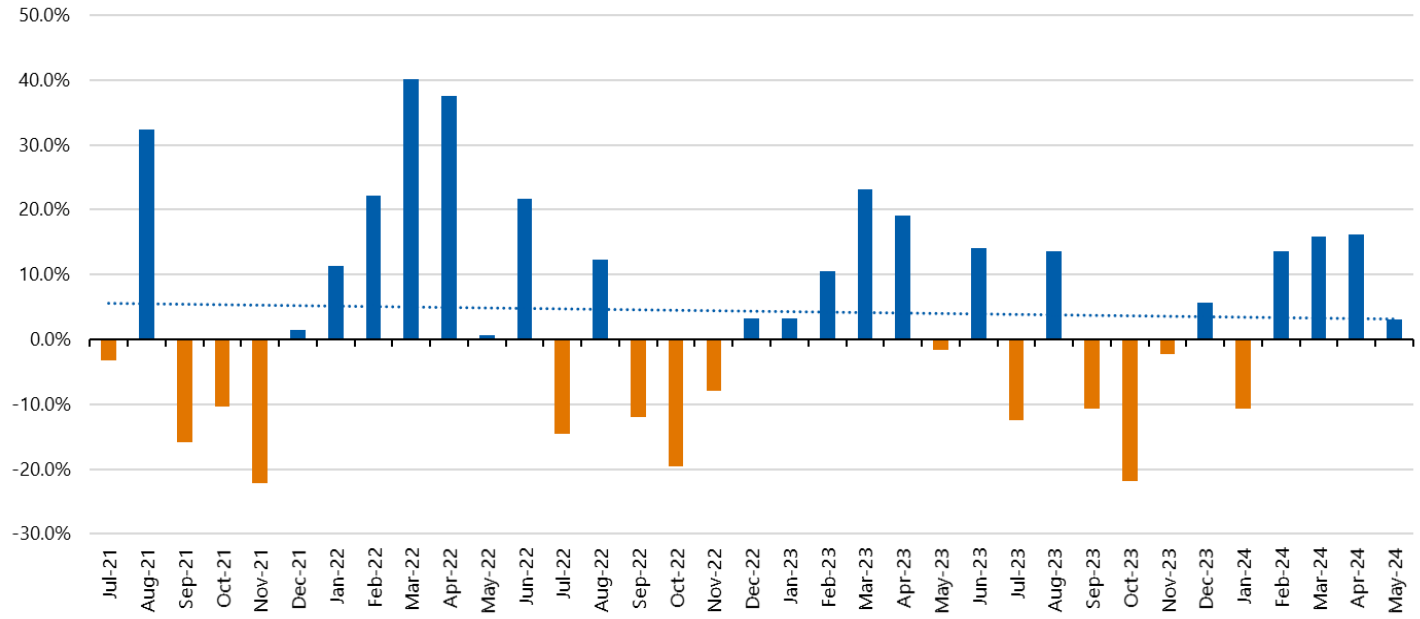


Chart 6: Month to Month Percent Change in Mobile App Net Revenue



Source: City of Worcester, Department of Transportation and Mobility

should be noted, of course, that these times are not how long cars are parked for, but how long drivers anticipated they would be parked for—that is, the amount of time paid for, but not necessarily the amount of time used.

Chart 8 here shows the cumulative hours drivers have paid for in the app yearly, for on-street and off-street parking. While it has grown each year, the **rate of growth has seemingly slowed.**

Most of the average time is made up of drivers paying for time in lots, rather than on-street. On-street transaction times have remained stable over the course of every year and month that we have data. **Charts 9 and 10** show the average time (in minutes) each month that drivers paid for parking on-street or in lots. **We see significant gains in time in the lots (each month greater than the same month the year before) but streets are stable with an average of 90 minutes**. Again, this does not include time paid at the kiosk or for street parking in areas that do not have paid parking, which is the majority of the city.

Percentage change from month-to-month for average minutes paid for in the app shows a slowing trend in the increases in average time; however, the majority of months (about 60%) see more time paid for in the app than the month before for all parking modes. This is displayed in **Chart 11** on the following page (excluding April and May 2021 from the data as the start of app usage).

Chart 7: Average Minutes per Transaction. in App, All Modes

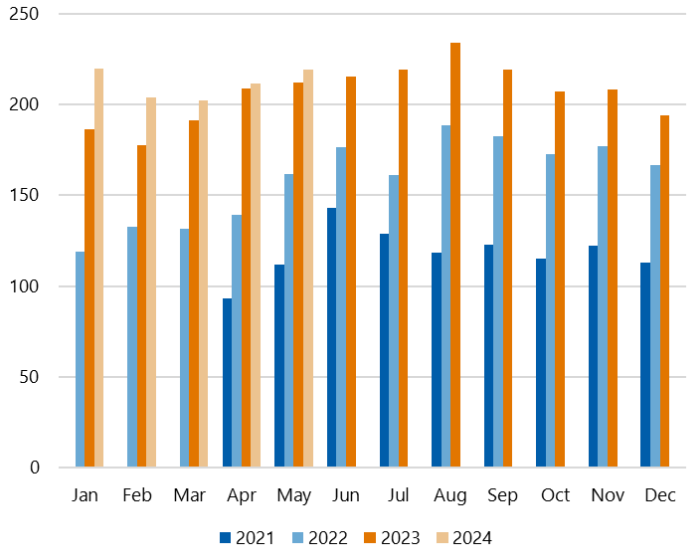


Chart 8: Cumulative Hours in App Annually

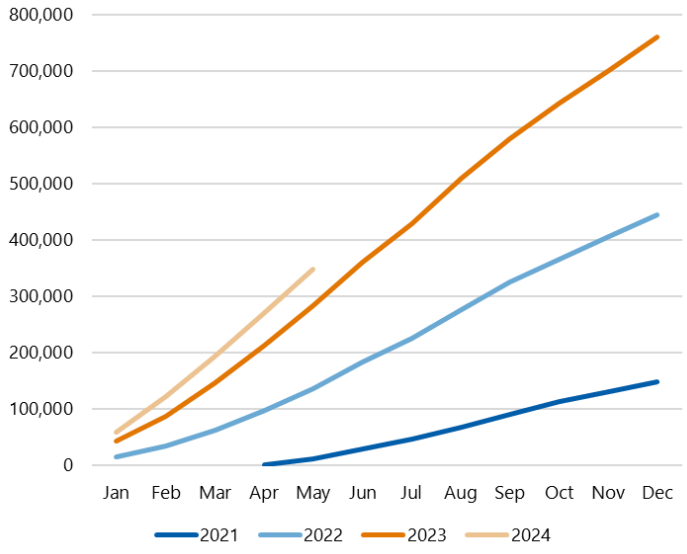


Chart 9: Average Minutes per On-Street Transaction, in App

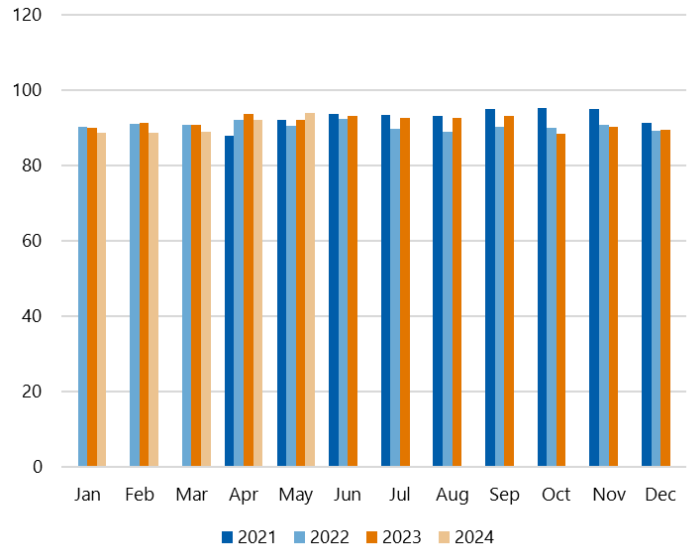
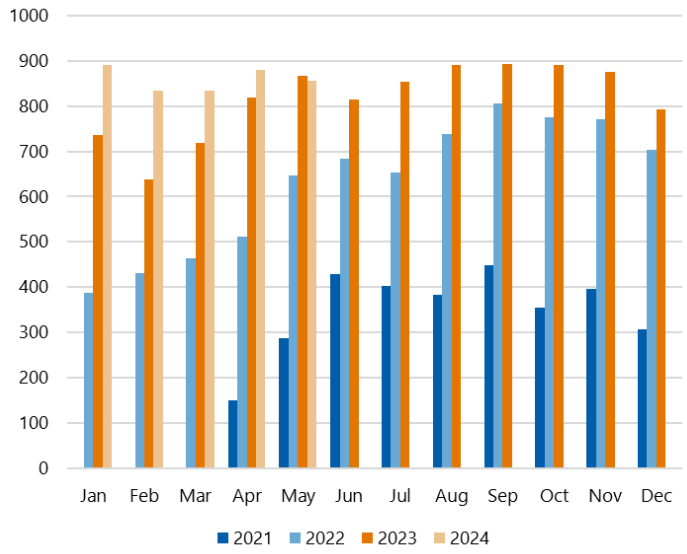
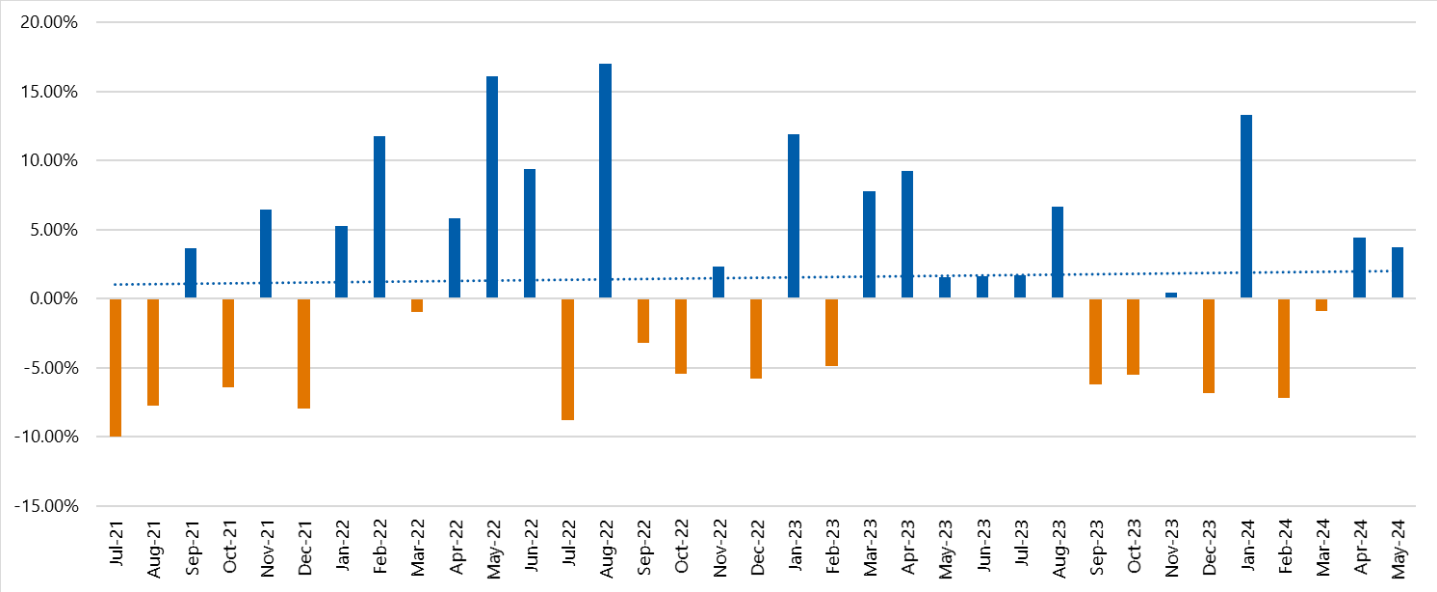


Chart 10: Average Minutes per Lot Transaction, in App



Source: City of Worcester, Department of Transportation and Mobility

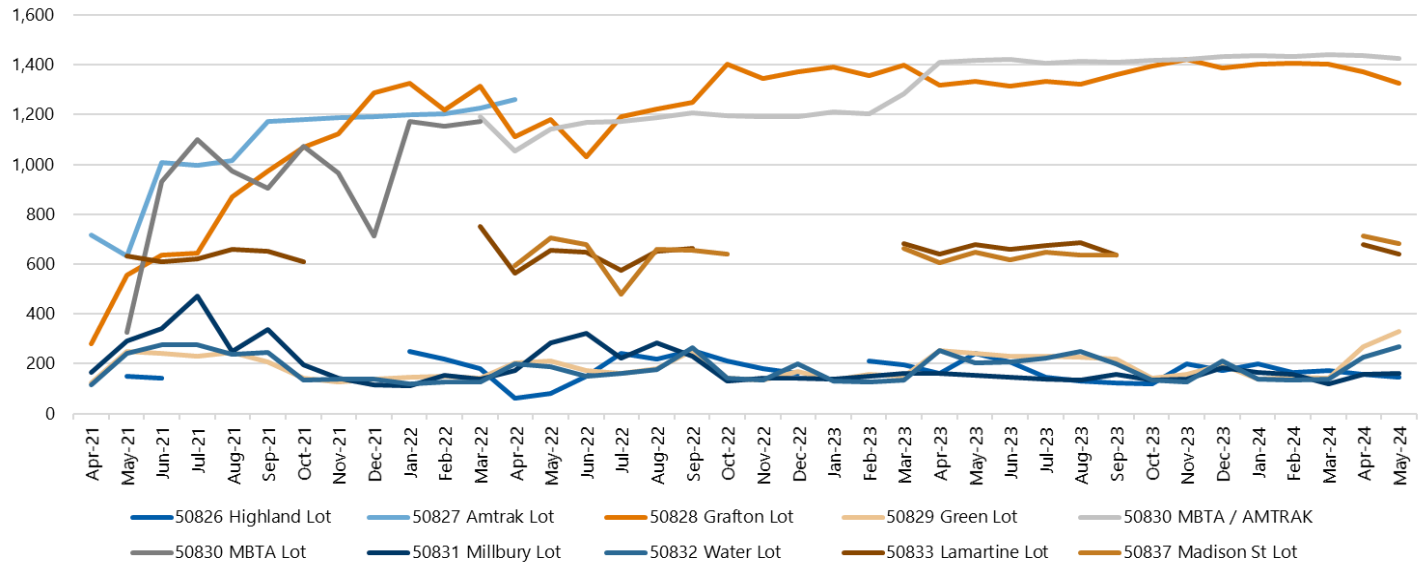
Chart 11: Percent Change in Average Minutes Per Transaction Paid in App Compared to the Month Before, All Modes



Although the app transactions for parking are one small picture of the public parking system in Worcester (kiosks and, separately, garage transactions will be addressed shortly), the data is telling and we can glean several insights from it. For example, **increasing revenue indicates that the driving public has increasingly adopted the app over time,** i.e., more and more drivers are open to downloading and using the app instead of the on-street kiosks – even with the $0.20 fee to use the app per transaction. The growth in the amount of parking time paid for (even if the growth is largely found in the lots) may also be indicative of more drivers simply parking in and around the areas of Worcester that offer paid parking – that is, **it may indicate an uptick in visitors to the city.**

Indeed, looking at the times of year in which revenue collection is highest – June and August – may lead some credence to that. Drivers may be coming to Worcester for events, like WooSox games, and using the lots throughout Downtown and Canal District. In fact, two lots, Madison Street and Lamartine Street are only collecting mobile app revenue during baseball season! **These two lots are consistently among the top four lots in terms of average time spent, compared to all lots, with only the Grafton Street and MBTA Lots (both commuter rail focused lots) ahead.**

Chart 12: Average Minutes Per Transaction Paid in App Each Month, Lots



Source: City of Worcester, Department of Transportation and Mobility

PARKING PAYMENTS VIA KIOSKS

The other way to pay for parking is through kiosks located on the street within the sub-zone one is parking (or located at the corner of the lot, if parking in a surface lot). The Bureau was provided data for kiosk transactions dating back to April 2022. While the revenues from kiosks are, over this time period, greater than the revenues of the mobile app, they have not grown in the same way – more indication that mobile app adoption is growing.

Charts 13 and 14 show the total amounts paid into kiosks every month across both on-street zones and surface lots, as well as the cumulative growth across the year. Like the revenues from the mobile app, there are spikes every June and August, with dips in July and the in the Fall and Winter months. Unlike the mobile app, however, there is not large growth year after year in the amounts paid into the kiosks – the revenue seems to be remarkably stable across each year. The cumulative chart amount for 2022 may seem low compared to 2023 and 2024, but the reason for this is simply that the data provided begins at the very end of April 2022.

Looking across the city, and using the "On-Street Zones" map as a guide, **charts 15 on this page and chart 16 on the next** show the amounts paid into kiosks, month-by-month, in the six zones found in that map as well as the surface lots. Just like the total revenue collected each month, the six zones remain remarkably stable in revenue collection across each year. "Downtown and Theatre" and the "Canal District" remain the largest on-street zones for kiosk use, with Downtown and Theatre generally the largest. However, in six-month swings that align with baseball season, usage of kiosks in surface lots frequently comes out on top. The swing is, unsurprisingly, like the mobile app, due to the use of the Madison Street and Lamartine Street Lots when they're available – during baseball season.

Chart 13: Monthly Amounts Paid into Kiosks

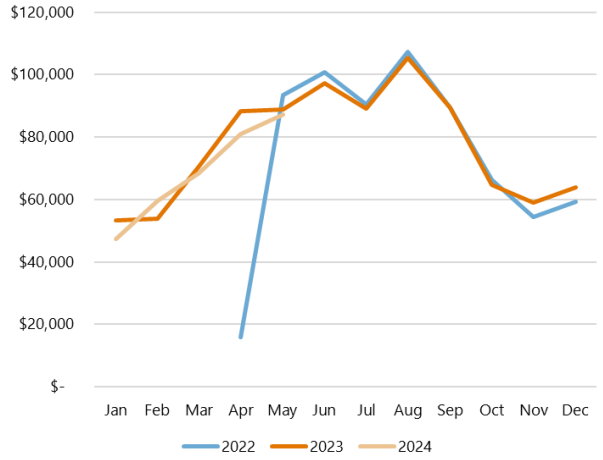


Chart 14: Cumulative Amounts Paid into Kiosks

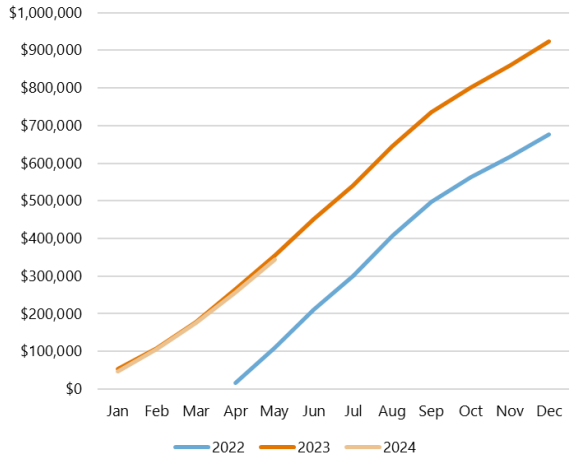
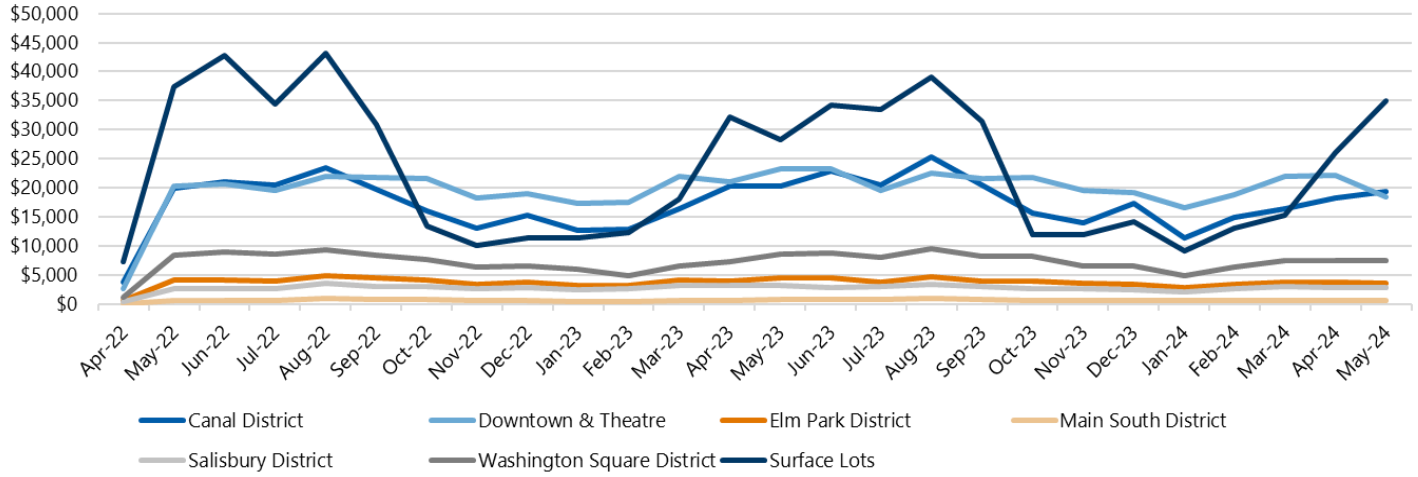
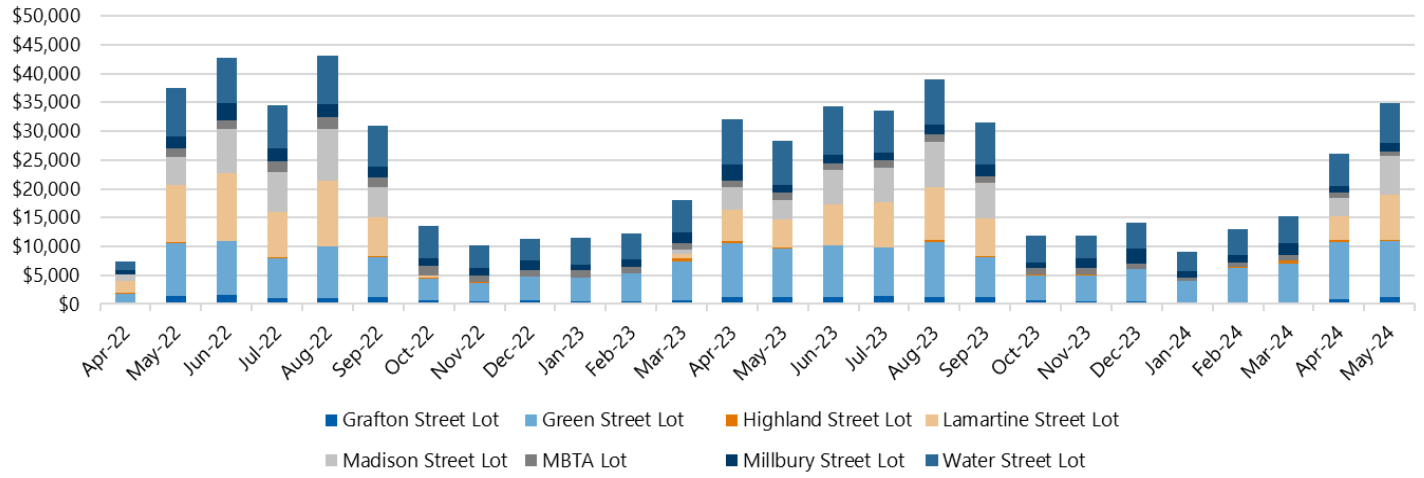


Chart 15: Monthly Amounts Paid into Kiosks in On-Street Zones and Non-Gated Surface Lots



Source: City of Worcester, Department of Transportation and Mobility

Chart 16: Monthly Amounts Paid into Kiosks, by Non-Gated Surface Lot



Source: City of Worcester, Department of Transportation and Mobility

MONTHLY AND TRANSIENT OCCUPANCY OF WORCESTER'S CITY-OWNED GARAGES AND THE MCGRATH LOT

Of course, on-street parking and off-street surface lots are not the only public parking options offered by the City of Worcester. The City provided the Bureau with data regarding occupancy and transient revenues of its garages and the McGrath Lot; this data shows an hour-by-hour look at the number of cars entering *and* exiting each garage, and whether those entrances are from monthly pass usage (which could include the weekday only pass or the 24/7 pass) or transient usage, i.e., ticketed entry whether at the gate or from an online reservation. From this data, dating back to January 2021, the charts on the following pages show monthly totals in terms of number of (1) monthly users entering the garages, by garage, and (2) the number of transient users entering the garages, by garage. This section also includes charts showing the average amount of cars entering each garage by hour, for certain periods of the day, across weekdays and weekends. The following sections do not include data on the usage of the garage across from Polar Park, as it was not provided to the Bureau.

First, in addition to the data the City provided, Bureau staff did a walk through of the five public garages as part of this project, to get a point in time count of how many cars were actually using spots in each garage. On a sunny Tuesday morning, between 10 AM and 12 PM, staff walked through the garages and gathered the following estimates (as there is a chance that some cars were driven into or out of the garage while the counting proceeded, the percentages, therefore, use occupied spaces rounded up to account for this error).

The count shows that there are cars parked in each garage. However, the numbers vary wildly. **The most popular garages at the times counted included Federal Plaza (72.4% occupied) and Major Taylor (78.3%). However, Union Station Garage had the lowest occupancy, at 26%**. Anecdotally, there were a steady stream of cars driving in and out of Major Taylor while we were counting; this was not true in the other garages. The numbers in this table do reflect well what the longitudinal data shows: Major Taylor and Federal Plaza are generally the most popular garages of the five.

Table 3: Bureau Staff Walkthrough of City-Owned Garages

Garage	Total Number of Spaces in Garage	Date	Spaces Being Used, Rounded Up for Error	% of Total	Time Completed
Federal Plaza	511	5/14/2024	370	72.41%	11:30 AM
Major Taylor	983	5/14/2024	770	78.33%	10:50 AM
Pearl-Elm	819	5/14/2024	290	35.41%	11:13 AM
Union Station	500	5/14/2024	130	26.00%	10:20 AM
Worcester Common	500	5/14/2024	230	46.00%	11:47 AM

In the longitudinal data, there are a few trends and patterns to point out. The first is that, like the mobile app and kiosk data, **there are dips in usage of the garages in July and in January**. Second, while overall the amount of people entering garages, whether monthly or through one -time use tickets, has continued to increase since January 2021 (lows largely thanks to the Covid pandemic), **some garages have remained flat in their hourly averages.** What is fairly clear from the data itself – and what was borne out by our own one-day count in the data referenced earlier in this section – is that **Major Taylor garage, and to a lesser extent, Federal Plaza, tend to have the most occupants.** In the case of Major Taylor, this is especially true on the weekend, presumably when there are the most the DCU Center events.

Chart 17 shows total monthly pass users in each garage each month; **overall, there have been 950,486 entries by these users over this period**. Major Taylor, unsurprisingly, makes up the largest number of users each month – considering especially that the USPS uses the garage. McGrath Lot (the main library lot), interestingly, has a lot of monthly users, with more monthly pass users using the lot than either Union Station OR Worcester Common **every month since December 2022**.

The number of transient users, again, those users using tickets at the gate, a prior online reservation, or any method that is not a monthly pass, tells a similar and striking story. This is displayed in **chart 18**. First, between January 2021 and April 2024, there have been more than 1.4 million gate activations across the five garages and McGrath Lot. Major Taylor has the most regular transient users, averaging 11,523 a month; Pearl Elm has fewer average monthly transient users, with 2,567 since January 2021. Interestingly**, Pearl Elm is the *only* public garage with *fewer* average transient users each month than the average number of monthly users** (2,567 vs. 4,048). Finally, the McGrath Lot experiences a lot of traffic flow, likely due to its location next to the library, and relatively

Chart 17: Monthly Sum of *Monthly Pass* Users Entering Each Garage and Gated Lot

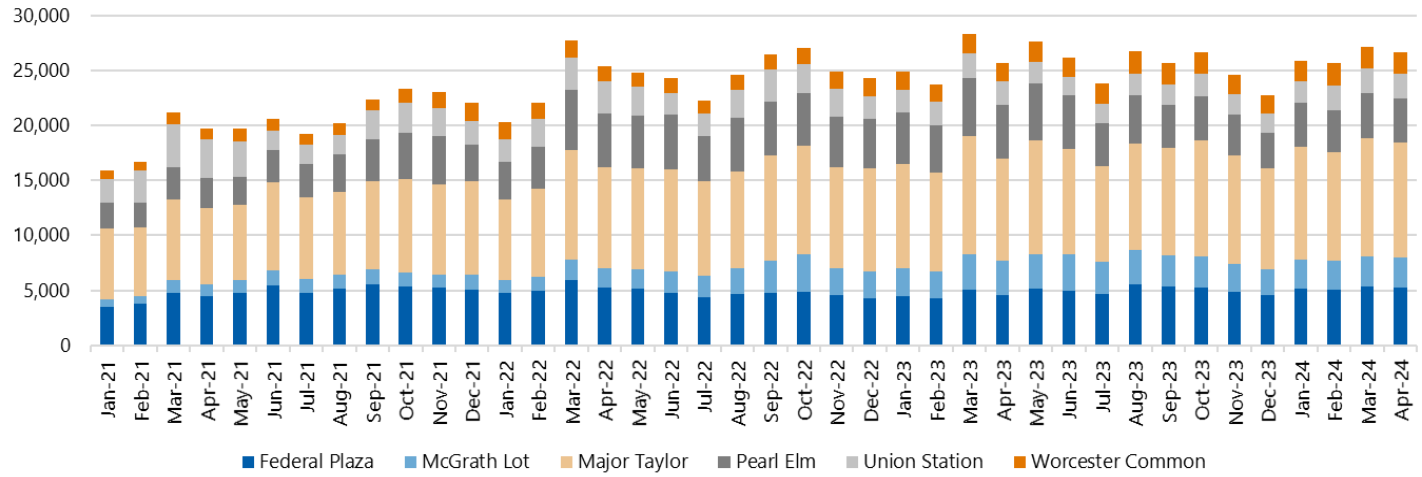
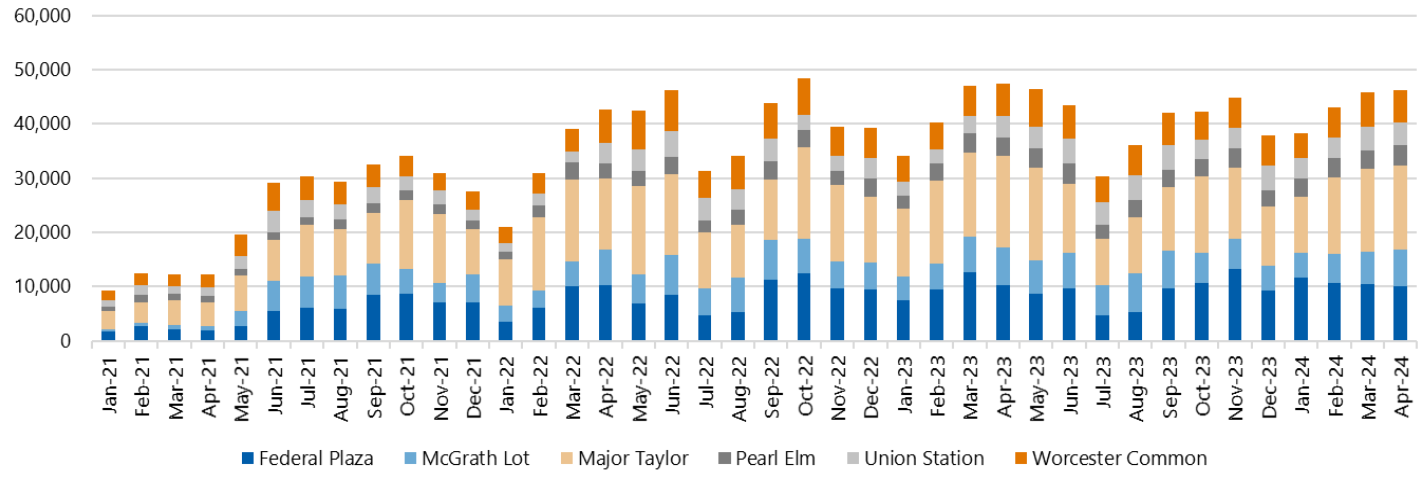


Chart 18: Monthly Sum of Transient Users Entering Each Garage and Gated Lot



Source: City of Worcester, Department of Transportation and Mobility

easy access to Polar Park. In terms of transient users, **the McGrath Lot has had more monthly transient users than Pearl Elm or Union Station, separately, for 36 months in a row, beginning in May 2021**. It has had more users than Worcester Common Garage for 22 months, though not sequentially like the other two.

Overall, the occupancy of the garages has experienced some growth since January 2021, due to the large influx in transient users over this period. **Chart 19** shows the total sum of vehicles entering garages regardless of entry type.

In addition to calculating the monthly totals, the Bureau also tabulated the average number of cars entering these garages (and McGrath) per hour, per month, back to January 2021. **Chart 20** shows the average garage entrances per hour for monthly users, between 5 AM and 11 AM on weekdays.

Just as Major Taylor was shown to be the garage with the most monthly users, **it is the garage with the most average monthly pass users by hour in this timeframe**. For the majority of this period – 26 months – Pearl Elm is in a distant second place in terms of hourly users with monthly passes, with Federal Plaza occasionally taking second itself. **The average users per hour in all of the garages has seen a slight rise over this time period, but it has remained relatively flat. If we assume that most monthly pass holders are workers in and around Downtown, that means we are not seeing a year over year increase or decrease in the general number of workers Downtown in this post-pandemic period. However, overall this is likely a dramatic decrease from pre-pandemic; according to DTM, for example, prior to COVID-19 and its reconstruction, Pearl Elm was generally 80% occupied (unfortunately we do not have full data for the period prior to COVID).** Taking a close look at the chart also reveals the January and July dips.

In terms of barcodes and other forms of ticketed usage, the Bureau's analysis expands the hours under study to between 5 AM and midnight on weekdays and separately on weekends. **Ticketed usage shows Major Taylor and**

Chart 19: Total Vehicles Entering Garages each Month, since January 2021

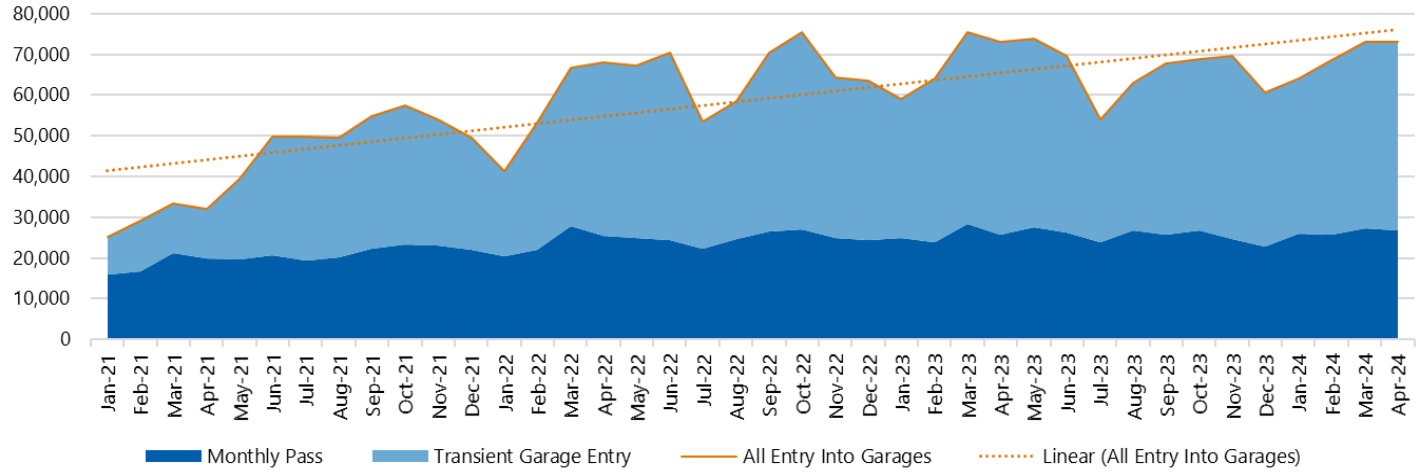
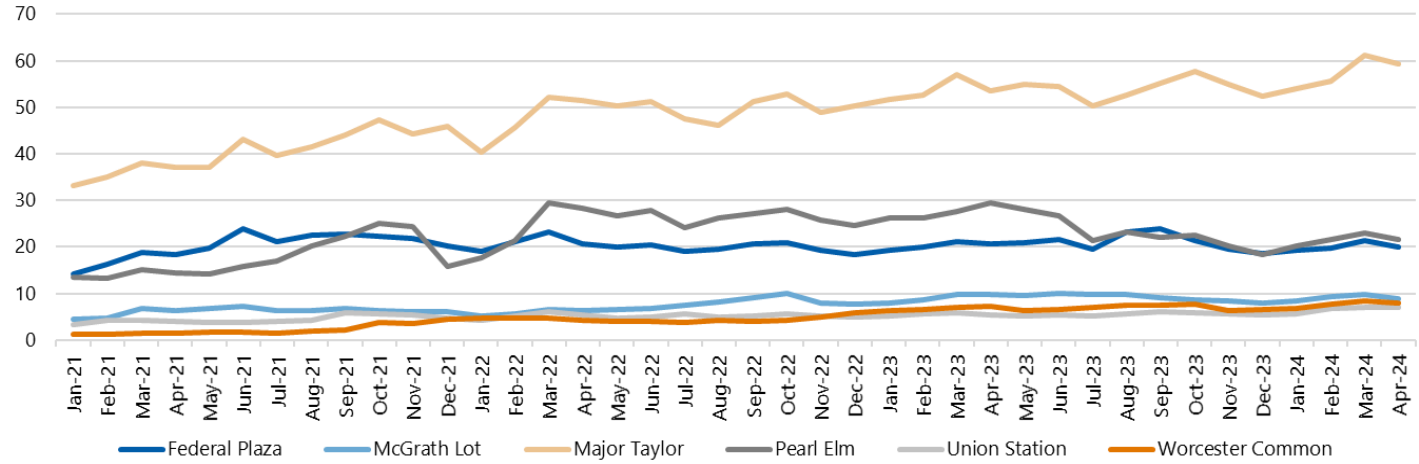


Chart 20: Average Monthly Pass Users per Hour, per Month, Weekdays 5 to 11 AM, since January 2021



Source: City of Worcester, Department of Transportation and Mobility

Federal Plaza to have the highest averages across this period, with Federal Plaza inching out higher numbers than Major Taylor on occasion. On the weekend there are even more users in Major Taylor by hour, while the other garages remain fairly similar to their weekday totals.

Overall, whether on the weekend or on weekdays, between 5 AM and midnight the average number of transient entries by hour each month has been increasing, as evidenced by **chart 23,** on the next page.

CONCLUSIONS

A first step to understanding parking in a city is to understand the status of public parking within that city. **Feeding the Meter**, **part 1** of the Bureau's parking series analyzes the public data provided to the Bureau to demonstrate the use of Worcester's publicly-owned garages and lots, and paid on-street parking.

The City provides a great deal of public, paid on-street and off-street parking, across its Central Business and Canal Districts. With over 4,000 off-street spots (and more during baseball season), there are plenty of places in which workers, people doing business, residents, and tourists can park. While in the past it may have been the case (such as at Pearl Elm) to have frequently full garages on weekdays, that has simply not generally been true in the post-COVID era. It is also very much the case that there are other options for garages (such as the Mercantile Center Garage at 201 Commercial Street, the garage next to Worcester Common Garage at 1 Eaton Place, or in the Canal District the garage at 105 Madison Street) that the public can use.

When it comes to the City's on-street paid parking options, **it is surprising to see how little of the City actually has paid on-street parking**. While most of the Central Business District, and large parts of the Canal District, does have paid- on street parking, **it is rare to see pay spots outside of small, isolated pockets in other**

Chart 21: Average Transient Garage and McGrath Users per Hour, per Month, Weekdays 5 AM to Midnight

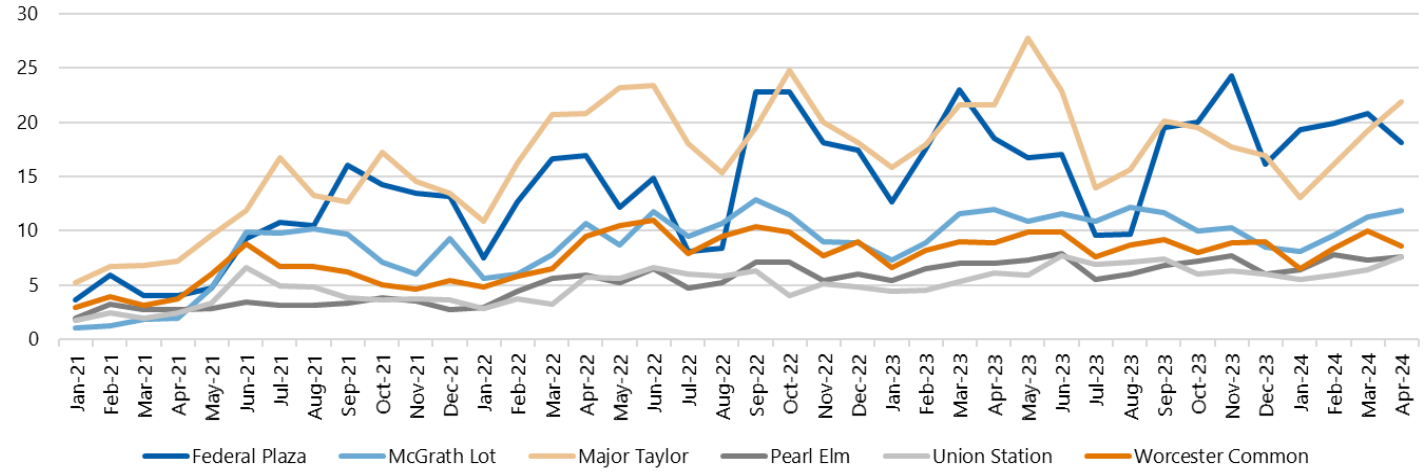
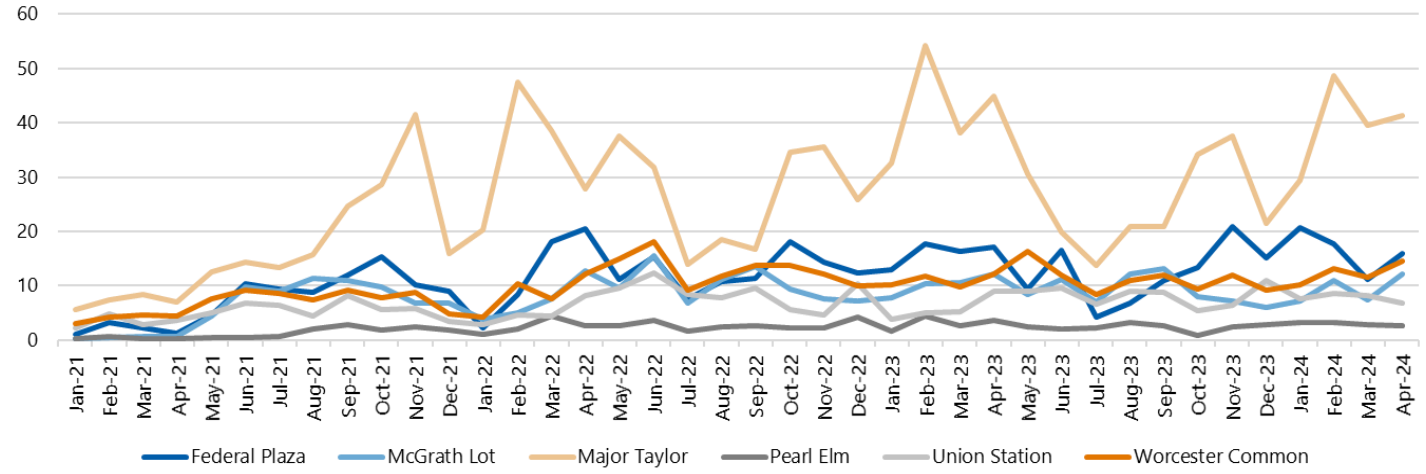
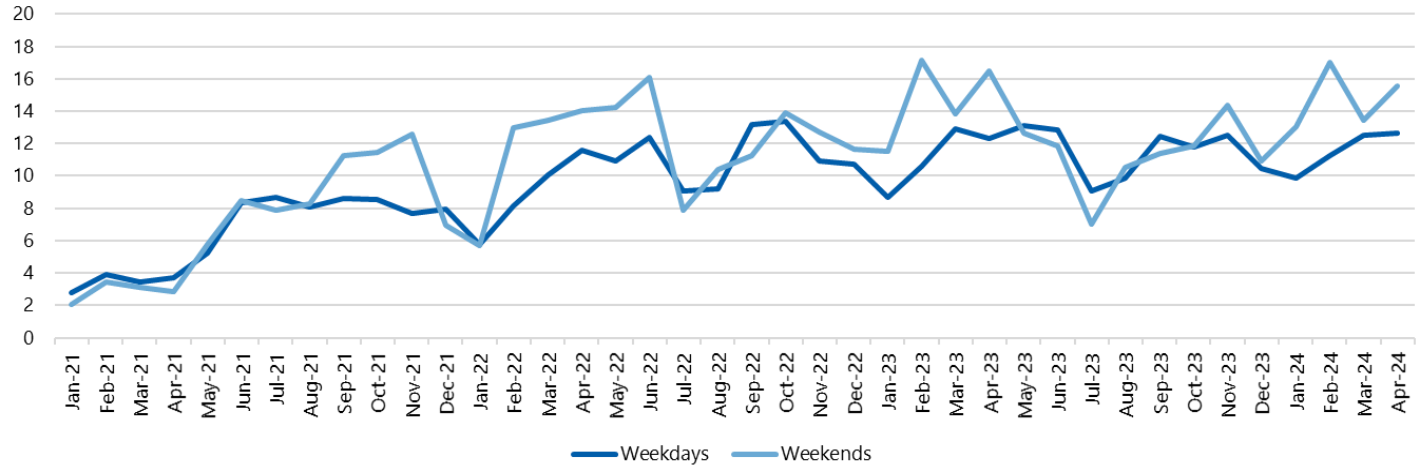


Chart 22: Average Transient Garage and McGrath Users per Hour, per Month, Weekends 5 AM to Midnight



Source: City of Worcester, Department of Transportation and Mobility

Chart 23: Average Transient Users per Hour, per Month, 5AM to Midnight; All Garages and McGrath



Source: City of Worcester, Department of Transportation and Mobility

areas of the City. Of course, it is true in other parts of Worcester that (1) no-parking zones exist, as well as that (2) there may be resident parking only or some other restriction. Still, the City has monetized a relatively small part of its total parking area. This is, of course, in addition to the amount of parking that is built thanks to parking minimum requirements.

Since the City introduced a "pay-by-plate" system for parking, it has seen more and more drivers adopt the app over time, and it has seen increases in revenue generation year over year (while kiosk revenues have been higher, they have remained more stable). The "pay-by-plate" system allows for faster turn over—and faster ticketing for going past the time limit—of in-demand on-street spots, allowing for more people to get into the places they need to go in the areas of the city that require paid parking. As the City explores other options—such as potentially 15-minute free parking in paid-for zones, as mentioned at an early April 2024 meeting of the Worcester Business Improvement District—drivers will have more options to park when and where they need to.

In recent years, Worcester's Major Taylor Garage has seen a lot of use from both monthly and transient users. But previous "powerhouse" garages, like Pearl Elm, have seen the number of users decline over the post-Covid period. As will be shown in **Public Par(king): Worcester's Past, Present, and Future of Parking, part 2** of the Bureau's parking series, Pearl Elm was at one point the most crowded garage, especially with monthly users. That is the case no longer.

Public Par(king) will take a slightly different path, and ask the question: how did the parking situation in Worcester develop? It will discuss zoning and parking minimums, as well as the visible and invisible costs of parking. And it will end with suggestions on what could be done about it.

Feeding the Meter: Public Parking Usage in Worcester is supported by a grant from the Barr Foundation.

The opinions expressed in this report do not necessarily reflect the views of the Barr Foundation.

NOTES

From Page 5: *Many drivers seem to prefer to park on a street nearby their destination, especially if they (1) believe that garages are significantly more expensive and/or (2) are not well acquainted with local conditions. One study found that drivers will search for on-street spaces before going to a garage, unless they are well informed about local conditions before undertaking their search. This same study also found that the longer drivers searched for on-street parking, the *less* likely they were to use a garage or off-street space, falling victim to a sunk-cost fallacy. See Jinwoo Lee and Duzgun Agdas, "Cruising for Parking: New Empirical Evidence and Influential Factors on Cruising Time," *Journal of Transport and Land Use,* 2017 (931-943)

CITATIONS FOR PART 1

Lee, Jinwoo (Brian), Duzgun Agdas, and Douglas Baker. 2017. "Cruising for Parking: New Empirical Evidence and Influential Factors on Cruising Time." *Journal of Transport and Land Use* 10 (1): 931–43. https://www.jstor.org/stable/26211763.

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