

Searching for a Space:

An Analysis of Eugene's Free Parking Policy

Paul B. Leitman

Master of Community and Regional Planning Candidate, 2013

Department of Planning, Public Policy and Management
University of Oregon

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Committee Members

Robert Parker Program Director, Community Planning Workshop, University of Oregon
Instructor, University of Oregon

David Hauser President, Eugene Area Chamber of Commerce

Acknowledgements

Robert Parker

David Hauser

Jeff Petry

Carrie Russo

Dave Amos

Claire Karner

Kimberly Morley

Abstract

The City of Eugene eliminated parking meters from a 12-block area of downtown Eugene in October 2010 to support economic development and attract more people downtown. This study evaluates the impacts of this free parking policy as it relates to businesses, patrons, and on-street parking conditions. I use the results from a survey of 62 businesses, a survey of 50 downtown visitors, and a series of parking counts to evaluate the impacts of the downtown parking program on retail activity, on patrons' parking habits, and on parking availability. The results show free parking is widely supported by the community, but that few businesses are seeing its positive benefits and that parking vacancy is lower than the optimal rate of 15 percent in many areas of downtown. I use these findings to recommend ways the City of Eugene can improve downtown parking conditions without negatively impacting the business community.

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Executive Summary

This report evaluates the effects of a free 2-hour parking program in downtown Eugene. As part of the program, meters were removed from a 12-block area of downtown in October 2010 in order to support businesses, encourage retail activity and attract more people downtown. This report's aim is to understand if the parking program is achieving its intended goals, what the perceptions of the business community are about its operation, and what other impacts the parking program is having on downtown. Results from a survey of businesses, a survey of downtown visitors and a series of parking counts were used to help answer these questions.

Parking demand management

Parking is an important element of downtowns and commercial areas, and is a major contributor to the economic success of retail and business establishments. In areas of high demand, there may be a shortage of parking spaces. When there are few available parking spaces, the consequences can be negative for businesses and health: businesses may lose customers who cannot find a place to park and may choose not to return; drivers waste important time in their vehicles searching for an available parking space; drivers who spend time looking for a space increase congestion and emit pollution.

Donald Shoup, a leading expert on parking from UCLA, believes effective pricing of parking is the best method to address parking demand and the related consequences of parking. Shoup argues parking should be managed as a private good whose monetary value will reflect the demand for parking spaces. With paid parking, people are encouraged to park for shorter durations or park in a location that is more suitable to their needs. Shoup and other parking experts believe the appropriate price for parking is the lowest price that will avoid shortages. At this price, 85 percent of spaces will be occupied. The remaining 15 percent of spaces that are vacant ensure drivers can always find a parking spot without needing to circle around the block. Parking occupancy above 85 percent indicates the parking has been undervalued, while parking occupancy less than 85 percent indicates that prices are too high.

Methods and findings

The evaluation of downtown Eugene's parking conditions were evaluated through three steps:

- Survey of downtown businesses
- Survey of people who park downtown
- Series of parking counts

The goal of each step in this study was to understand how people perceive parking conditions downtown, what they like and dislike about the current parking situation, and to understand how parking conditions change temporally and spatially throughout downtown.

Survey of downtown businesses

Downtown Eugene Inc. invited 142 businesses in the downtown area to complete a survey about parking in January 2013. Sixty-two surveys were returned that helped to provide an understanding of what the business community is concerned about and how the free parking has impacted their business.

Key findings from this survey show that:

1. Businesses are concerned about employees abusing the free curbside spaces that are intended for use by patrons.
2. Parking availability is not optimal.

3. Some businesses that depend on parking are not seeing the intended impacts of the program in terms of increased revenues or patronage volumes.
4. Support for the free 2-hour parking program is high, but many businesses indicated it is not working.

Survey of people who park downtown

While understanding the concerns of the business community is essential, it is also important to know what patrons and visitors to downtown think about parking availability. As the people who use the parking on a daily basis, their opinions and thoughts are necessary to ensure the parking policies do not deter them from coming downtown. To collect opinions of drivers, I administered a 13-question survey to 50 people who parked their car within the 2-hour free zone in March and April 2013. The responses from the survey show that:

1. People like free parking and they think it has a positive impact on downtown.
2. Some people would visit downtown less often if meters were reintroduced.
3. A majority of people travel downtown by other modes, indicating people are at times willing to come downtown without a car regardless of the incentive of free parking.
4. Drivers indicated they stay in downtown longer than the parking program allows.

Series of parking counts

Both surveys documented people's perceptions and opinions of downtown parking. To provide more contexts about the actual parking conditions I performed parking counts during each hour in which the parking meters and 2-hour time limits are enforced. The counts were conducted Monday through Saturday in April 2013 and included areas within and outside the free zone. The parking counts demonstrate that:

1. Some parking areas are often full for most of the day, while other areas have availability during all hours of the day.
2. Parking spaces in the free 2-hour zone were consistently more occupied than spaces in the metered zone. The weekday average occupancy rate was 77 percent in the free zone and 42 percent in the metered zone.
3. Since the last series of parking counts in 2011, parking occupancy rates in the free 2-hour zone have increased by about 14 percentage points.

Recommendations

The purpose of this evaluation was to study how well the free parking policy is working and what the City of Eugene can do to ensure downtown businesses benefit from curbside parking. Based on the findings of this study, I developed the following recommendations that are intended to ensure parking availability and efficient use of downtown parking spaces:

1. Continue to evaluate the conditions of downtown parking.
2. Create performance measures for the downtown parking program.
3. Establish a sunset provision for the termination of the free 2-hour zone.
4. Educate downtown employees about alternative options to on-street parking.
5. Implement variable pricing of parking meters by hour and location.
6. Use meter revenue locally.
7. Develop better pedestrian, bicycle and transit infrastructure.

I. Background and Context

In August 2010, the Eugene City Council voted to remove parking meters from a 12-block area of downtown Eugene and replace it with a free 2-hour parking zone (City of Eugene 2010). The intention behind implementing the free zone was to encourage economic growth in the core and to increase community access to the area. The free zone was implemented in October 2010 after 288 parking meters were removed in the area surrounded by 7th Avenue, Willamette Street, 11th Avenue and Lincoln Street. Drivers can park for up to two hours in this zone, free of charge from 7 AM to 6 PM, Monday through Saturday. All other parking meters in the city remained in place and are still enforced.

The free parking program attempts to encourage retail activity in downtown and to improve the perception of downtown as a thriving commercial center. While it does not increase availability of parking, it does reduce the cost to park and is an incentive for residents to patronize downtown businesses. Prior to the implementation of the program, parking used to cost 75 cents per hour, and has since increased to \$1.00 per hour for spaces that continue to be metered. The City views this policy as a subsidy to businesses and hopes the money lost from paid parking (estimated at \$220,000 annually) will benefit the downtown business community. (Otwell 2011; City of Eugene 2013a)

This analysis evaluates the effects of the program on downtown businesses and parking conditions. Its aim is to understand if the parking program is attracting people downtown, what the perceptions of the business community are about its operation, and what other impacts the parking program is having on downtown. To help answer these questions, this parking analysis is using the responses from two surveys and the results of parking counts. The first survey was administered to downtown businesses, and a second survey was administered to drivers who parked in curbside spaces downtown. The parking counts are used to evaluate the parking occupancy of the spaces within the zone and in the surrounding areas. The information gathered from these steps will guide the City of Eugene as they make adjustments to the parking program.

This analysis is the second study of downtown Eugene's parking program; Claire Otwell completed the first study in spring 2011.¹ This longitudinal study analyzes the changes in since 2011 and is intended to gather further information about how the City's free parking policy is impacting downtown businesses.

Parking policies

Transportation is one of the most important elements of a city's urban planning policies. Transportation policy usually focuses on how people travel between two points, the mode they use, their routing choices, and when they travel. In the United States, the private automobile is the most common tool for personal travel. This encourages a transportation planning focus on automobile infrastructure and ways to improve traffic flow and reduce congestion. Often, the issues of parking receive little attention, despite it being one of the essential components of a transportation system dominated by automobiles (Marsden 2006).

Parking comes in several forms: on-street (curbside) parking, off-street garage and off-street surface lots. Each type of parking serves different purposes and has various benefits and drawbacks. Childs claims on-street parking plays a very important role in central business districts because it is one of the

¹ For a copy of the 2011 report, please visit https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/11688/Otwell%20DowntownParkingEval_060811.pdf

most efficient forms of parking by cost, land area, and utilization compared to other forms of parking (Childs 1999, 52).

Dense commercial areas are popular destinations for many people. A combination of the density of land uses and the popularity of downtowns lead to a high number of people wanting to park in a relatively small area. Since many people are unwilling to walk long distances to access a destination, drivers will search for parking closest to where they want to go. This combination of high demand and low supply can create parking shortages. When few spaces are available, drivers engage in cruising: the act of driving around (sometimes in circles) looking for a place to park when few spaces are available.

Donald Shoup (a professor of planning at the University of California, Los Angeles and one of the leading experts on parking and parking policies) claims the consequences of cruising are detrimental to society. Cruising increases traffic (as multiple cars drive looking for available locations to park), creates air pollution, and wastes the time of drivers (Shoup 2011). In an analysis of several studies on cruising, Shoup (2011) found an average of 30 percent of traffic in a central business district consists of drivers looking for a place to park, and it took drivers an average of 8 minutes to find that parking space.

Paid parking

Shoup argues that parking is difficult to find in dense, high-demand areas because it is treated as a public good. The spaces are located in a public right-of-way and are often underpriced. Shoup believes on-street spaces should be managed as private goods with fair-market prices (Shoup 2011). This involves pricing parking at a rate that “will balance the demand for parking—which varies over time—with the fixed supply of curb spaces” (Shoup 2011, 297). By using this pricing strategy, drivers can always expect to find available parking.

The first parking meters were installed in July 1935 in Oklahoma City. For years, there were time limits on parked vehicles to encourage turnover. Cars that parked too long were ticketed. Because this method was inefficient and time-consuming, a device was invented that would monitor the time each person was parked. This new device – the parking meter – was operated by coin and effectively operated as a renting mechanism for curbside parking spaces. The impacts of these meters, according to an Oklahoma historian, were immediate. People patronizing businesses used the curbside spaces for short periods of time, ensuring available spaces for the next person who wanted to park. Areas of Oklahoma City without the meters continued to be congested and overused (Shoup 2011, 380)

This historical piece of information presents a good example for how paid parking can have positive impacts on parking availability. The intention of using market prices on parking spaces is to create curb vacancies, increase parking turnover, reduce cruising, and attract patrons who would have avoided the area because of limited parking. The idea is that parking will not be free, but will always be available and convenient (Shoup 2011, 399).

While this seems intuitive for economists, many businesses and local policy makers are wary of charging for what is commonly considered a public good. Decision-makers need to strike a balance between policies that bring in revenue and regulate parking demand, and policies that don’t keep people from visiting an area and patronizing businesses because parking is too crowded or too expensive (Shoup 2011; Marsden 2006, 3).

What price is best?

Shoup claims the correct price for parking is the lowest price that will avoid shortages. This means that parking should be expensive enough to leave some spaces available at all times, but cheap enough so that people can still use the parking for the amount of time that they need. Since parking demand is different on each block, there is no single price for parking that can be applied to ensure this level of availability. Shoup and other parking experts recommend cities price curb spaces so that 15 percent of spaces will remain vacant. This is believed to be the optimally efficient level to maximize use of spaces while still ensuring people can readily find available parking spaces. Shoup says this level of availability “eliminates the need to cruise, and a few spaces will generally be vacant within a block or two from any point” (Shoup 2011, 297).

Areas with high demand and high occupancy will be charged at a higher rate than other areas. People who place a higher value on their time and the location are more willing to pay a higher rate to park there. People who cannot afford higher demand areas are able to park further away in areas they can afford, or to use other transportation modes. Shoup says this optimal price for parking has three main effects (Shoup 2011, 399):

1. People can find a parking space with little to no cruising.
2. Paying for parking encourages people to park for shorter durations, which increases the turnover rate.
3. Drivers are more likely to carpool to split the cost of parking.

This system of pricing is designed to allocate curb spaces efficiently rather than maximizing revenue. While it requires cities to monitor the parking occupancy and to make adjustments to pricing by time and location, it ensures the constant availability of parking. Businesses can benefit from this availability by knowing their customers can always find a parking space nearby. People who require parking for short periods of time only need to pay a small amount (Shoup 2011).

Shoup recommends the revenue collected from parking meters be reinvested in the area where the parking meters are located. Because implementing paid parking, or increasing the rate people need to park, can be controversial or politically difficult, Shoup believes the additional money collected from the meters should support infrastructure, programs and public services in the neighborhood. Shoup believes the money can fund sidewalk repairs, street cleaning, landscaping, the local downtown association, or even large capital projects (Shoup 2011).

Downtown Eugene

In the past few years, downtown Eugene has seen considerable new growth that signals a reemergence of Eugene’s commercial center. Since 2011, a few new buildings have been built, renovated, are under construction or are in the planning stages. The Broadway Commerce Center, the Lane Community College Downtown Campus, the Woolworth Building, the Wayne L. Morse Federal Courthouse and the Inn at the 5th are some of the more prominent buildings recently built downtown. The construction of these buildings signals a change in how people perceive downtown. For many years, two pits in downtown signaled a stalled economy and were metaphors for how downtown had become neglected (City of Eugene 2013c).

With the recent wave of new investment, the heart of Eugene has been evolving and people are becoming more optimistic about its future. This is indicated in the amount of new developments that have been proposed or are under construction. The old First National Bank Building is undergoing

renovations and will open with a new movie theater, food and drinking establishments and 19 apartments; land was recently purchased from the City for a future expansion of the Shedd Institute; and there are plans for a new mixed-use development at 6th Avenue and Oak Street with housing, retail and a grocery store. The 13th & Olive Apartments (commonly referred to by the name of its developer, Capstone) are one of the largest projects in downtown Eugene. At the time of writing, it was expected to open in fall 2013 and will have almost 400 apartments once both phases are completed by fall 2014 (Buri McDonald 2013; Russo 2013a; Russo 2013b; Wihtol 2013).

With all this growth comes the concern about parking supply and demand. The free parking policy was meant to act as support for businesses and a catalyst for downtown growth. Downtown has reached a point where there is significant momentum in the development of downtown. The present condition of downtown is a good time for the City to review its parking policy. City of Eugene staff and decision-makers will use the following sections of this report to inform them as they evaluate the current parking program and propose what modifications, if any, to enact.

II. Business Survey

In January and February 2013, Downtown Eugene Inc. sent e-mails to 142 businesses in downtown Eugene asking for them to complete a survey about parking in downtown. The purpose of the survey was to understand the thoughts of the business community about parking and understand what impacts the parking policy in downtown has had on the businesses. A total of 62 partially or fully completed surveys were received, representing a 44 percent response rate. It should be noted that this survey was administered to businesses within and outside the free 2-hour zone. No question was included to determine which respondents were in the zone or not. For a copy of the e-mail and the survey, see Appendices A and B.

Characteristics of respondents

Many types of businesses in the downtown area completed the survey. The largest types of business that participated in the survey were retail establishments, followed by professional services (Table 1). Retail establishments include shops, clothing stores and bookstores. Professional services include offices for law firms, architectural firms, design services, consulting services, etc. Four businesses selected “other” as their industry and wrote either “restaurant” or “food services” to describe their business. These restaurant and food service businesses, in addition to businesses in the retail and arts/entertainment/recreation industries are the types of establishments that depend on available parking spaces for their patrons. These businesses represent almost half of the respondents to the survey. I will refer to these industries collectively as retail, food and entertainment. Of the people who completed the survey, the majority were business owners and managers, representing 93 percent of the respondents (Table 2).

Table 1. Industry sectors represented

Industry	Number	Percentage
Retail	23	38%
Professional services	11	18%
Arts, entertainment and recreation	6	10%
Real estate	5	8%
Finance and insurance	5	8%
Social services	1	2%
Other	9	15%
Total	60	100%

Source: Eugene Downtown Business Parking Survey, February 2013

Table 2. Business positions represented

Position	Number	Percentage
Business owner	37	64%
Manager	17	29%
Property owner	4	7%
Total	58	100%

Source: Eugene Downtown Business Parking Survey, February 2013

The majority of businesses (27 percent) estimated they have between 20 and 50 patrons in an average day. This was followed by businesses that have between 5 and 10 patrons each day (18 percent). For

employment, most survey respondents were small businesses with few employees. Sixty-five percent of the responses were from businesses with 10 or fewer employees.

Perceptions of downtown parking

When asked about how they perceive the availability of parking downtown, most businesses had a favorable assessment of parking conditions (Table 3). More than half (62 percent) of the respondents believe spaces are sometimes available, and only 8 percent think spaces are always available. A considerable share of the respondents (30 percent) thought spaces were rarely available. When broken down by industry, businesses in the retail, food and entertainment sectors more strongly believed spaces were sometimes available, with a smaller share believing spaces are always or rarely available.

Table 3. Business perceptions of parking space availability

Availability	Retail, food and entertainment		All Respondents	
	Number	Percentage	Number	Percentage
Always	1	3%	5	8%
Sometimes	23	70%	38	62%
Rarely	9	27%	18	30%
Total	33	100%	61	100%

Source: Eugene Downtown Business Parking Survey, February 2013

Overall, the general perception of the free on-street parking program among businesses is mixed (Table 4). In response to a question about how neighboring businesses use “their fair share” of on-street parking, most were unsure (44 percent), with a third believing businesses were not using more of their share (32 percent). As for whether downtown employees were parking on the street, there was no clear consensus (Table 5). Forty-three percent believed employees were parking on the street, 30 percent were not sure, and 27 percent did not think employees were parking on the street.

Table 4. Businesses use more than their fair share of on-street parking

Response	Number	Percentage
Agree	15	24%
Not sure	27	44%
Disagree	20	32%
Total	62	100%

Source: Eugene Downtown Business Parking Survey, February 2013

Table 5. Employees use on-street parking

Response	Number	Percentage
Agree	26	43%
Not sure	18	30%
Disagree	16	27%
Total	60	100%

Source: Eugene Downtown Business Parking Survey, February 2013

In terms of the impact of the 2-hour free parking program (Table 6), the majority of the businesses (51 percent) believe it is working “somewhat,” with the remaining 49 percent evenly split in terms of working well or not at all. When broken down by sector, businesses in the retail, food and

entertainment industry are more likely to rate the 2-hour free parking program as not working well. Thirty-four percent consider the program to not be working well, while overall only a quarter of businesses believe it is not working well.

Table 6. How well the 2-hour free parking program works

Response	Retail, food and entertainment		All respondents	
	Number	Percentage	Number	Percentage
Well	5	17%	13	24%
Somewhat	14	48%	28	51%
Not working	10	34%	14	25%
Total	29	100%	55	100%

Source: Eugene Downtown Business Parking Survey, February 2013

The survey gave respondents the opportunity to explain their rating with an open-ended question. Twenty-nine respondents used this opportunity to provide extra feedback about their thoughts of downtown parking (Table 7). The most common issue mentioned by these respondents is that employees abuse the free parking. Ten people mentioned this issue, often adding these employees move their vehicles every two hours to avoid being ticketed. The next most common remark (shared by seven individuals) is that free parking should be available throughout all of downtown. Five people indicated that finding parking spaces in downtown Eugene is difficult. The remaining comments are statements supporting or opposing free parking, comments about enforcement, and general parking comments.

Table 7. Comments about the parking program

Issue	Frequency	
Employees abuse the free parking	high	10
All of downtown should have free parking		7
It is difficult to find available parking spaces		5
Support for metered parking	medium	4
Needs more strict enforcement		3
Free parking attracts customers		3
Downtown needs more parking		3
There should be less enforcement	low	2
Support for free parking		2
People do not know about the parking garages		1
Parking meters ensure availability of spaces		1
Parking meters are too expensive		1
Confusion about free zone boundaries		1

Source: Eugene Downtown Business Parking Survey, February 2013

When asked about their position on the parking program, 67 percent of all respondents support the program (Table 8). A greater share – almost 80 percent – of businesses in the retail, food and entertainment sector support the program. Despite this broad support, very few of the businesses indicated the free 2-hour parking was a contributing factor in a change in their sales revenue (Table 9). Only 17 percent of businesses believed the parking program had a lot or some impact, with 59 percent believing it had no impact at all. Of the businesses in the retail, food and entertainment sector, 42

percent did not think the free parking had any impact, but about 58 percent believe it had some or a little impact on their revenue.

Table 8. Position on the free parking program

Response	Retail, food and entertainment		All respondents	
	Number	Percentage	Number	Percentage
Support	25	78%	41	67%
Oppose	5	16%	13	21%
Not sure	2	6%	7	12%
Total	32	100%	61	100%

Source: Eugene Downtown Business Parking Survey, February 2013

Table 9. Contribution of free parking program to increased revenue

Response	Retail, food and entertainment		All respondents	
	Number	Percentage	Number	Percentage
Not at all	10	42%	27	59%
A little bit	9	38%	11	24%
Some	5	21%	7	15%
A lot	0	0%	1	2%
Total	24	100%	46	100%

Source: Eugene Downtown Business Parking Survey, February 2013

Another variable that demonstrates how effective the free 2-hour parking has been in supporting businesses is the number of patrons that come into the businesses. The survey asked businesses to estimate how much patron volume has changed in the past two years. Overall, most businesses say patronage volume has increased or stayed the same. For retail, food and entertainment establishments, an almost equal share of businesses noted increased patronage. But, the patronage volumes decreased for 27 percent of these businesses, while only 17 percent of all businesses saw decreased patronage.

Table 10. Change in patron volume in the past two years

Response	Retail, food and entertainment		All respondents	
	Number	Percentage	Number	Percentage
Increased significantly	3	9%	6	10%
Increased slightly	14	42%	26	43%
Stayed the same	7	21%	18	30%
Decreased slightly	4	12%	5	8%
Decreased significantly	5	15%	5	8%
Total	33	100%	60	100%

Source: Eugene Downtown Business Parking Survey, February 2013

The majority of survey respondents (89 percent) estimate an average customer on a typical visit parks for less than two hours. In terms of the location of where they park, 55 percent of the respondents indicated their customers park on the street, 25 percent indicated they park in an off-street garage or lot, with the remaining 20 percent using private off-street parking.

Key findings

The results of this survey point to important information about how the parking program is working. These findings are as follows:

1. Businesses are concerned about employee parking.

The intention of implementing a time limit on parking is to encourage turnover of vehicles and to ensure patrons and visitors can easily find a parking space. Employees need places to park during an entire day and this all-day parking need is incompatible with high turnover rates. Downtown business managers perceive that many employees use the free parking and choose to move their car every two hours. A significant share of respondents to the survey believed employees were parking in the free curbside spaces, and the most common open-ended comment was about the abuse by employees of the free parking.

2. Businesses do not believe parking availability is optimal.

One open parking space on each block is a sign of a healthy downtown. Without available parking spaces at all times of the day, patrons and downtown visitors have a hard time finding a place to park, choose to cruise and may decide not to return. This negatively impacts businesses that lose out on potential customers and revenue. Unfortunately, most businesses that answered the survey believe spaces are sometimes or rarely available. Very few businesses believed spaces were always available.

3. Some businesses that depend on parking are not seeing the intended impacts of the program.

The intention of the free parking program was to support businesses and attract more people downtown. Two and a half years after its implementation, most businesses have not seen this positive impact. In addition to a generally negative perception of the program's effectiveness, about half of all businesses have not seen increased patronage volume. And greater numbers of businesses have seen little to no positive revenue impact on their business as a result of the free parking program.

4. Support for the parking program is high, but businesses indicated it is not working.

Among the businesses that characterized themselves as retail, food and entertainment, there were higher levels of support for the free parking program than the wider business community (78 percent versus 67 percent). Despite this high level of support by businesses that depend on parking, a fair number of these businesses (34 percent) indicated that the program is not working (compared to 25 percent of all businesses).

The effectiveness of the free 2-hour zone is also doubted by most businesses. Three-quarters of all businesses think the program is working somewhat or not at all. This is not a positive assessment of a program that is intended to benefit them. Regardless, most businesses support the program. The support is even stronger for the types of businesses that are more likely to depend on on-street parking for their day-to-day business. This implies most businesses are optimistic about the parking program and expect the long-term impacts to support downtown and their business, even if the program is not working as well as it could at present.

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III. Survey of Downtown Visitors

In addition to a survey of the businesses, the opinions of patrons and downtown visitors are important to understanding parking conditions in downtown Eugene. To obtain the opinions of these patrons, I administered an intercept survey in March and April 2013 within the 2-hour free zone between 7 AM and 6 PM, Monday through Saturday. The total population I surveyed is people who had just parked their car in a curbside space within the zone, or were returning to their cars. People who parked in commercial-only spaces, loading zones or handicapped parking were excluded from the survey as I only wanted to interview the people who parked in general spaces that were time-limited and were not subject to other special circumstances.

After a driver had parked their car in a curbside space, or as they were returning to their cars, I approached the driver and asked them to answer some questions about downtown parking. Over a period of six days, 50 people agreed to complete the survey. For many of these questions, respondents had the opportunity to select more than one response. See Appendix C for a copy of the survey.

Downtown visitation patterns

The first section of the survey asked respondents about their visitation habits to downtown Eugene. The majority of people (78 percent) said they come downtown once a week or more often. Most people said they stay downtown between one and four hours each day (Table 11).

Table 11. Duration of stay downtown

Response	Number	Percentage
Less than one hour	5	10%
1 to 2 hours	17	35%
2 to 4 hours	18	37%
4 to 6 hours	4	8%
More than six hours	5	10%
Total	49	100%

Source: Downtown Eugene Parking Survey, April 2013

The survey asked respondents about why they usually come downtown, with the options of work, shopping, eating or other. The most common responses for 'other' were drinking and the library. For my analysis, I merged drinking with the eating category and created a library category. Most people cited eating or drinking, followed by work (Table 12). A quarter of respondents indicated shopping as one of their reasons for coming downtown, with 16 percent citing the library.

Table 12. Purpose for coming downtown

Response	Frequency	Percentage
Eating/drinking	19	38%
Work	17	34%
Shopping	12	24%
Library	8	16%
Other	16	32%

Source: Downtown Eugene Parking Survey, April 2013

On the day the respondents answered these survey questions, they had all arrived downtown by personal car. But, when asked if they ever use other transportation modes to go downtown, 27 people

(54 percent of the respondents) said they do use other modes (Table 13). Fifty-nine percent of these people indicated the bicycle was one of the modes they used. Almost equal numbers of people indicated they also go downtown by foot or transit. Of the 27 people who use other modes, nine people indicated more than one mode.

Table 13. Mode of transportation to downtown

Response	Frequency	Percentage
Car only	23	46%
Car and by bike	16	32%
Car and by foot	12	24%
Car and by transit	11	22%

Source: Downtown Eugene Parking Survey, April 2013

Use of downtown parking

When asked what types of parking they usually use, 94 percent of the people indicated they use on-street parking, 40 percent said they use public garages, and 18 percent said they use private or business parking. Twenty-three people (almost half) indicated they use more than one type of parking.

As the free 2-hour zone is time-limited, it is important to understand how long people remain in one parking spot (Table 14). The majority of people (74 percent) indicated they park within the two-hour limit. A quarter of people said they park up to two hours past the two-hour limit.

Table 14. Duration of parking

Response	Frequency	Percentage
Less than one hour	5	10%
1 to 2 hours	32	64%
2 to 4 hours	12	24%
4 to 6 hours	1	2%
More than six hours	4	8%

Source: Downtown Eugene Parking Survey, April 2013

The availability of parking has a direct impact on traffic and cruising. When parking is readily available, traffic levels are lower and people find spaces faster. When asked how often the drivers found parking where they wanted it, one in six indicated sometimes (Table 15). Thirty percent said they rarely find a desirable location, and only 12 percent said they always found parking where they wanted it.

When conducting the survey, people often added unsolicited verbal comments when answering the questions. Many of the people who indicated they always find parking where they want it told me they had no preference on specific locations. This, they said, is how they are always able to find parking. Additionally, some people who indicated they rarely find parking told me that the space in which they had just parked was found by chance and almost never occurs.

Table 15. Visitor perceptions of parking space availability

Response	Number	Percentage
Always	6	12%
Sometimes	30	60%
Rarely	14	28%
Total	50	100%

Source: Downtown Eugene Parking Survey, April 2013

The original intent of implementing the free 2-hour zone was to make downtown more attractive and improve the appeal of downtown. When asked about the impact of free parking on downtown, the vast majority of people (76 percent) believed it had a positive impact (Table 16). Only three people said it was negative, and nine people did not know. Additional unsolicited comments I heard when people answered this question was that anything that is free is positive. My impression was that people considered the direct impact of free goods on them, and did not consider the wider implications of free parking in an area with high demand. Of the few people who indicated free parking has a negative impact on downtown, some commented that free parking leads to an overuse of parking that makes it very difficult to find any available spaces.

Table 16. Impact of free parking on downtown

Response	Number	Percentage
Positive	38	76%
Negative	3	6%
Not sure/Don't know	9	18%
Total	50	100%

Source: Downtown Eugene Parking Survey, April 2013

When asked about how paid parking would impact their frequency of downtown visits, a little more than half (54 percent) said they would come downtown less often (Table 17). Slightly fewer people (44 percent) said paid parking would not impact how often they come downtown.

Table 17. Potential impact of paid parking on frequency of trips downtown

Response	Number	Percentage
Come downtown less often	27	54%
No impact	22	44%
Not sure/Don't know	1	2%
Total	50	100%

Source: Downtown Eugene Parking Survey, April 2013

At the end of the survey, respondents were given the option to provide any additional comments about parking downtown; 23 people took up the offer. The three most common remarks (each were noted by four people) were statements of support for the free 2-hour zone, that it is difficult to find available parking spaces, and that there should be more free parking. One individual liked the free zone so much that she said, "my prayers have been answered." Four other people offered their own assessment of how the parking conditions are in downtown Eugene: two said that parking is bad; one said it has improved a lot; and another stated that it "works out pretty well."

The remaining comments were miscellaneous remarks and were not shared by others. One person stated, “Corvallis is booming and they have free parking.” Another believed there should be a greater variety of parking durations, especially for times longer than 2 hours. One woman said that it was hard for her to find available handicapped parking. Another person believed that no one liked parking garages. One respondent commented about the emergency vehicle parking on Charnelton Street north of 10th Avenue. They said that the signage was ineffective, resulting in them getting a ticket. They recommended the City paint the parking spaces so that drivers would be less likely to mistake the space as available to the general public. One final comment was that downtown Eugene had too much surface parking.

Key findings

This survey demonstrates important information about how patrons use downtown parking, and what the public wants from a downtown parking program. The results are as follows:

1. People like free parking.

A significant number of people believed free parking was a constructive attribute for downtown. Almost 80 percent of people said it had a positive effect on downtown, and people chose to additionally mention in the open-ended comments that they support free parking and believe all (or at least more) parking should be free.

2. Some people, but not all, would change their downtown visitation habits with paid parking.

Almost half of all people indicated paid parking would result in fewer trips downtown. But these people were not an overwhelming majority; indicating paid parking would not have drastic impacts for downtown businesses. There is also the potential that drivers overestimated their decrease in downtown visitation to dissuade policy-makers from reintroducing paid parking in the free zone.

3. People are familiar with coming downtown without their cars.

One important finding from the survey was that less than half of survey respondents only used their car to access downtown. Therefore, a majority of drivers are familiar with traveling downtown without a car. This familiarity indicates travel to downtown is not necessary by car, and if parking spaces are too difficult to find or too expensive for someone to afford, they are comfortable coming downtown by other means. This flexibility of downtown visitors is an asset for downtown businesses, because it ensures accessibility regardless of the price, availability or duration of parking.

4. Drivers stay in downtown longer than parking durations allow.

Two questions in the survey showed a disparity between time limits of parking and the most common needs of downtown patrons. Forty-five percent of respondents said they stay downtown for two hours or less. But when asked about how long they keep their vehicle in one parking space, 74 percent said they park for two hours or less. This disconnect could indicate two things: (1) people underreported how long they usually park because they felt guilty that they overstayed in each two-hour space, or (2) that a significant share of people move their car to avoid being fined. Either way, it demonstrates that the two-hour time limits do not correspond with the time that drivers want or need to stay downtown.

IV. Parking Counts

The final step in my study of downtown Eugene's free parking was a series of parking counts. These parking counts are meant to determine the actual conditions of parking in downtown Eugene and to compare how the free 2-hour zone compares with an area where the parking meters are still used.

In preparation of the parking counts, I counted the total number of parking spaces on each block face between 7th Avenue, High Street, 11th Avenue and Lincoln Street. A block face is one side of a city block between two intersecting streets. This study area includes the 12-block area of the free 2-hour zone (from Lincoln Street to Willamette Street) and the 12-block area to the east (Willamette Street to High Street). The latter area continues to use parking meters to manage parking demand but was included because it is similar in density and land use to the areas of the free parking zone (see Figure 1 for a map of these areas). This similarity provides a suitable control group in which to compare the free 2-hour zone. When parking meters were eliminated from the free 2-hour zone, the areas outside the zone were not modified.

For this study, I only looked at spaces that are available for the general public. I ignored spaces reserved for loading or unloading, people with disabilities, car sharing, motorcycles, emergency vehicles, or commercial vehicles. In total, there are 561 spaces in the study area: 287 spaces in the free 2-hour zone, and 274 spaces in the metered zone.

Figure 1. Map of parking areas



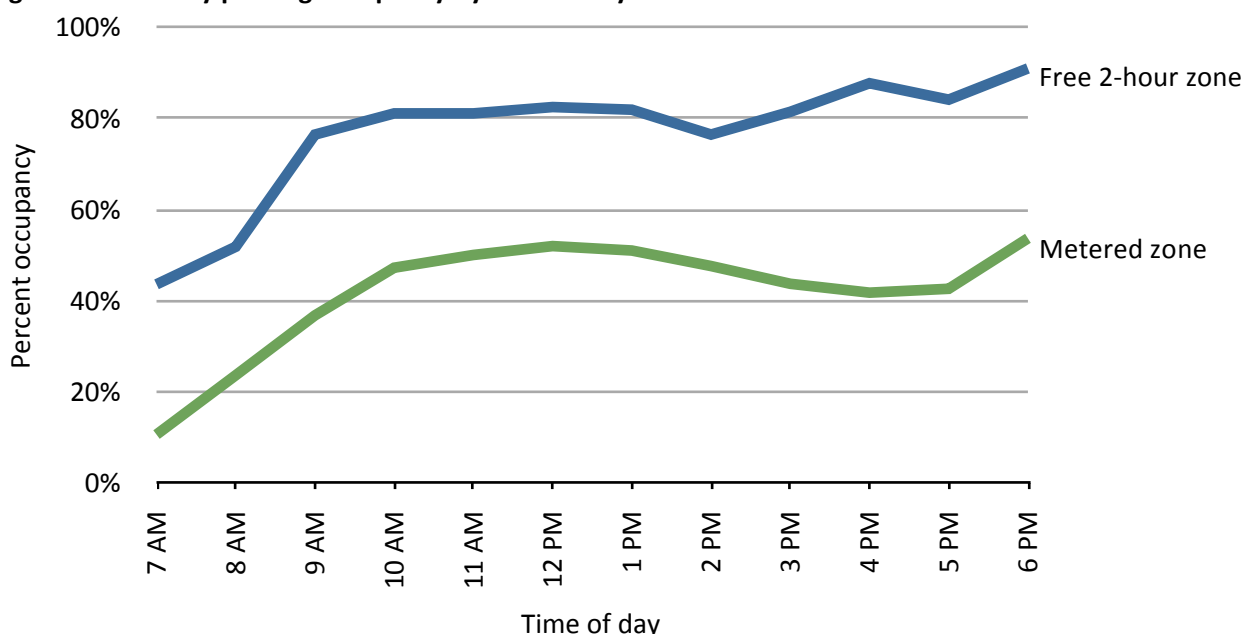
I completed my parking counts by bicycle in April 2013. During the weekday, counts were conducted on each hour from 7 AM through 6 PM. To ensure accuracy of the counts and to obtain a typical sample of

parking conditions, I conducted three different counts during each hour. These three numbers were averaged to come up with one number to represent the occupancy of each block face. By averaging the counts, I am able to reduce the chances that weather, a special event or other circumstances could impact the typical parking occupancy on each block face. I also conducted counts on Saturday from 7 AM through 6 PM. Due to time constraints, I only conducted one series of counts on Saturday. See Appendices D and E for raw data and hourly maps from the parking counts.

Weekday results

To determine the percent occupancy of each block face, I divided the average number of vehicles parked on each block face by the total number of spaces available. The resulting number is the percent occupancy for each block face. The following graph (Figure 2) represents the overall parking occupancy in downtown on a weekday. The blue line shows the parking occupancy in the free 2-hour zone, and the green line shows the parking occupancy in the metered zone.

Figure 2. Weekday parking occupancy by time of day



Source: Downtown Eugene Parking Counts, April 2013

As the graph shows, the free zone was consistently more occupied than the metered zone. On average, the parking occupancy in the free zone is 35 percent higher than in the metered zone. Both areas begin the day with low occupancy rates. By 9 AM, the free zone is close to 80 percent full while the metered zone is about half occupied. Occupancy in the free zone levels out over the course of the day between 80 and 85 percent between 10 AM and 4 PM. The highest occupancy rates occur at 4 PM and 6 PM with occupancies of 88 and 90 percent, respectively. The metered zone levels out around 50 percent occupancy between 10 AM and 2 PM, decreases close to 40 percent in the afternoon before increasing to 54 percent after 6 PM.

The increasing occupancy rates in both zones at the end of the study period demonstrate a latent demand for unregulated parking in the area. At 6 PM, the 2-hour zone is no longer in effect and parkers are no longer required to pay for parking in spaces regulated by parking meters. The lack of time limits

or a cost to park after 6 PM increases options for people to park downtown and encourages more people to park.

While these figures show the overall occupancy rates, the rates vary by street and time of day. Willamette Street was consistently the busiest street for parking in the study area, with an average weekday occupancy rate of 90 percent. In the early morning hours, Willamette Street's occupancy was about 73 percent, the highest of any street during those hours. Between 9 AM and 6 PM the occupancy rates on Willamette Street were 90 percent or greater for all but one hour. The following tables provide a breakdown by time of day for weekday parking occupancy rates in the free 2-hour zone (Table 18) and in the metered zone (Table 19). The 6 PM occupancy rates are listed in a separate column because during this hour parking restrictions and meters are no longer enforced. Highlighted cells indicate times and streets that have an average occupancy at or above 85 percent.

Table 18. Average weekday parking occupancy (free zone)

Street	7 – 8 AM	9 – 11 AM	12 – 2 PM	3 – 5 PM	6 PM	Daily occupancy
Willamette Street	73%	94%	89%	95%	94%	90%
West Broadway	51%	90%	91%	95%	96%	85%
Charnelton Street	54%	83%	83%	92%	96%	81%
Olive Street	39%	86%	86%	90%	100%	80%
West 10th Avenue	25%	82%	83%	91%	97%	76%
West 8th Avenue	46%	74%	75%	81%	99%	73%
West 11th Avenue	27%	67%	73%	67%	54%	61%
Lincoln Street	32%	55%	59%	53%	76%	53%
Overall	48%	80%	80%	84%	91%	77%

Source: Downtown Eugene Parking Counts, April 2013

Table 19. Average weekday parking occupancy (metered zone)

Street	7 – 8 AM	9 – 11 AM	12 – 2 PM	3 – 5 PM	6 PM	Daily occupancy
East Broadway	28%	62%	73%	66%	90%	62%
East 10th Avenue	42%	50%	56%	61%	67%	54%
Park Street	19%	62%	65%	52%	63%	53%
Pearl Street	26%	51%	62%	57%	75%	53%
East 8th Avenue	22%	71%	61%	44%	39%	51%
Oak Street	17%	41%	41%	41%	45%	38%
East 11th Avenue	10%	17%	40%	35%	48%	29%
High Street	3%	6%	8%	8%	18%	7%
Overall	17%	45%	50%	43%	54%	42%

Source: Downtown Eugene Parking Counts, April 2013

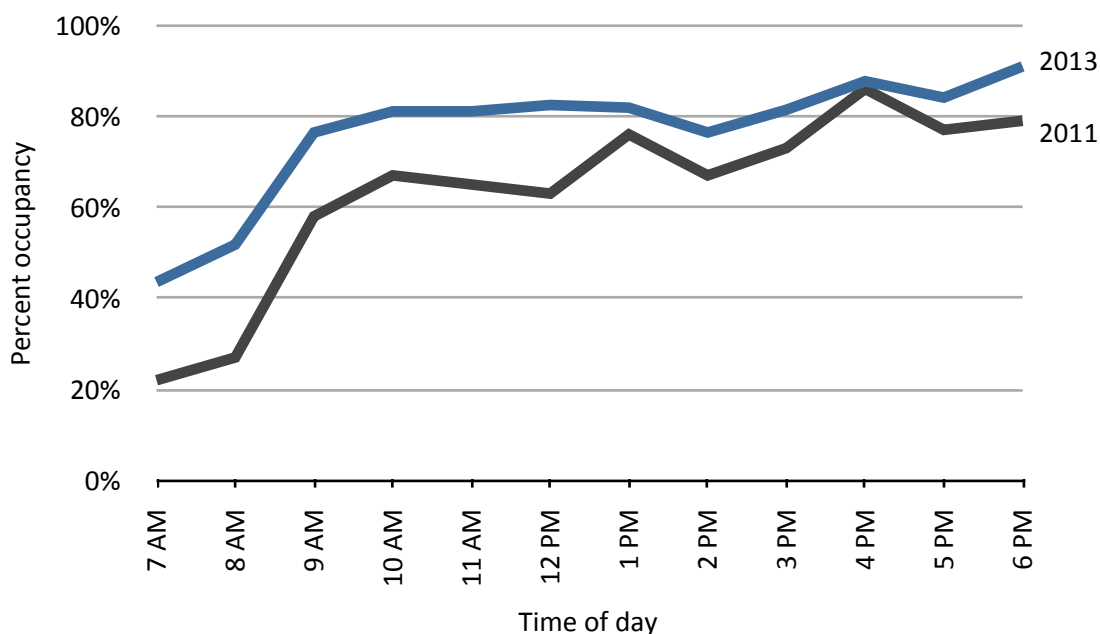
Within the free 2-hour zone, Willamette Street, Broadway, Charnelton Street, Olive Street, 10th Avenue and 8th Avenue experienced occupancy rates at or above 85 percent for one or more hours of the day. None of the streets in the metered zone approached this consistently high level of occupancy. While East Broadway was the metered street with the highest average occupancy rate, the occupancy rate throughout the day leveled out between 65 and 75 percent, and peaked at 90 percent after 6 PM (when the parking meters are no longer enforced).

High Street experienced the least demand, with an average daily occupancy of 7 percent. The highest occupancy rate on High Street was after 6 PM with 18 percent of spaces filled. This low rate of occupancy is likely due to the lack of density and active land uses along High Street.

Changes since 2011

In Claire Otwell's original study of the free 2-hour parking program two years ago, she also conducted parking counts. Her study focused on parking occupancy within the free 2-hour zone, and did not include parking counts of metered spaces. In her counts from May 2011, she found similar hourly trends that I did. Morning occupancy rates are very low until around 9 AM when the occupancy rates begin to level off, and peak in the late afternoon hours. While similar, the observed occupancy rates were higher in 2013 than in 2011, especially during the morning and early afternoon hours (Figure 3). The counts in the late afternoon and evening are more similar and reflect increased downtown activity during these hours (Otwell 2011, 49).

Figure 3. Comparison of 2011 and 2013 weekday counts



Source: Downtown Eugene Parking Counts, April 2013 and Otwell, May 2011.

The following table (Table 20) breaks down the weekday parking occupancy rates by street for both years. All streets saw increased occupancy rates from when counts were conducted in 2011. The streets with the greatest increase were 11th Avenue and Broadway, which saw an increase of 20 and 19 percentage points, respectively. The average parking occupancy rate for the entire free 2-hour zone increased by 14 percentage points, from 63 to 77 percent. According to Otwell's report, the average daily occupancy prior to the program's implementation in 2010 was between 30 and 60 percent (Otwell 2011, 50).

Table 20. Change in average weekday parking occupancy

Street	2011	2013	Difference
Willamette Street	81%	90%	9%
West Broadway	66%	85%	19%
Charnelton Street	72%	81%	9%
Olive Street	66%	80%	14%
West 10th Avenue	72%	76%	4%
West 8th Avenue	61%	73%	12%
West 11th Avenue	41%	61%	20%
Lincoln Street	43%	53%	10%
Overall	63%	77%	14%

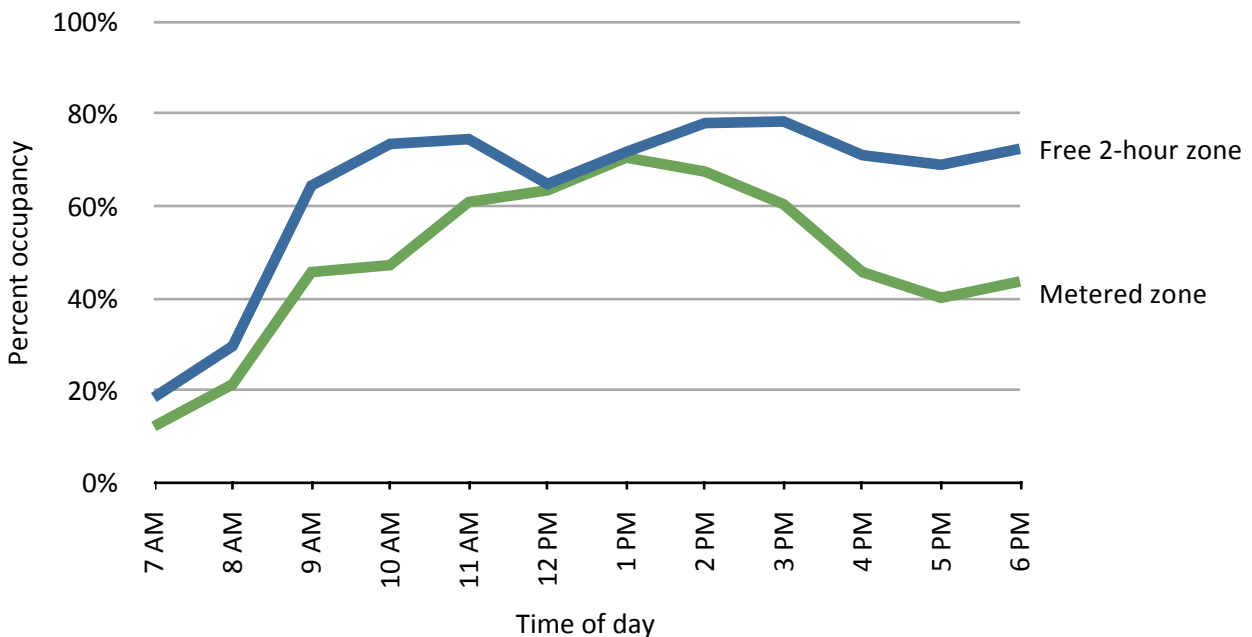
Source: Downtown Eugene Parking Counts, April 2013; and Otwell, May 2011

Saturday results

In addition to the weekday counts, I conducted Saturday counts. Unlike the weekday data collection, which consisted of three counts to obtain an average, I only did one count for each hour on Saturday. While this provides a valid sample of Saturday occupancy, additional counting would confirm whether these occupancy rates are typical of Saturday parking conditions. Additionally, the Saturday Market impacted my methodology for parking counts on Saturday. Segments of Park Street, 8th Avenue and Oak Street are closed for the Market. To account for this circumstance, I did not count any vehicles on Park Street, on 8th Avenue between Oak Street and West Park Street, or on Oak Street between 8th Avenue and South Park Street. Ignoring the 77 spaces on these streets, there are 484 spaces in the Saturday study area: 287 spaces in the free 2-hour zone, and 197 spaces in the metered zone.

Saturday parking occupancy rates in the free 2-hour zone were higher than in the metered zone, but there was less difference between both rates than in the weekday counts (Figure 4). Both zones started with occupancy rates below 20 percent, but leveled off between 60 and 80 percent in the afternoon. Parking occupancy during the 12 PM and 1 PM hours in both zones were within a couple percentage points of each other, about 64 percent and 71 percent respectively.

Figure 4. Saturday parking occupancy by time of day



Source: Downtown Eugene Parking Counts, April 2013

While the parking occupancy in the free 2-hour zone is lower than during the weekday, the metered zone has higher levels of occupancy, especially in the middle of the day. The lower demand in the free zone could indicate employees use these spaces during the weekday. The higher demand in the metered zone is likely related to the Saturday Market. The popularity of the Saturday Market has a definite impact on demand for parking closest to the market. Because the market is located on the Park Blocks – within the metered zone – it is expected that these metered spaces will experience greater demand and occupancy. Additionally, patrons to the Saturday Market may be less knowledgeable about the different types of on-street parking in downtown and park based on location and not price.

The following two tables break down the overall parking occupancy by street and time of day for the free zone and the metered zone. Willamette Street has the highest occupancy in the area, as was the case during the work week. Highlighted cells indicate times and streets that have an average occupancy rate at or above 85 percent

Table 21. Average Saturday parking occupancy (free zone)

Street	7 – 8 AM	9 – 11 AM	12 – 2 PM	3 – 5 PM	6 PM	Daily occupancy
Willamette Street	42%	99%	94%	86%	89%	84%
West Broadway	21%	84%	86%	84%	89%	74%
Olive Street	12%	79%	86%	79%	85%	70%
West 8th Avenue	28%	67%	70%	77%	85%	65%
Charnelton Street	30%	68%	70%	73%	70%	64%
West 10th Avenue	10%	70%	70%	73%	40%	58%
West 11th Avenue	15%	43%	49%	57%	65%	45%
Lincoln Street	12%	45%	37%	43%	24%	36%
Overall	24%	71%	72%	73%	72%	64%

Source: Downtown Eugene Parking Counts, April 2013

Table 22. Average Saturday parking occupancy (metered zone)

Street	7 – 8 AM	9 – 11 AM	12 – 2 PM	3 – 5 PM	6 PM	Daily occupancy
East Broadway	27%	79%	92%	74%	97%	74%
Pearl Street	23%	68%	91%	81%	100%	72%
East 8th Avenue	18%	90%	99%	56%	21%	66%
Oak Street	33%	74%	81%	39%	17%	55%
East 10th Avenue	0%	50%	67%	67%	100%	54%
East 11th Avenue	13%	20%	42%	49%	21%	32%
High Street	0%	9%	26%	9%	11%	12%
Overall	17%	51%	67%	49%	44%	48%

Source: Downtown Eugene Parking Counts, April 2013

Key findings

The purpose of conducting parking counts was to document actual parking conditions in downtown and to compare the parking demand and occupancy rates between the free and metered zones. The results are as follows:

1. Not all parking spaces have the same demand.

Some parking spaces are located in popular areas of downtown where many people want to go, and others are located further away from desirable destinations. The former are usually at or near full capacity, while the latter often have availability. These parking counts show that downtown Eugene always has available on-street parking spaces. The caveat is that these spaces are not spread evenly throughout downtown. While some areas are full most of the day (i.e., they have occupancy rates at or above 85 percent), there are other areas where half or more of all spaces are unoccupied.

2. People prefer to park in free spaces.

Even with similar densities and types of land uses, the metered zone of downtown had consistently more parking availability than the free 2-hour zone. When the price of a commodity is free, people are more likely to consume it. The downtown parking spaces operate in the same fashion as the field used in the Tragedy of the Commons analogy. When land is free or unregulated, farmers are more likely to place their livestock on this land to graze. The overconsumption of this land degrades the environment. Similarly, by decreasing the cost of parking in some areas of downtown, the City of Eugene entices drivers to park in the free spaces, leading to high parking occupancy and cruising (Shoup 2011, 7). A few minutes spent searching for an open parking space in the free 2-hour zone is cheaper than paying for two full hours of parking.

3. Parking occupancy has increased in recent years.

The weekday parking occupancy rate of the free zone was estimated to be between 30 and 60 percent prior to October 2011, about 63 percent in May 2011, and 77 percent in April 2013. This trend of increasing occupancy rates may indicate that the free 2-hour parking program is having its intended effect of attracting more people downtown. While it is hard to know how much the parking program itself is a direct cause of this, it is a positive sign for downtown Eugene. The increasing occupancy rates have been consistent with the recent developments in downtown that are attracting more businesses and patrons.

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V. Conclusions and Recommendations

This study was an attempt to determine the effectiveness of the free parking program since its implementation in October 2010. After gathering the thoughts of downtown businesses, opinions of downtown visitors and conducting a series of parking counts, I compiled the following conclusions and recommendations to help the City improve the supply of downtown parking and to contribute to the revitalization and growth of downtown Eugene.

Conclusions

1. Businesses and downtown visitors have different perceptions of parking availability and the impact of free parking.

In the surveys of businesses and patrons, there were almost equal shares of people that believed parking spaces were always, sometimes or rarely available (see Tables 3 and 15). But patrons have a more favorable view of parking availability than businesses. Parking was thought to be always available by 8 percent of businesses and by 12 percent of patrons. Thirty percent of businesses thought parking was rarely available, while 28 percent of patrons shared this viewpoint. While these are not significant differences, they suggest businesses have a more negative assessment of parking availability than the people who are actually using the parking.

Additionally, patrons and businesses had differing opinions about the impact of free parking on downtown. While 17 percent of all businesses noted the free parking program had little or no impact on improved revenue, 76 percent of downtown visitors believed the free parking program had a positive impact on downtown.

2. Parking occupancy rates are high in the free zone, but low in the metered zone.

The parking counts showed that the free zone was consistently more occupied than the metered zone. This is an inefficient use of street space. For many drivers, the personal benefits to parking in a free space outweigh the cost of parking in a metered location. The possibility of parking in a free space decreases demand for the metered space, and leads to a perception that the cost of \$1 per hour in the metered zone is too high. This encourages people to cruise around downtown Eugene until they find a parking space that is free. By cruising, they are contributing to congestion and emitting pollution. Even with available spaces a few blocks to the east, people are voting with their wheels and parking in the free 2-hour zone. This could suggest the cost of parking in the metered zone is too high. A reduction in the cost of metered parking could increase occupancy rates in the metered zone and decrease demand in the free zone.

The high occupancy rate of parking in the free zone is also a contributing factor to the perception by many businesses and downtown visitors that there is not enough parking available downtown. The occupancy rates show that the issue is the limited availability of parking, not a lack of supply.

3. Downtown has seen significant growth in recent years, and will continue to do so.

Over the past few years, there has been a renaissance in downtown Eugene. Several projects that have been a part of this trend include the redevelopment of the Broadway Commerce Center, the new Lane Community College Downtown Campus, the Inn at the 5th, and the new Woolworth Building. A number of other redevelopment projects are also in progress or planned that can have significant impacts on downtown. This includes:

- The redevelopment of the old First National Bank Building (Buri McDonald 2013),
- The new 375-unit 13th & Olive Apartments, commonly referred to as Capstone (Russo 2013a),

- Plans for an expansion of the Shedd Institute onto an existing city surface parking lot (Russo 2013b),
- Plans for a new mixed-use development at 6th Avenue and Oak Street (Wihtol 2013),
- And the ongoing work of the EWEB Riverfront Master Plan.

These developments are bringing more residents, businesses and activity downtown. With this development comes the need to address parking issues. While the goal of the free 2-hour parking program was to encourage more people to come downtown, the projected growth of downtown over the next few years may require the program's intention (and even its existence) to be reevaluated.

4. Different pricing levels for parking around downtown is confusing to drivers.

Depending on where someone parks downtown, the price for parking can change considerably. On-street metered parking and most city garages in downtown costs \$1 per hour, the Hult Center garage costs \$0.75 per hour, the first hour is free in the Overpark and Parcade garages, the maximum daily charge in most garages is \$6, and on Saturdays metered parking is enforced while garages are free. The cost of monthly parking ranges between \$40 and \$57 per month for city garages and lots. Diamond Parking lots in the study area charge between \$45 and \$105 per month, with a couple of lots northwest of downtown charging \$25 per month. This variety of price levels confuses drivers, and can make parking downtown complicated for some. (City of Eugene 2013b; Diamond Parking 2013)

Recommendations

The following recommendations are provided as suggestions to the City of Eugene to improve parking downtown and to ensure the business community benefits from visiting customers.

Recommendation 1: Continue to evaluate the conditions of downtown parking.

Parking demand management is not an exact science. Conditions always change and it is important to know how new conditions and policies impact the demand or supply of downtown parking. Therefore, I encourage the City to periodically conduct additional surveys and parking counts to understand how perceptions and situations change over time. The City should also consider monitoring a wider area of downtown (between the railroad tracks and 13th Avenue), and to conduct monitoring during evenings and overnight (especially as more housing is built downtown).

Recommendation 2: Create performance measures for the downtown parking program.

When the Eugene City Council voted in August 2010 to remove meters from the free 2-hour zone, the intention was to support downtown businesses and attract people to downtown Eugene. This broad goal did not establish metrics to evaluate the impacts of the program to determine its level of success. The City should develop performance measures to more directly track the impacts of downtown's parking policies.

Recommendation 3: Establish a sunset provision for the termination of the free 2-hour zone.

I suggest the City Council create a sunset provision that terminates the free parking when the performance measures indicate the program has achieved its intended impacts. If the program is successful, or if there is no longer a need for free parking to meet the original goals, the free program should be discontinued and paid parking returned to the streets.

The City should also consider reintroducing metered parking in certain areas of the free zone where the performance measures indicate higher parking occupancies and demand. For example, the new 13th &

Olive Apartments (Capstone) could increase parking demand on 11th Avenue, and on Olive and Willamette Streets south of 10th Avenue. The increased demand for parking could make it worth considering whether to reintroduce metered parking in this area while continuing the free zone elsewhere.

Recommendation 4: Educate downtown employees about alternative options to on-street parking.

As the business community is concerned about employees abusing the supply of free parking downtown, the City should conduct an education campaign to encourage employees to park their vehicles in garages, or use other transportation options. Since the availability of on-street parking spaces has direct impacts on the sales revenue of a business, it is counter-productive to allow employees to park on the street throughout an entire day. Additionally, employees should be encouraged to walk, bike or take transit to downtown Eugene to decrease demand of parking spaces.

Recommendation 5: Implement variable pricing of parking meters by hour and location.

I am recommending the City of Eugene charge different parking rates based on the location, day and hour to achieve an optimal occupancy rate of 85 percent. The City Council should not look at metered parking as a revenue source. Instead, metered parking should be seen as a way to add vitality to downtown Eugene. Metered parking should be used to ensure turnover and manage parking demand. By using variable pricing, the City can achieve the desired 85 percent occupancy rate. At this level, parking is well utilized but not full enough to make it difficult for drivers to find open spaces. Currently, some streets in downtown Eugene are almost always full, while others rarely see occupancy rates exceed 10 percent. Changing the pricing for parking on each block face to achieve similar levels of parking occupancy ensures efficient use of all curbside spaces in the downtown area. Additionally, as downtown continues to develop in the next few years and people begin to return downtown, parking meter rates will be able to manage that demand.

Recommendation 6: Use meter revenue locally.

Part of the revenue generated from parking meters goes to the city's general fund. I recommend the City reallocate this money (partially or in full) to fund local downtown services. For example, this money can be used to improve the streetscape with more planters, pay for more Downtown Guides to ensure public safety, improve façades and lighting, or to provide other downtown services. This investment in parking money can encourage downtown's efforts to remain attractive and support the business community. It is expected that the community would be opposed to reintroducing metered parking in the free zone. But if the business community and the public understood that the money for parking would be reinvested locally into downtown for public improvements, there may be less opposition.

Recommendation 7: Develop better pedestrian, bicycle and transit infrastructure.

Part of the solution to improving downtown's parking conditions is to decrease demand. By encouraging people to walk, bike or take transit to downtown Eugene, the City is likely to decrease the high demand that already exists on its curbside spaces. This encouragement can be through infrastructure projects or more cost-efficient methods of education and outreach. Making it easier and safer for people to travel by public or active transportation into downtown Eugene can also attract other people who previously did not come downtown, creating wider benefits for downtown businesses.

Bicycle parking is one example. Lane Transit District's regional transportation options program, point2point Solutions, recently conducted a Regional Bike Parking Study and found high demand for bike parking in downtown Eugene. As part of their preliminary recommendations, bike corrals are recommended for much of the area currently served by the free 2-hour zone (Lane Transit District

2013). Bike corrals are bike racks located in the street and usually require removing parking spaces. By replacing one parking space with room for as few as ten bicycles, there would be less automobile parking availability, but more spaces for people to come downtown by bicycle, reducing the need for car parking spaces. Any loss in parking availability could be managed through the variable pricing discussed in Recommendation 5.

Areas for further study

The following are my recommendations on ways this study can be improved for future evaluations of downtown Eugene's parking program.

1. Add a location question in the business survey to identify the businesses within the free zone.

The business survey was administered to many businesses throughout downtown Eugene, without regard to the location within the free parking zone or not. In the survey, there was also no question that asked for businesses to indicate whether or not they are located in the free zone. Therefore, no survey responses were specifically representative of free zone businesses. By administering the survey to businesses only in the free zone, this study can begin to understand how the free zone has impacted those specific businesses and compare that to businesses outside the free zone. This information will identify whether or not the free zone has had its intended impacts of supporting patronage of businesses.

2. In addition to parking counts, study parking turnover rates.

Parking counts are a good way to understand parking occupancy and daily trends. But by itself, these figures don't show the full picture of parking demand in downtown Eugene. I recommend further studies look into turnover rates of parked cars. This data will help understand how long cars are actually parking. High turnover rates are a sign of healthy curbside parking.

3. Conduct an online survey of downtown visitors.

The intercept survey was a useful tool in understanding how drivers use and perceive parking conditions downtown. It was, however, a time-consuming process. I recommend future surveys of downtown visitors be conducted electronically. Postcards could be placed on the windshields of parked cars directing drivers to an online downtown parking survey. This would eliminate the need for people to walk around downtown, asking people to take the survey. It would also allow for a wider variety of people to provide their responses to the survey. When I conducted the survey, I completed it during afternoon hours, which is when I was available. Therefore, I did not speak with people who parked earlier in the day when conditions are different. By placing postcards on cars, there is a higher likelihood a wider range of people will be included.

4. Understand the entire supply of parking downtown.

While on-street parking spaces are one of the most important components of the downtown parking supply, all parking is interrelated. I suggest further studies be completed that can assess the entire supply and condition of downtown parking. This should include on-street spaces, parking lots, garages and private business parking.

5. Conduct multiple Saturday counts.

To ensure more accurate data of Saturday parking occupancy trends, data should be collected with the same rigor as weekday counts. Counting cars three different times for each hour will be effective in ensuring the data collected is representative of normal parking conditions. Additionally, I recommend

that counts be conducted in months when the Saturday Market is in effect as well as when it is not. The difference in parking occupancy and demand between the winter and summer months is important to understand parking trends.

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VI. Appendices

Appendix A: Business survey invitation

The following is a copy of the e-mail that was sent out to downtown businesses asking for their participation in the parking survey.

We are conducting a survey on the 2-hour free parking program in downtown. The survey takes two minutes to complete and your response would be appreciated.

Here is a link to the survey: [SurveyLink]

This link is uniquely tied to this survey and your email address. Please do not forward this message.

Thanks for your participation!

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.

Appendix B: Business survey

The following is a copy of the survey sent out to businesses.

1. In general, how available are on-street parking spaces in downtown? (Rarely available; Sometimes available; Always available)
2. Thinking about the Monday thru Friday work week, select the time(s) of day when you think it is busiest downtown. (Morning; Mid-day; Afternoon; Evening)
3. Now, select the time(s) of day during the weekend when you think it is busiest downtown. (Morning; Mid-day; Afternoon; Evening)

Tell us whether you agree or disagree with the following statements:

4. Neighboring businesses use more than their share of on-street parking. (Agree; Disagree; Not Sure)
5. Downtown employees use free on-street parking. (Agree; Disagree; Not Sure)
6. The 2-hour Free Parking Program has had negative effects on downtown. (Agree; Disagree; Not Sure)
7. The 2-hour Free Parking Program has had positive effects on downtown. (Agree; Disagree; Not Sure)
8. I support a free parking program in downtown. (Agree; Disagree; Not Sure)
9. I would be willing to pay some amount to maintain free on-street parking downtown. (Agree; Disagree; Not Sure)
10. Overall, how well is the current 2-hour free parking program working in the downtown core? (Working well; Working somewhat; Not working; Unsure)
11. If you feel the program is not working well, please explain why you feel that way.
12. What do you estimate is the average length of time your customer parks in the downtown on a typical visit? (Less than one hour; 1 – 2 hours; 2 – 4 hours; 4 – 6 hours; Not sure)
13. Where do your customers park most often? (Select all that apply) (On-street; Overpark Garage (10th & Oak); Arcade Garage (8th & Willamette); Other City garage or lot; Private off-street lot; Not sure)
14. How many patrons do you have on an average day? (0 – 5; 5 – 10; 10 – 20; 20 – 50; 50 – 100; More than 100).
15. How many employees work at your business? (0 – 5; 5 – 10; 10 – 20; 20 – 50; 50 – 100; More than 100)
16. Do you encourage your employees to use off-street parking? (i.e. city garages; private lots) (Yes; No)
17. Where do your employees park most often? (Select all that apply) (On-street, Reserved space; Overpark Garage (10th & Oak); Arcade Garage (8th & Willamette); Private off-street lot; Not sure; Other (please specify))

Please answer the following two questions:

18. Compared to two years ago, have you noticed a change in patron volume? (Decreased significantly; Decreased slightly; Stayed the same; Increased slightly; Increased significantly)
19. Compared to two years ago, have you notice a change in your sales revenue? (Decreased significantly; Decreased slightly; Stayed the same; Increased slightly; Increased significantly)
20. If revenue for your business went up, how much do you think the free parking program contributed to the revenue increase? (Not at all; A little bit; Some, A lot)
21. Which of the following best describes you? (Downtown business owner; Manager of a downtown business; Downtown property owner)
22. Select the category that best describes your business. (Retail; Real estate; Professional services; Arts, entertainment and recreation; Finance and insurance; Social services; Other (please specify))

Appendix C: Intercept survey

The following is a copy of the survey used to interview people parking downtown.

2013 Downtown Eugene Parking Survey

My name is Paul Leitman. I am a researcher with the Community Service Center at the University of Oregon and am studying parking conditions in downtown Eugene. Do you have a couple of minutes to answer a few questions about downtown parking? The City is conducting an evaluation of the downtown free parking program. This survey is a part of that analysis. The survey results will be presented to Downtown Eugene, Inc. and the City of Eugene, and incorporated into a Master's project.

Your participation in this survey is voluntary; you are free to not answer questions and conclude the survey at any time. Your refusal to participate will not affect your relationship with Downtown Eugene, Inc., the City of Eugene or the University of Oregon. If you have any questions about this research, please contact Robert Parker, Director University of Oregon Community Service Center at 541.346.3801.

Part I: Visiting Downtown

1. How often do you visit downtown?

- ☐ Every day ☐ Several days per week ☐ Once a week ☐ Several times a month
☐ Once a month or less often

2. What day(s) do you usually visit downtown? Select all that apply.

- ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday

3. What times do you usually visit downtown? Select all that apply.

- ☐ Before 7 AM ☐ 7 AM – 10 AM ☐ 10 AM – 2 PM ☐ 2 PM – 6 PM ☐ After 6 PM

4. How long do you usually stay downtown?

- ☐ Less than one hour ☐ 1-2 hours ☐ 2-4 hours ☐ 4-6 hours ☐ More than 6 hours

5. Why do you usually come downtown? Select all that apply.

- ☐ Work ☐ Shopping ☐ Eating ☐ Other _____

6. Do you ever use other modes to come downtown?

☐ No

☐ Yes **Which ones? Select all that apply?**

- ☐ Walk ☐ Bicycle ☐ Transit ☐ Other _____

Part II: Parking

7. Is this where you usually park when you come downtown?

☐ Yes

☐ No **Where do you usually park?** _____

8. What types of parking do you usually use? Select all that apply.

- ☐ On-street parking ☐ City garage/lot ☐ Private off-street/business parking

9. How long do you usually occupy the space?

- ☐ Less than one hour ☐ 1-2 hours ☐ 2-4 hours ☐ 4-6 hours ☐ More than 6 hours

10. How often do you find on-street parking where you want it?

- ☐ Always ☐ Sometimes ☐ Rarely

11. What impact do you perceive free parking to have on downtown?

- ☐ Positive ☐ Negative ☐ Not sure/Don't know

12. If you had to pay for downtown parking, would you come downtown less often?

- ☐ Yes ☐ No

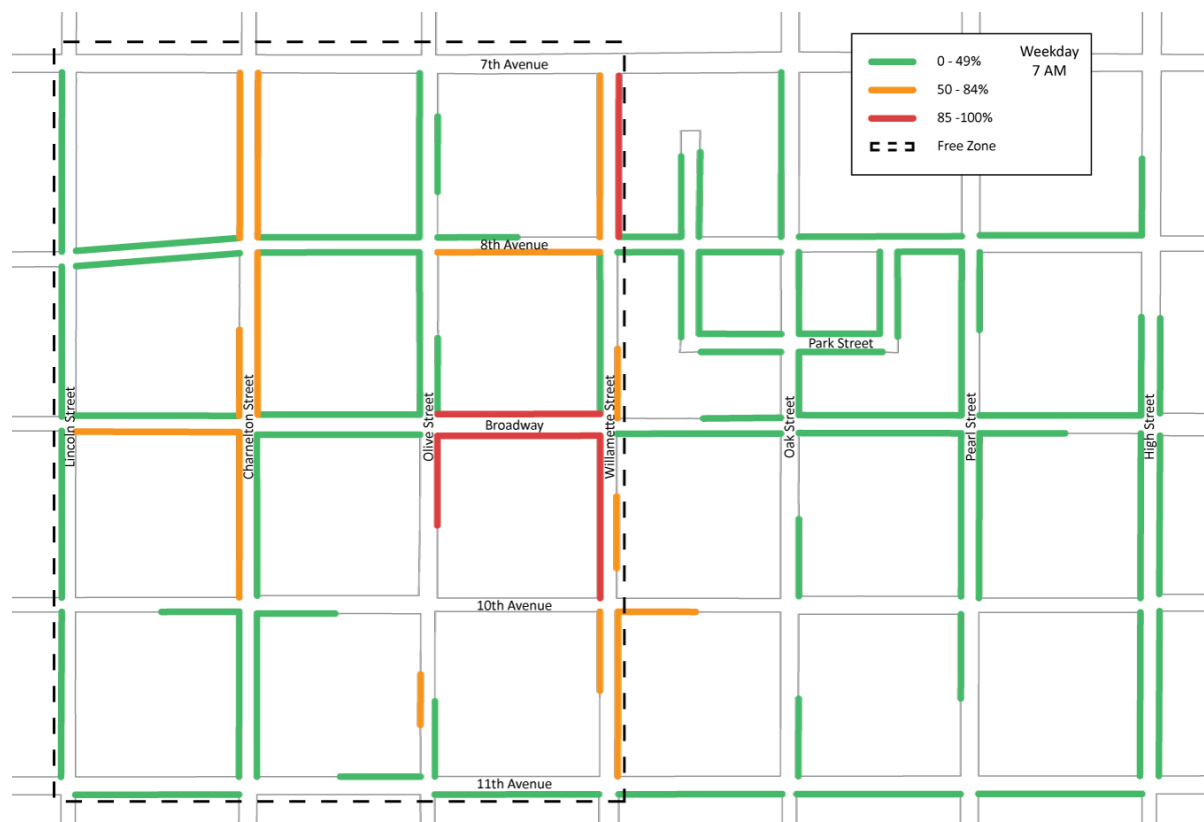
13. Do you have any comments about downtown parking?

Appendix D: Weekday parking count data

The following are the data sets I collected during my weekday parking counts. The data is organized by hour of the day. Highlighted cells indicate occupancies at or above 85 percent. The map that follows each table shows the percent of spaces on each block face that are occupied.

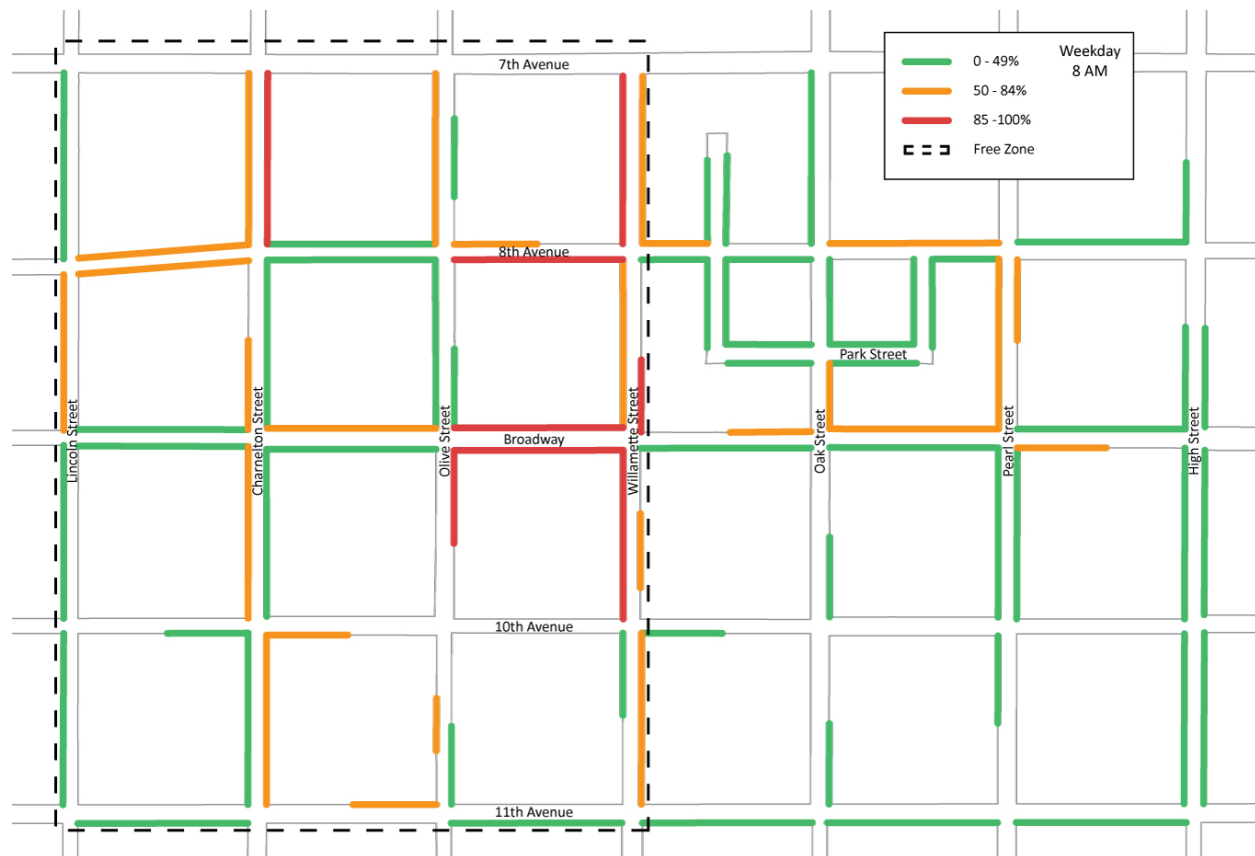
Weekday 7 AM (April 2, 3 and 4)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	20	23	12	18.33	39%
East 8th Avenue	33	2	4	3	3.00	9%
West Broadway	45	19	19	22	20.00	44%
East Broadway	32	8	5	4	5.67	18%
West 10th Avenue	10	1	2	3	2.00	20%
East 10th Avenue	2	2	2	1	1.67	83%
West 11th Avenue	23	5	3	6	4.67	20%
East 11th Avenue	34	4	3	4	3.67	11%
Lincoln Street	33	11	9	7	9.00	27%
Charnelton Street	67	40	43	31	38.00	57%
Olive Street	26	5	9	6	6.67	26%
Willamette Street	36	25	32	22	26.33	73%
Oak Street	26	0	0	2	0.67	3%
Pearl Street	31	0	6	6	4.00	13%
High Street	46	2	0	1	1.00	2%
Park Street	70	5	12	11	9.33	13%



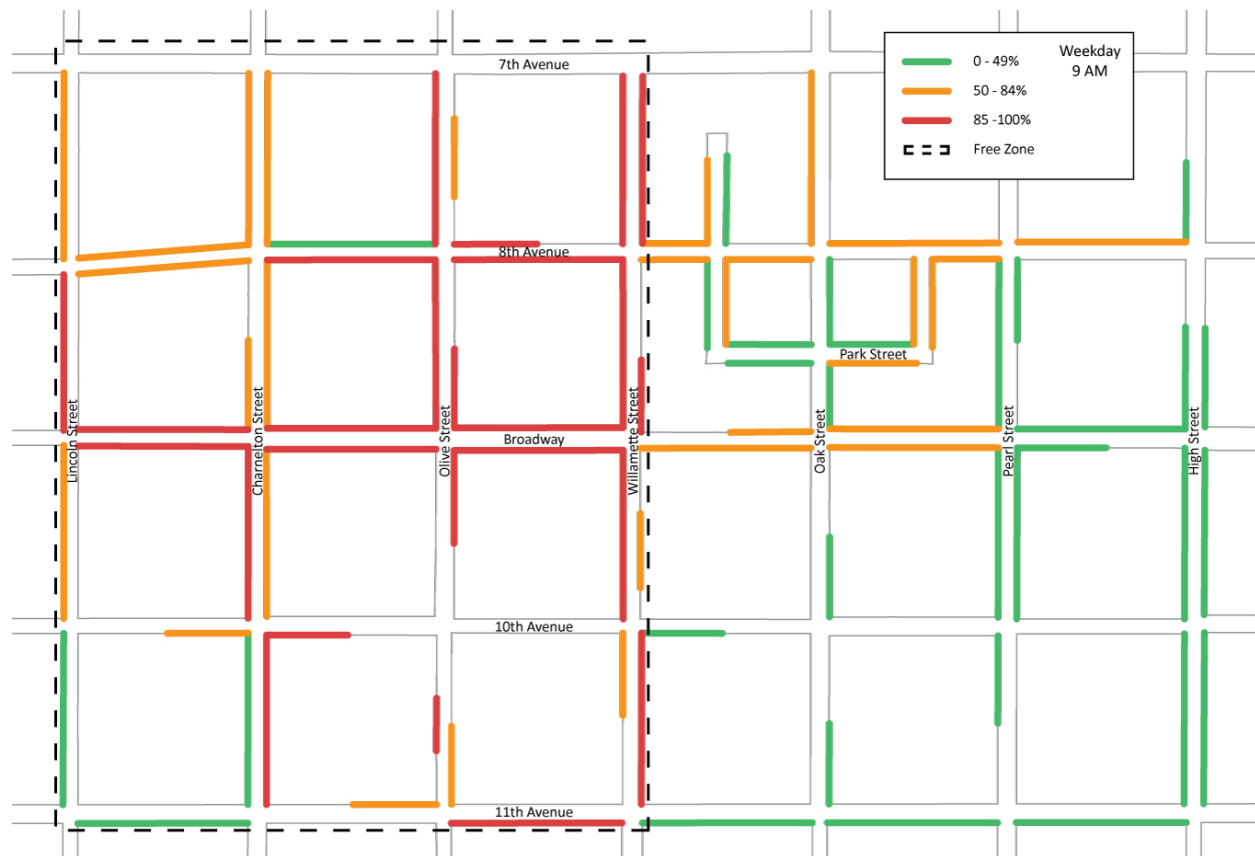
Weekday 8 AM (April 2, 3 and 4)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	19	23	33	25.00	53%
East 8th Avenue	33	13	10	11	11.33	34%
West Broadway	45	23	25	31	26.33	59%
East Broadway	32	12	10	14	12.00	38%
West 10th Avenue	10	1	3	5	3.00	30%
East 10th Avenue	2	0	0	0	0.00	0%
West 11th Avenue	23	10	7	6	7.67	33%
East 11th Avenue	34	4	3	2	3.00	9%
Lincoln Street	33	15	14	9	12.33	37%
Charnelton Street	67	29	34	41	34.67	52%
Olive Street	26	8	21	12	13.67	53%
Willamette Street	36	26	25	27	26.00	72%
Oak Street	26	13	7	4	8.00	31%
Pearl Street	31	9	15	12	12.00	39%
High Street	46	1	3	0	1.33	3%
Park Street	70	16	18	17	17.00	24%



Weekday 9 AM (April 3, 5 and 10)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	30	37	35	34.00	72%
East 8th Avenue	33	21	26	26	24.33	74%
West Broadway	45	43	42	46	43.67	97%
East Broadway	32	16	20	15	17.00	53%
West 10th Avenue	10	6	6	8	6.67	67%
East 10th Avenue	2	0	1	1	0.67	33%
West 11th Avenue	23	15	11	13	13.00	57%
East 11th Avenue	34	5	4	1	3.33	10%
Lincoln Street	33	17	16	20	17.67	54%
Charnelton Street	67	46	51	50	49.00	73%
Olive Street	26	23	23	20	22.00	85%
Willamette Street	36	32	35	33	33.33	93%
Oak Street	26	8	9	12	9.67	37%
Pearl Street	31	11	8	11	10.00	32%
High Street	46	2	1	0	1.00	2%
Park Street	70	41	34	29	34.67	50%



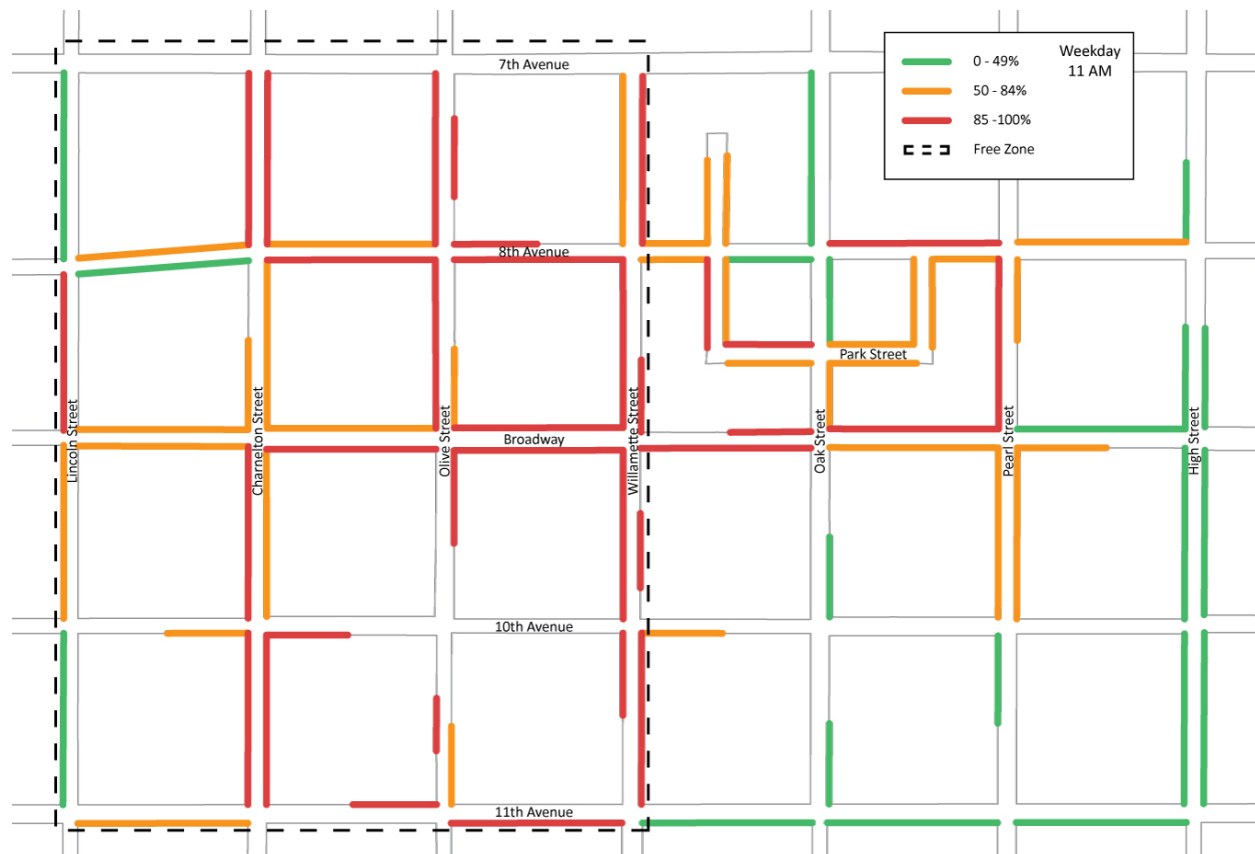
Weekday 10 AM (April 1, 5 and 8)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	27	40	34	33.67	72%
East 8th Avenue	33	20	27	23	23.33	71%
West Broadway	45	40	41	37	39.33	87%
East Broadway	32	14	19	24	19.00	59%
West 10th Avenue	10	8	9	10	9.00	90%
East 10th Avenue	2	1	2	1	1.33	67%
West 11th Avenue	23	17	17	15	16.33	71%
East 11th Avenue	34	8	4	4	5.33	16%
Lincoln Street	33	15	24	19	19.33	59%
Charnelton Street	67	56	63	61	60.00	90%
Olive Street	26	24	24	15	21.00	81%
Willamette Street	36	32	36	34	34.00	94%
Oak Street	26	14	13	12	13.00	50%
Pearl Street	31	14	19	22	18.33	59%
High Street	46	2	5	4	3.67	8%
Park Street	70	44	48	44	45.33	65%



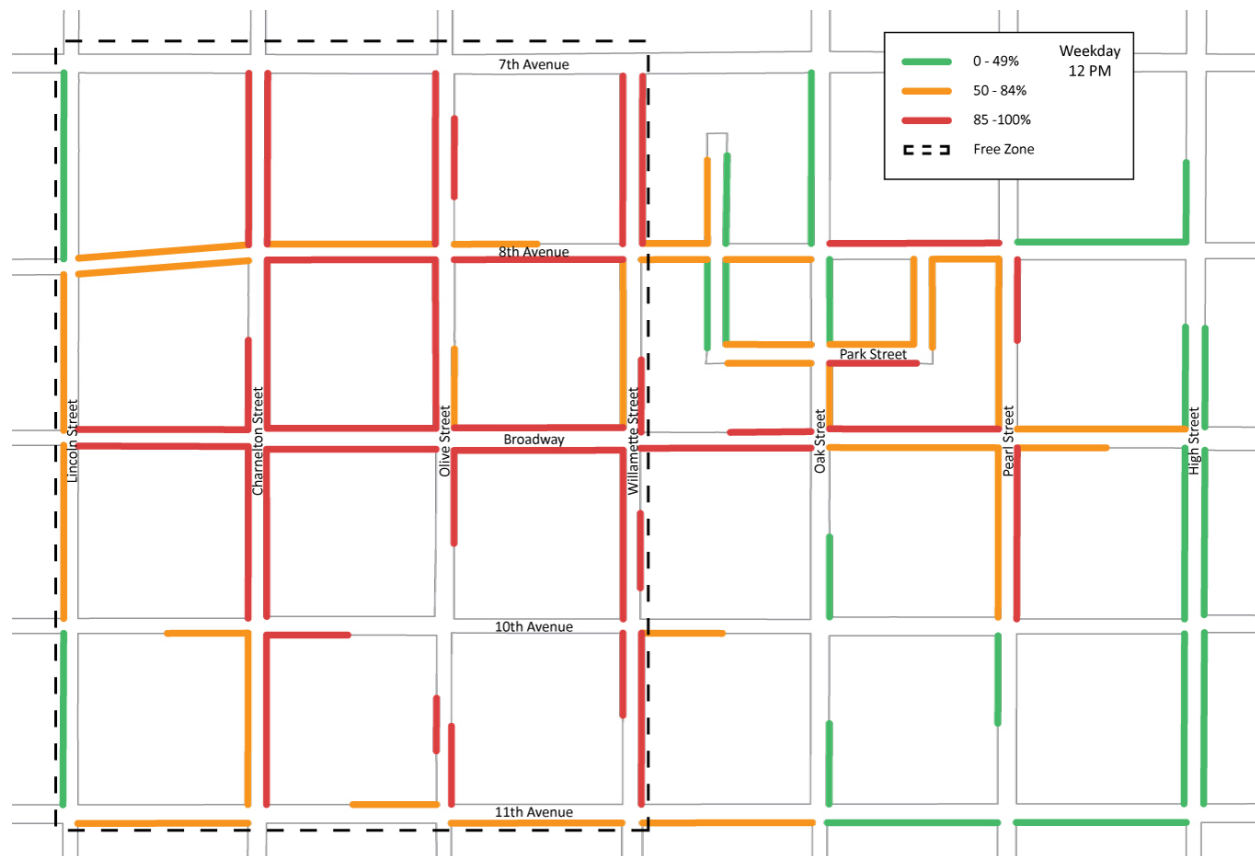
Weekday 11 AM (April 1, 5 and 8)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	31	40	38	36.33	77%
East 8th Avenue	33	25	23	19	22.33	68%
West Broadway	45	38	41	36	38.33	85%
East Broadway	32	20	24	26	23.33	73%
West 10th Avenue	10	10	8	9	9.00	90%
East 10th Avenue	2	2	0	1	1.00	50%
West 11th Avenue	23	19	14	18	17.00	74%
East 11th Avenue	34	13	6	8	9.00	26%
Lincoln Street	33	16	16	20	17.33	53%
Charnelton Street	67	57	63	51	57.00	85%
Olive Street	26	24	26	22	24.00	92%
Willamette Street	36	34	34	33	33.67	94%
Oak Street	26	11	6	12	9.67	37%
Pearl Street	31	15	22	19	18.67	60%
High Street	46	3	3	3	3.00	7%
Park Street	70	48	50	52	50.00	71%



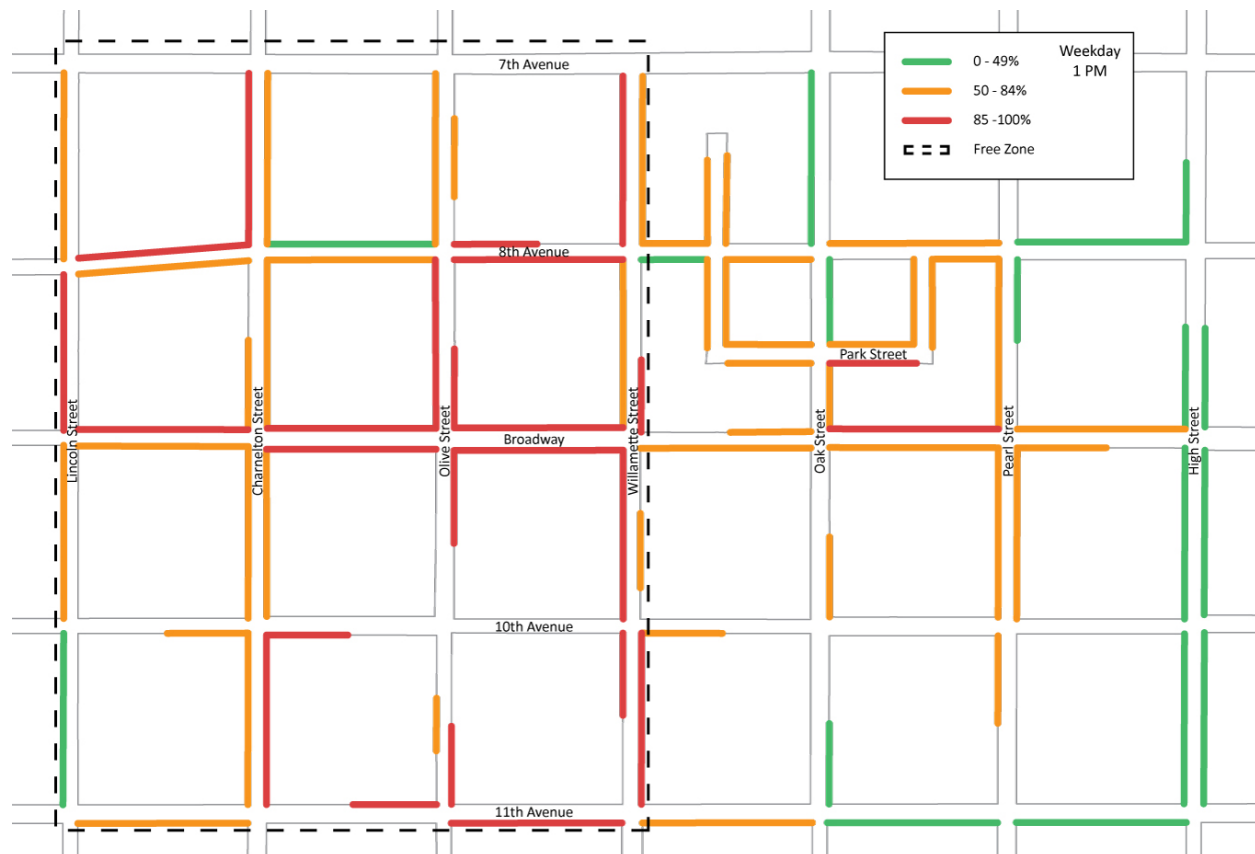
Weekday 12 PM (April 1, 8 and 10)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	30	39	44	37.67	80%
East 8th Avenue	33	23	20	24	22.33	68%
West Broadway	45	40	43	41	41.33	92%
East Broadway	32	25	25	24	24.67	77%
West 10th Avenue	10	8	9	8	8.33	83%
East 10th Avenue	2	2	0	2	1.33	67%
West 11th Avenue	23	13	16	18	15.67	68%
East 11th Avenue	34	13	7	14	11.33	33%
Lincoln Street	33	18	17	17	17.33	53%
Charnelton Street	67	58	60	58	58.67	88%
Olive Street	26	26	22	23	23.67	91%
Willamette Street	36	34	35	33	34.00	94%
Oak Street	26	11	10	9	10.00	38%
Pearl Street	31	20	23	24	22.33	72%
High Street	46	2	5	4	3.67	8%
Park Street	70	43	48	49	46.67	67%



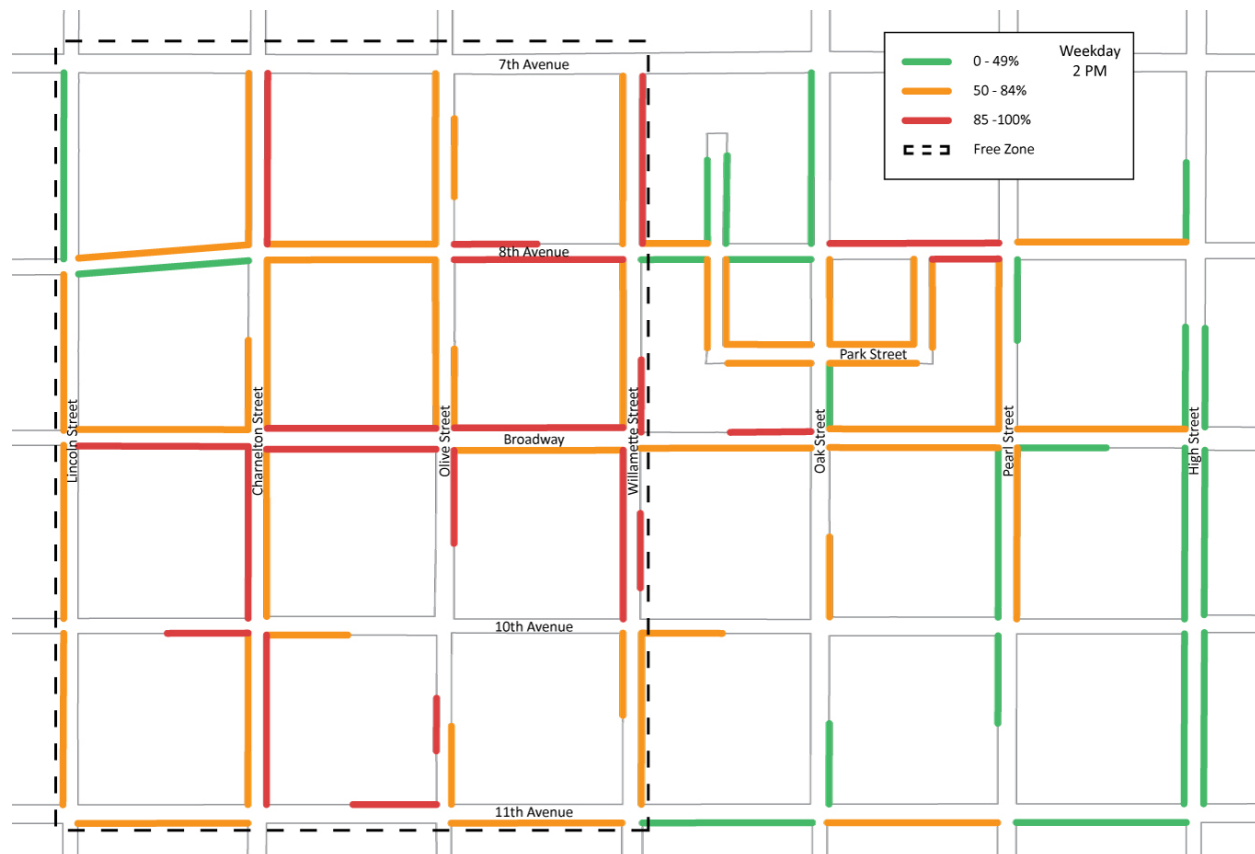
Weekday 1 PM (April 3, 9 and 10)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	35	38	33	35.33	75%
East 8th Avenue	33	17	19	17	17.67	54%
West Broadway	45	44	36	44	41.33	92%
East Broadway	32	26	24	19	23.00	72%
West 10th Avenue	10	8	8	9	8.33	83%
East 10th Avenue	2	1	2	0	1.00	50%
West 11th Avenue	23	16	20	22	19.33	84%
East 11th Avenue	34	19	10	14	14.33	42%
Lincoln Street	33	23	17	23	21.00	64%
Charnelton Street	67	54	54	56	54.67	82%
Olive Street	26	24	22	22	22.67	87%
Willamette Street	36	33	34	30	32.33	90%
Oak Street	26	9	10	14	11.00	42%
Pearl Street	31	21	18	23	20.67	67%
High Street	46	7	5	3	5.00	11%
Park Street	70	42	52	47	47.00	67%



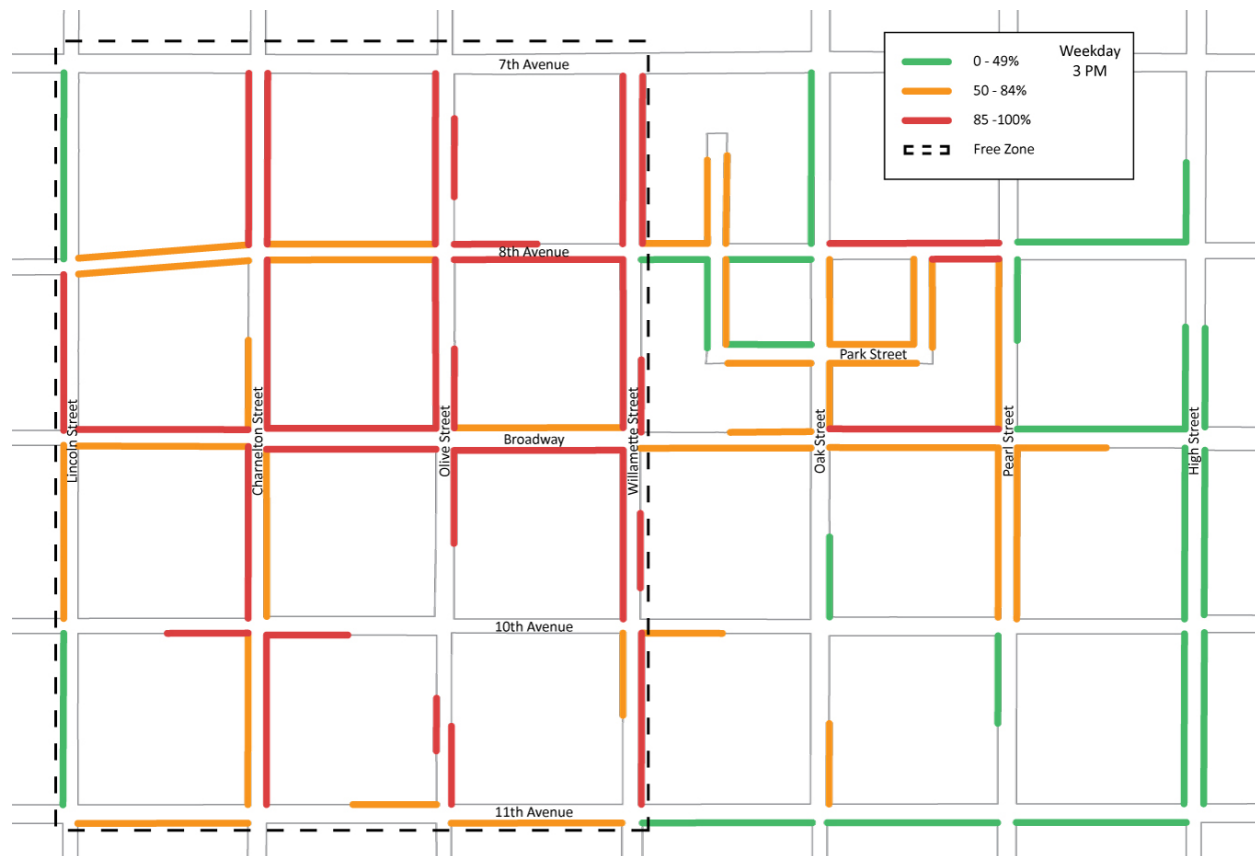
Weekday 2 PM (April 3, 9 and 10)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	26	34	37	32.33	69%
East 8th Avenue	33	22	22	17	20.33	62%
West Broadway	45	38	40	41	39.67	88%
East Broadway	32	20	21	26	22.33	70%
West 10th Avenue	10	7	9	9	8.33	83%
East 10th Avenue	2	1	1	1	1.00	50%
West 11th Avenue	23	19	14	13	15.33	67%
East 11th Avenue	34	18	10	17	15.00	44%
Lincoln Street	33	22	18	19	19.67	60%
Charnelton Street	67	57	47	56	53.33	80%
Olive Street	26	23	18	21	20.67	79%
Willamette Street	36	28	29	33	30.00	83%
Oak Street	26	10	13	11	11.33	44%
Pearl Street	31	17	12	14	14.33	46%
High Street	46	2	0	7	3.00	7%
Park Street	70	35	45	49	43.00	61%



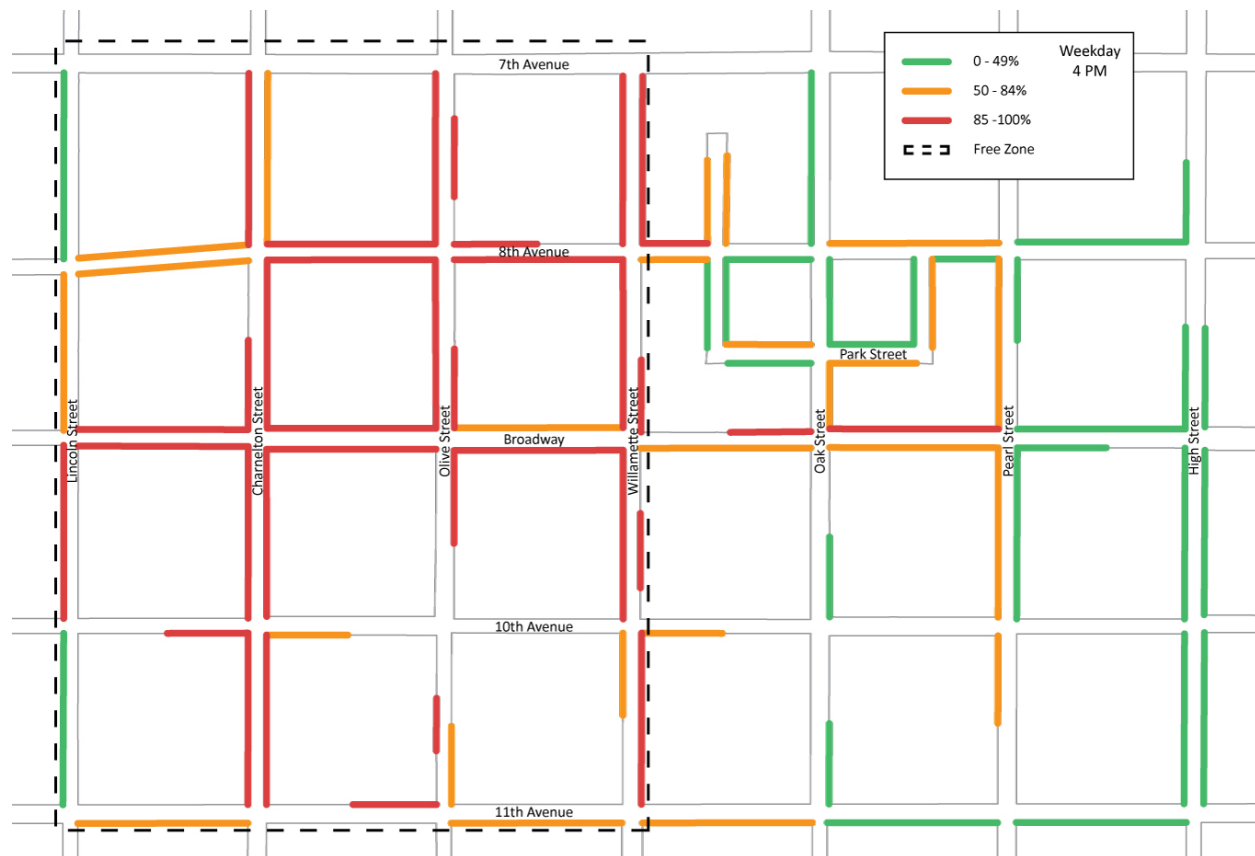
Weekday 3 PM (April 1, 3 and 9)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	28	43	27	32.67	70%
East 8th Avenue	33	19	20	18	19.00	58%
West Broadway	45	38	43	43	41.33	92%
East Broadway	32	19	20	21	20.00	63%
West 10th Avenue	10	9	9	10	9.33	93%
East 10th Avenue	2	0	1	2	1.00	50%
West 11th Avenue	23	20	12	18	16.67	72%
East 11th Avenue	34	10	12	10	10.67	31%
Lincoln Street	33	11	20	17	16.00	48%
Charnelton Street	67	58	60	61	59.67	89%
Olive Street	26	24	25	24	24.33	94%
Willamette Street	36	31	34	36	33.67	94%
Oak Street	26	13	18	9	13.33	51%
Pearl Street	31	11	21	16	16.00	52%
High Street	46	2	4	5	3.67	8%
Park Street	70	33	41	34	36.00	51%



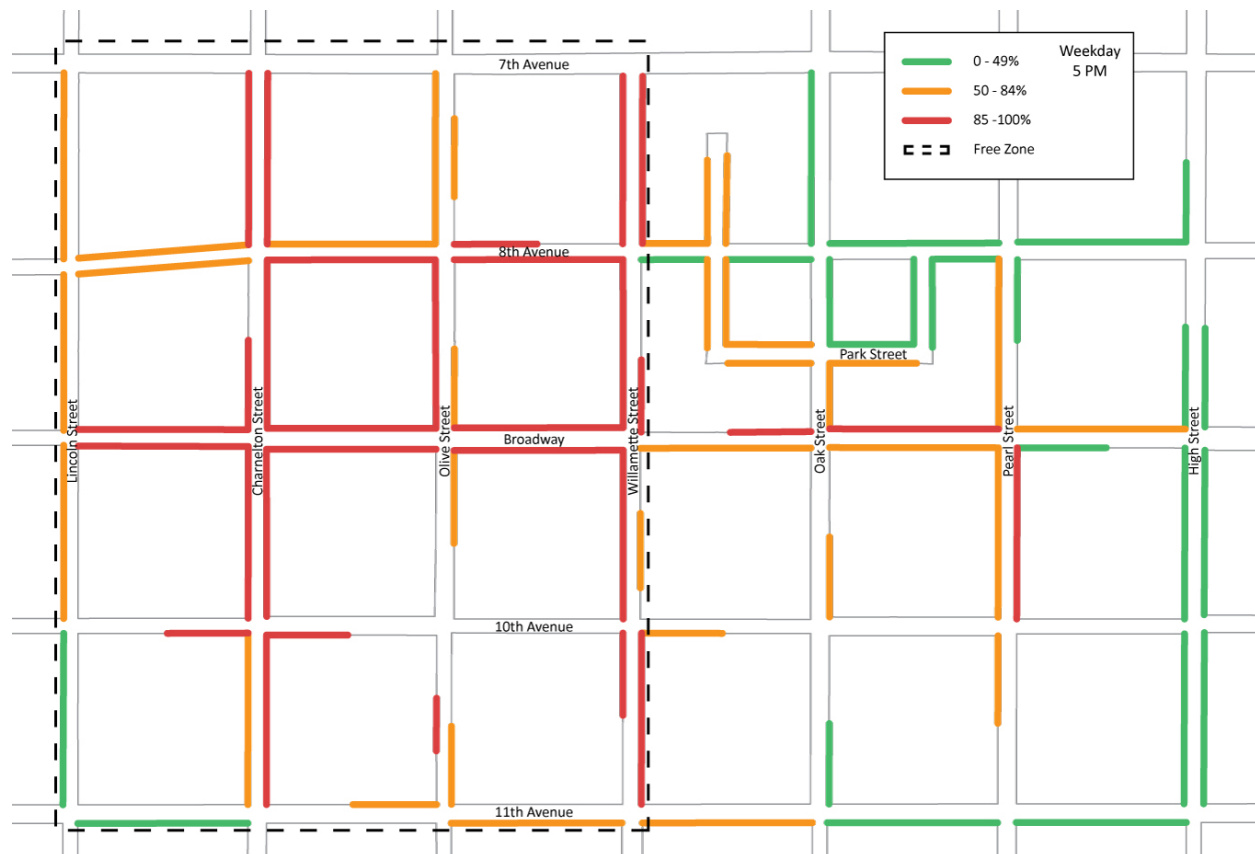
Weekday 4 PM (April 1, 2 and 4)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	43	41	44	42.67	91%
East 8th Avenue	33	20	13	17	16.67	51%
West Broadway	45	41	44	45	43.33	96%
East Broadway	32	15	22	23	20.00	63%
West 10th Avenue	10	10	8	8	8.67	87%
East 10th Avenue	2	1	1	1	1.00	50%
West 11th Avenue	23	18	19	14	17.00	74%
East 11th Avenue	34	14	11	15	13.33	39%
Lincoln Street	33	17	21	17	18.33	56%
Charnelton Street	67	62	60	64	62.00	93%
Olive Street	26	24	25	25	24.67	95%
Willamette Street	36	34	35	36	35.00	97%
Oak Street	26	8	10	10	9.33	36%
Pearl Street	31	12	16	15	14.33	46%
High Street	46	5	3	2	3.33	7%
Park Street	70	28	39	42	36.33	52%



Weekday 5 PM (April 2, 4 and 8)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	34	44	38	38.67	82%
East 8th Avenue	33	8	8	7	7.67	23%
West Broadway	45	45	45	41	43.67	97%
East Broadway	32	25	26	18	23.00	72%
West 10th Avenue	10	9	10	9	9.33	93%
East 10th Avenue	2	2	1	2	1.67	83%
West 11th Avenue	23	12	12	14	12.67	55%
East 11th Avenue	34	17	11	8	12.00	35%
Lincoln Street	33	19	25	11	18.33	56%
Charnelton Street	67	63	66	61	63.33	95%
Olive Street	26	22	21	20	21.00	81%
Willamette Street	36	35	36	32	34.33	95%
Oak Street	26	9	14	6	9.67	37%
Pearl Street	31	25	27	16	22.67	73%
High Street	46	5	3	3	3.67	8%
Park Street	70	43	43	23	36.33	52%



Weekday 6 PM (April 2, 4 and 8)

Street	Capacity	Count 1	Count 2	Count 3	Average number of cars	Percent occupancy
West 8th Avenue	47	46	46	47	46.33	99%
East 8th Avenue	33	9	19	11	13.00	39%
West Broadway	45	42	45	43	43.33	96%
East Broadway	32	29	26	31	28.67	90%
West 10th Avenue	10	9	10	10	9.67	97%
East 10th Avenue	2	1	1	2	1.33	67%
West 11th Avenue	23	11	10	16	12.33	54%
East 11th Avenue	34	13	26	10	16.33	48%
Lincoln Street	33	26	28	21	25.00	76%
Charnelton Street	67	66	65	62	64.33	96%
Olive Street	26	26	26	26	26.00	100%
Willamette Street	36	33	34	35	34.00	94%
Oak Street	26	8	17	10	11.67	45%
Pearl Street	31	23	25	22	23.33	75%
High Street	46	9	10	6	8.33	18%
Park Street	70	48	65	20	44.33	63%

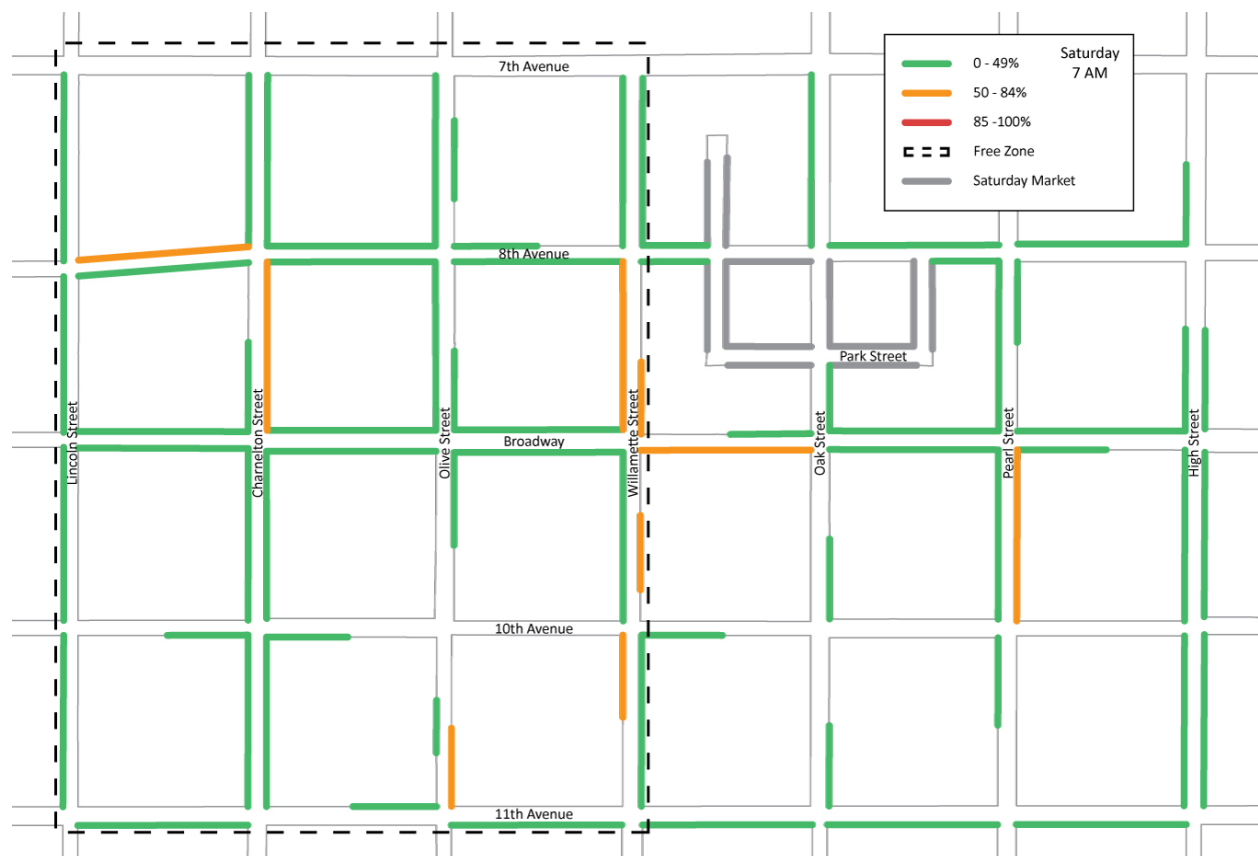


Appendix E: Saturday parking count data

The following are the data sets I collected during my Saturday parking counts. The data is organized by hour of the day. Highlighted cells indicate occupancies at or above 85 percent. The map that follows each table shows the percent of spaces on each block face that are occupied.

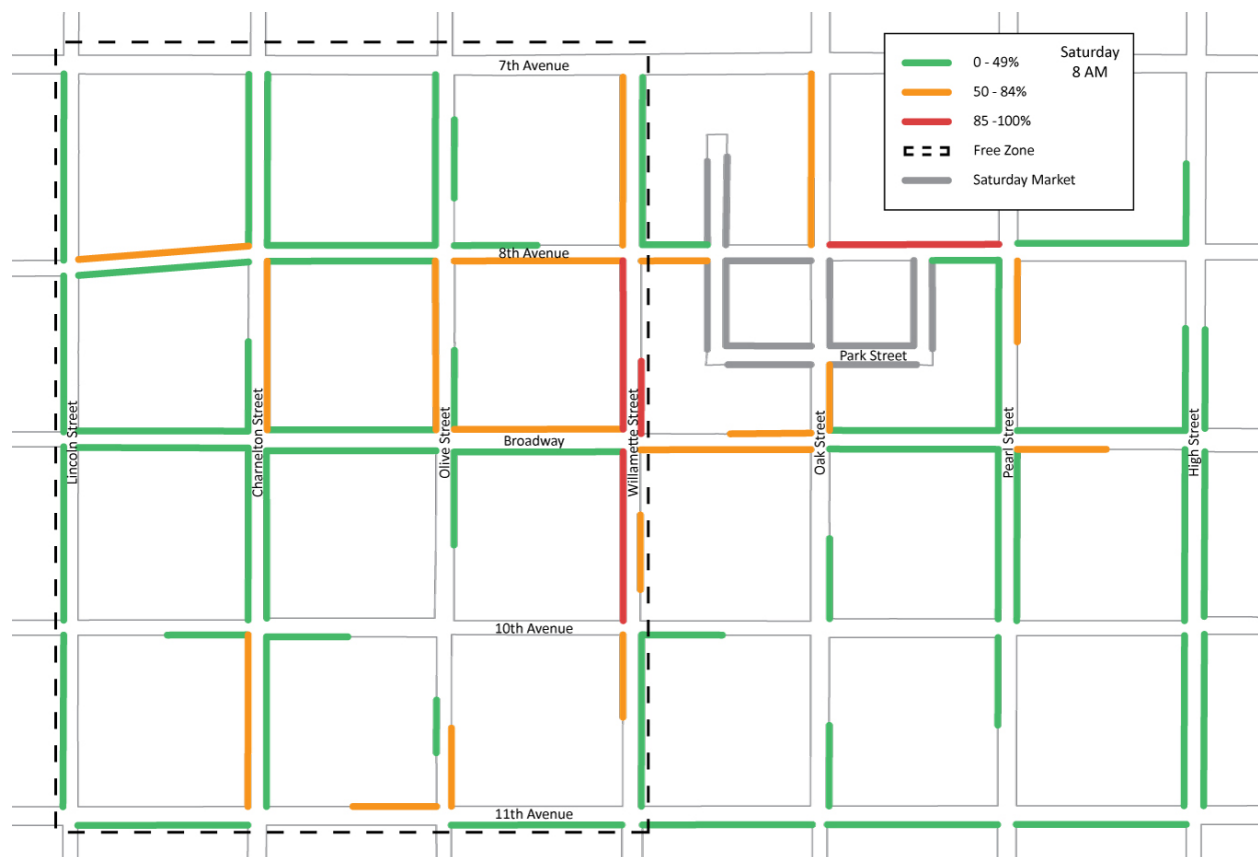
Saturday 7 AM (April 27)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	11	23%
East 8th Avenue	28	0	0%
West Broadway	45	6	13%
East Broadway	32	6	19%
West 10th Avenue	10	1	10%
East 10th Avenue	2	0	0%
West 11th Avenue	23	3	13%
East 11th Avenue	34	4	12%
Lincoln Street	33	5	15%
Charnelton Street	67	14	21%
Olive Street	26	2	8%
Willamette Street	36	11	31%
Oak Street	24	5	21%
Pearl Street	31	9	29%
High Street	46	0	0%



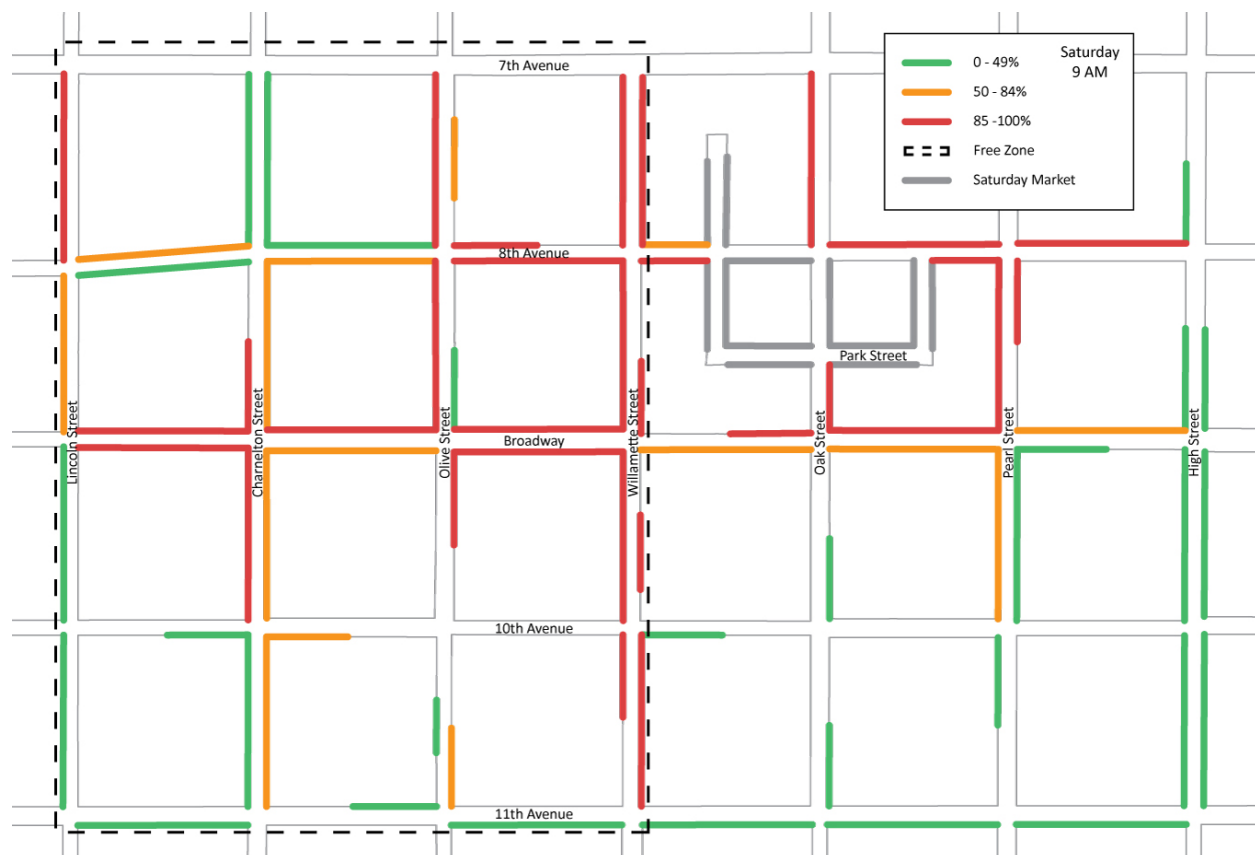
Saturday 8 AM (April 27)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	15	32%
East 8th Avenue	28	10	36%
West Broadway	45	13	29%
East Broadway	32	11	34%
West 10th Avenue	10	1	10%
East 10th Avenue	2	0	0%
West 11th Avenue	23	4	17%
East 11th Avenue	34	5	0%
Lincoln Street	33	3	9%
Charnelton Street	67	26	39%
Olive Street	26	4	15%
Willamette Street	36	19	53%
Oak Street	24	11	0%
Pearl Street	31	5	0%
High Street	46	0	0%



Saturday 9 AM (May 4)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	29	62%
East 8th Avenue	28	26	93%
West Broadway	45	38	84%
East Broadway	32	23	72%
West 10th Avenue	10	3	30%
East 10th Avenue	2	0	0%
West 11th Avenue	23	7	30%
East 11th Avenue	34	5	15%
Lincoln Street	33	19	58%
Charnelton Street	67	35	52%
Olive Street	26	18	69%
Willamette Street	36	36	100%
Oak Street	24	16	67%
Pearl Street	31	17	55%
High Street	46	3	7%



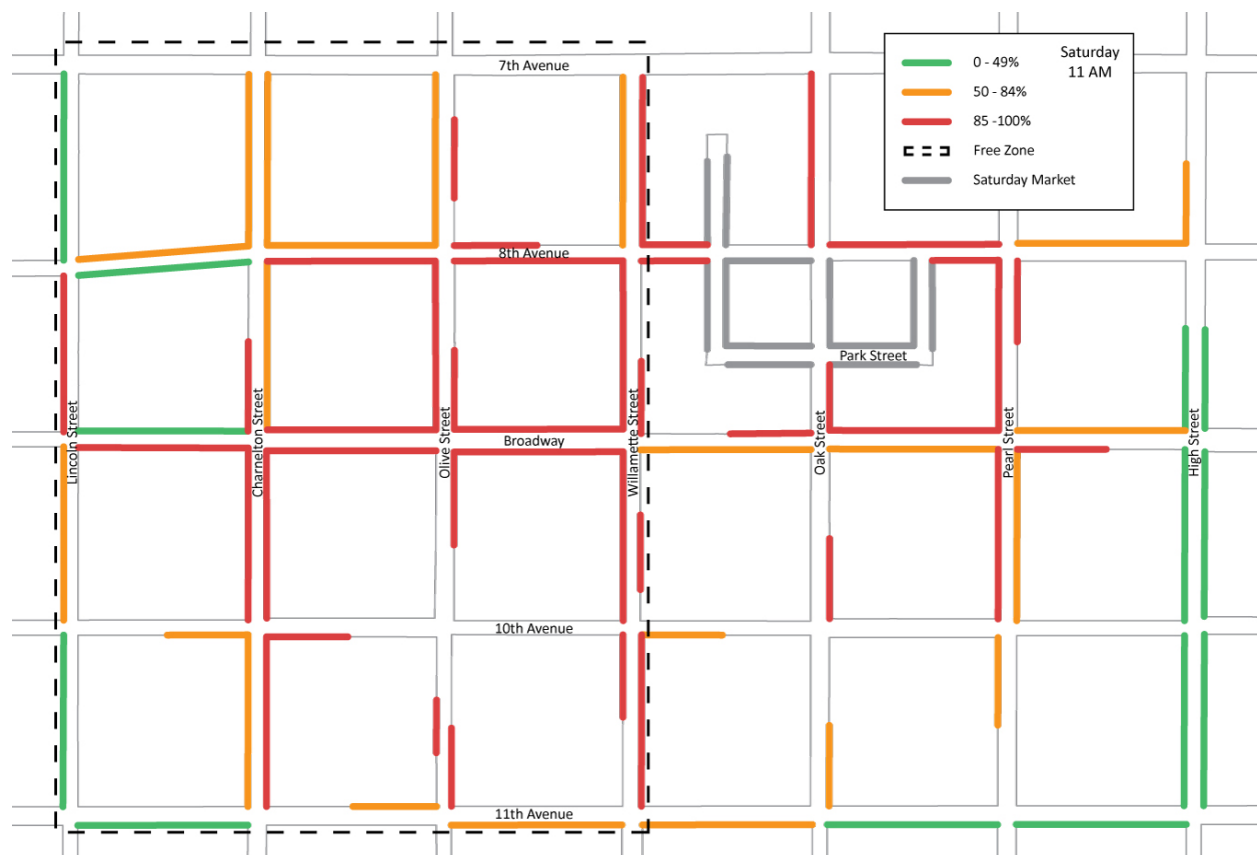
Saturday 10 AM (April 6)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	32	68%
East 8th Avenue	28	25	89%
West Broadway	45	39	87%
East Broadway	32	26	81%
West 10th Avenue	10	10	100%
East 10th Avenue	2	2	100%
West 11th Avenue	23	11	48%
East 11th Avenue	34	3	9%
Lincoln Street	33	12	36%
Charnelton Street	67	51	76%
Olive Street	26	20	77%
Willamette Street	36	36	100%
Oak Street	24	15	63%
Pearl Street	31	19	61%
High Street	46	3	7%



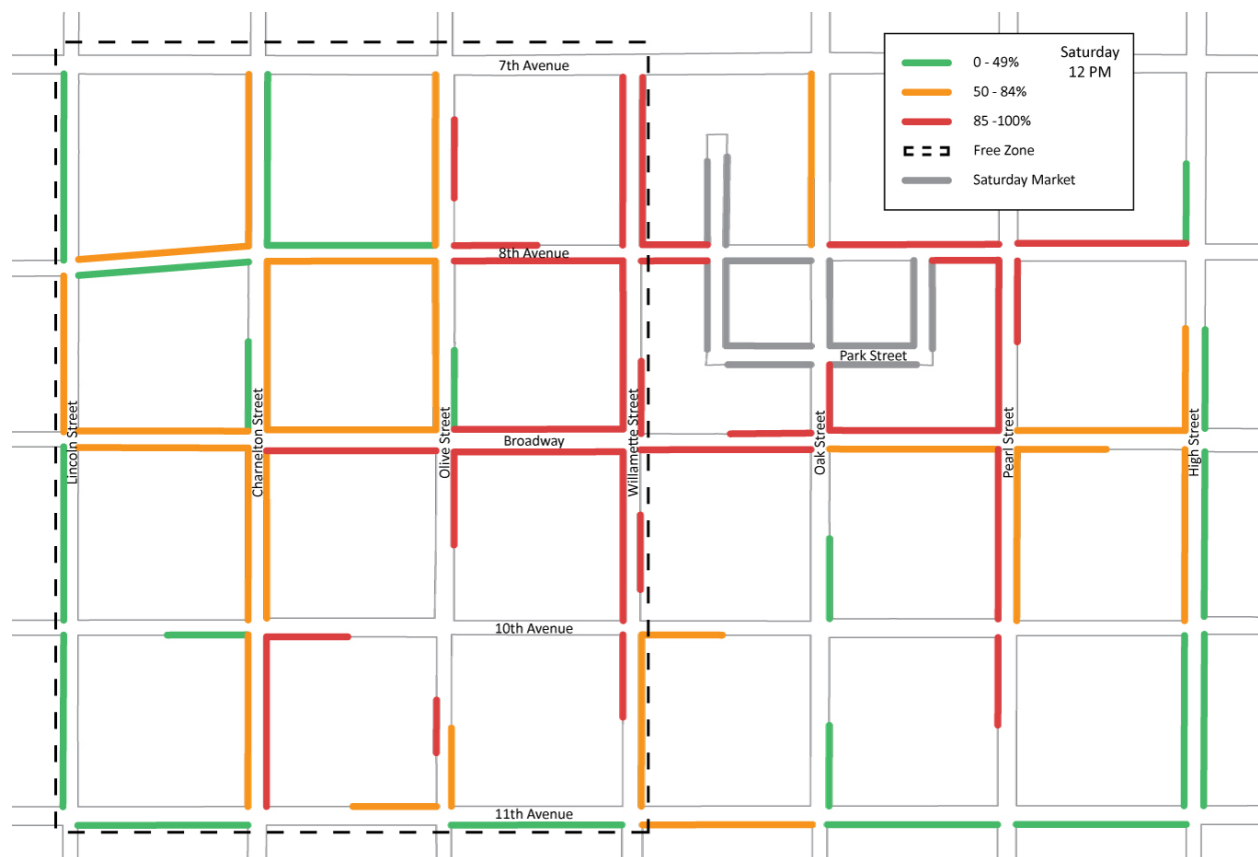
Saturday 11 AM (April 6)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	33	70%
East 8th Avenue	28	25	89%
West Broadway	45	37	82%
East Broadway	32	27	84%
West 10th Avenue	10	8	80%
East 10th Avenue	2	1	50%
West 11th Avenue	23	12	52%
East 11th Avenue	34	12	35%
Lincoln Street	33	14	42%
Charnelton Street	67	51	76%
Olive Street	26	24	92%
Willamette Street	36	35	97%
Oak Street	24	22	92%
Pearl Street	31	27	87%
High Street	46	6	13%



Saturday 12 PM (April 6)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	30	64%
East 8th Avenue	28	27	96%
West Broadway	45	37	82%
East Broadway	32	28	88%
West 10th Avenue	10	6	60%
East 10th Avenue	2	1	50%
West 11th Avenue	23	8	35%
East 11th Avenue	34	11	32%
Lincoln Street	33	9	27%
Charnelton Street	67	42	63%
Olive Street	26	20	77%
Willamette Street	36	34	94%
Oak Street	24	16	67%
Pearl Street	31	28	90%
High Street	46	14	30%



Saturday 1 PM (April 27)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	34	72%
East 8th Avenue	28	28	100%
West Broadway	45	38	84%
East Broadway	32	31	97%
West 10th Avenue	10	7	70%
East 10th Avenue	2	2	100%
West 11th Avenue	23	12	52%
East 11th Avenue	34	15	44%
Lincoln Street	33	12	36%
Charnelton Street	67	46	69%
Olive Street	26	22	85%
Willamette Street	36	35	97%
Oak Street	24	21	88%
Pearl Street	31	29	94%
High Street	46	13	28%



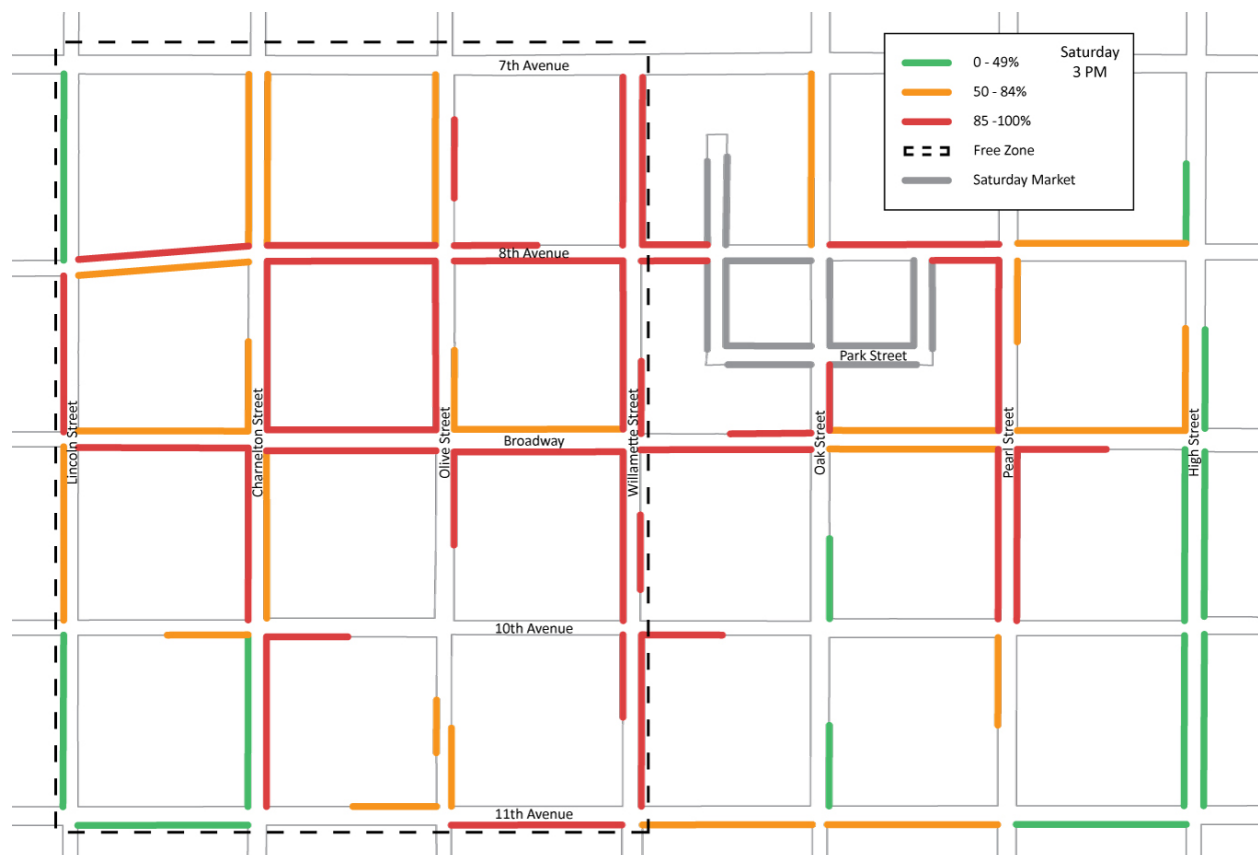
Saturday 2 PM (April 27)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	35	74%
East 8th Avenue	28	28	100%
West Broadway	45	41	91%
East Broadway	32	29	91%
West 10th Avenue	10	8	80%
East 10th Avenue	2	1	50%
West 11th Avenue	23	14	61%
East 11th Avenue	34	17	50%
Lincoln Street	33	16	48%
Charnelton Street	67	53	79%
Olive Street	26	25	96%
Willamette Street	36	32	89%
Oak Street	24	21	88%
Pearl Street	31	28	90%
High Street	46	9	20%



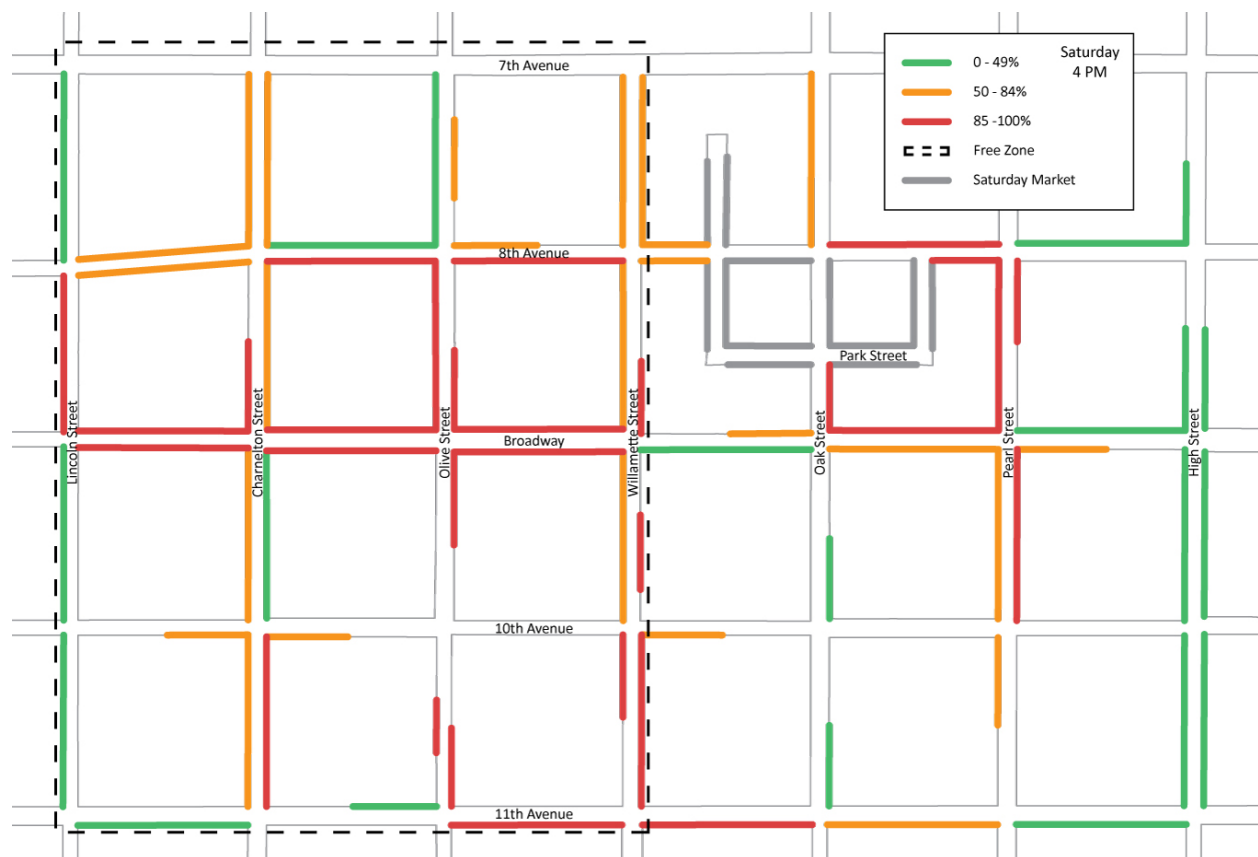
Saturday 3 PM (April 27)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	42	89%
East 8th Avenue	28	25	89%
West Broadway	45	39	87%
East Broadway	32	26	81%
West 10th Avenue	10	8	80%
East 10th Avenue	2	2	100%
West 11th Avenue	23	13	57%
East 11th Avenue	34	17	50%
Lincoln Street	33	17	52%
Charnelton Street	67	49	73%
Olive Street	26	21	81%
Willamette Street	36	36	100%
Oak Street	24	14	58%
Pearl Street	31	26	84%
High Street	46	9	20%



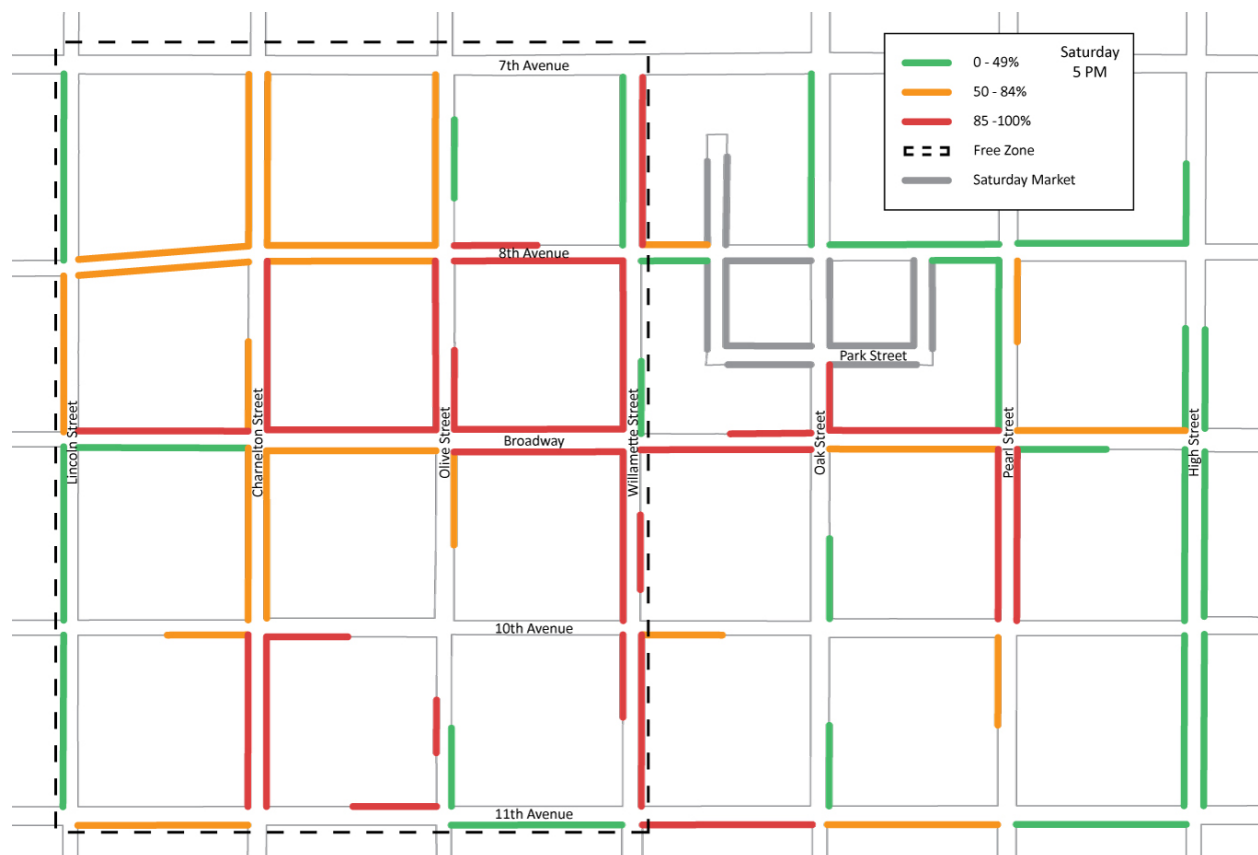
Saturday 4 PM (April 6)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	33	70%
East 8th Avenue	28	17	61%
West Broadway	45	42	93%
East Broadway	32	18	56%
West 10th Avenue	10	7	70%
East 10th Avenue	2	1	50%
West 11th Avenue	23	11	48%
East 11th Avenue	34	17	50%
Lincoln Street	33	14	42%
Charnelton Street	67	47	70%
Olive Street	26	21	81%
Willamette Street	36	29	81%
Oak Street	24	9	38%
Pearl Street	31	27	87%
High Street	46	1	2%



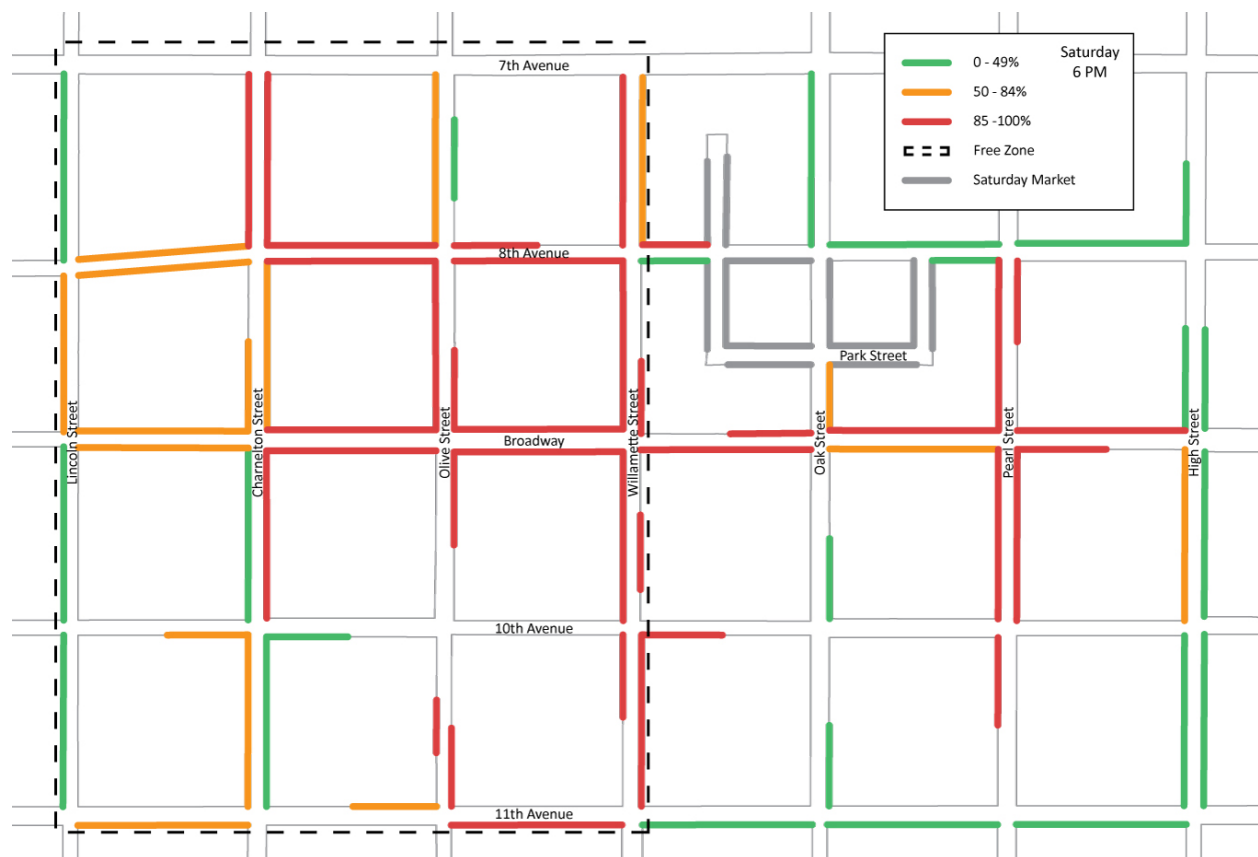
Saturday 5 PM (April 6)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	33	70%
East 8th Avenue	28	5	18%
West Broadway	45	32	71%
East Broadway	32	27	84%
West 10th Avenue	10	7	70%
East 10th Avenue	2	1	50%
West 11th Avenue	23	15	65%
East 11th Avenue	34	16	47%
Lincoln Street	33	12	36%
Charnelton Street	67	51	76%
Olive Street	26	20	77%
Willamette Street	36	28	78%
Oak Street	24	5	21%
Pearl Street	31	22	71%
High Street	46	3	7%



Saturday 6 PM (April 6)

Street	Capacity	Number of cars	Percent occupancy
West 8th Avenue	47	40	85%
East 8th Avenue	28	6	21%
West Broadway	45	40	89%
East Broadway	32	31	97%
West 10th Avenue	10	4	40%
East 10th Avenue	2	2	100%
West 11th Avenue	23	15	65%
East 11th Avenue	34	7	21%
Lincoln Street	33	8	24%
Charnelton Street	67	47	70%
Olive Street	26	22	85%
Willamette Street	36	32	89%
Oak Street	24	4	17%
Pearl Street	31	31	100%
High Street	46	5	11%



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