NW Parking SAC
Wednesday, January 17, 2018
4:00 p.m. – 5:30 p.m.

Friendly House
1737 NW 26th Ave.
Portland, OR 97210

Meeting Notes

Members in Attendance
Nick Fenster, Karen Karlsson, Rick Michaelson (Chair), Thomas Ranieri, Peter Rose, Don Singer, Brent Soffey, Ron Walters

PBOT Staff
Chris Armes, Scott Cohen, Briana Orr, Antonina Pattiz

Public in Attendance
Allan Classen, Jeanne Harrison, Michael Lilly, Walt McMonies

Welcome & Public Comment
Rick Michaelson calls the meeting to order at 4:00 pm and invites public comment.
No comments made.

Review Draft Data Collection Report
Rick explains that the committee will be reviewing the most current parking study data from Rick Williams' Consulting (RWC). He reminds the members that the decision to make changes to the permit program for next year would need to be made by the end of May, to ensure that there is enough time to inform the public.

Chris explains that, in anticipation of future adjustments to the permit program, PBOT staff has reserved additional meeting rooms at the Friendly House, to allow for two SAC meetings per month.

The additional SAC meetings will occur from 4:00 p.m. to 5:30 p.m. on the following days:
- Tuesday, March 6, 2018
- Tuesday, April 3, 2018
- Tuesday, May 1, 2018
- Tuesday, June 5, 2018

If the SAC chooses not to make any changes to the program, PBOT staff will cancel these reservations.

Owen presents a PowerPoint to explain the results of the most current data collection survey. He explains that the on-street study was completed in the same sample area as the 2016 study. He goes over the guiding principles of what the data is used for:

- Create an environment that supports greater use of underutilized off-street resources (shared parking).
- Encourage and create options for users to reduce reliance on vehicle access.
- Manage the permit program while recognizing continuing growth in the number of residents and employees.

- Continue to ensure access for visitors accessing district businesses through metered parking supply.
- Uses incentives and pricing to balance permit demand.
- Continues to use actual data of utilization in the district to support decision making.

Rick Michaelson mentions that one of the strategies missing is looking at the ability to create new supply.

Owen informs the members that 2,733 stalls were surveyed. Slide #4 shows a total stall count of 5,264 but that's the number from 2016 and needs to be updated. [1]

Nick asks if the overall stall count takes into account stalls currently occupied by construction.

Owen answers that 112 construction stalls are included in the overall count.

Owen goes over the stall counts in the sample area:

- 85% of stalls are 4-hours (signed, metered, metered or by permit)
- 5% of stalls are 2-hours
- 3% of stalls are 30-minutes
- 1% of stalls are 15-minutes
- 4% of stalls are used for construction
- 1% of stalls are no limit stalls (this has been remedied by the City)
- 4 ADA stalls

Karen asks where the 4 hour signed stalls are located.

Chris answers that she will pull that data and inform the members.

Owen breaks down the percentage of metered and signed stalls in the sample area:

- 69% of stalls are metered (1,892 stalls)
- 26% of stalls are signed (717 stalls)
- 4% of stalls are used for construction
- 1% of stalls are "no limit" (this has been remedied by the City)

Metered stalls:

- 28% of metered stalls are meter only (21st and 23rd)
- 72% of metered stalls are metered "or my permit" (OBP)

Signed stalls:

- 31% of signed stalls are signed only (visitors can park for 4 hours without payment)
- 69% are signed OBP (permit holders can park/ visitors can park for 4 hours without payment)

Rick Williams clarifies that the statistics are from the sample area, not the entire district.

Brent asks for the boundaries of the sample area.

Owen references the map on page 2 of the Summary of On-Street Parking Utilization Northwest Portland report. [2]

Owen presents a slide that compares occupancy rates between the 2016 and 2017 surveys. There is a decrease in occupancy rates in the 2017 study.

[1] Attachment A

[2] Attachment B

Karen inquires about the decline and asks if there is a possible explanation for it. She comments that the survey was conducted the same time last year and wonders if there could have been an anomaly.

Owen explains that there are a lot of granular details/considerations. He believes this is a positive change. The peak this year was 80.5% occupancy from 11 a.m. – 12 p.m.; last year the peak was 87.3% occupancy from 12 p.m. – 1 p.m.

Owen shares the performance of the metered and metered OBP stalls. (what page?)

Rick points out that metered stalls are much emptier in the morning than they used to be.

Karen adds that it's harder to park in the OBP meter than it is in a metered stall.

Rick Williams comments that the goal would be to have similar occupancy rates between metered and metered OBP stalls.

Owen explains that, overall, signed OBP stalls have a greater occupancy rate than regular signed stalls. In signed OBP stalls, 6 out of 10 enforced hours exceed an 85% occupancy rate. He encourages the committee to take note of these constrained stalls.

Nick asks if peak hours are uniform throughout the district. He asks if the 11-noon peak hour is true for all areas of the neighborhood.

Owen says that he will be able to answer that question once the data is compiled. Peak hour data is available but has not been created into a report yet. He explains that this is the first dive into this data.

Tom asks when meter revenue started being collected.

Chris explains that the meters were installed in 2016.

Nick comments that both of the last two last surveys would have captured full years of meters being in place. So, the drop-in occupancy rate couldn't be attributed to meters.

Owen explains occupancy rates and average length-of-stay data by stall type (page 9):

- 2-hour signed stalls are 92.5% occupied
- 2-hour metered stalls are 85.6% occupied
- 4-hour metered stalls are 73% occupied
- 4-hour signed OBP are 88.8% occupied
    - 65% of users in 4-hour signed OBP are visitors
- 4-hour metered OBP are 85% occupied
    - 54% of users in 4-hour OBP are visitors
- ALL OBP stalls are in excess of 85%
- There's a low level of time compliance in 2-hr and 4-hr signed stalls
- There is a high level of time compliance in all metered stalls
- Average length of stay at 4-hour metered stalls is 2 hours 13 minutes

Karen points out that the average length of stay for non-permit users is 5½ hours in the 4-hour meter OBP.

Rick asks if there's a similar level of enforcement in both signed and metered areas.

Chris explains that she has conversed with enforcement after seeing this report. PBOT is discussing ways to get more enforcement in the district.

Karen adds that it's easier to enforce metered stalls than signed stalls.

Chris agrees and adds that PBOT is working towards better enforcement in the district.

Rick Williams points out that 4-hour signed OBP stalls are 89% occupied, over 50% of users are visitors. 4-hour metered stalls are 85% occupied, and over half are visitors as well. The only difference between the stalls is that one is paid and the other is not. The occupancy rates between the two types are not that different.

Nick asks if there are any explanations/thoughts on the dramatic increase in time-stay durations for the 4-hour OBP stalls. The average length of stay rose from 5h 16m in 2016 to 10 hours in 2017. He asks if any changes in the last year would explain why people are staying in the stalls much longer than the year before, even though the permit from last year would have allowed them to stay longer.

Karen mentions that more people appear to be leaving their cars on the street all day then in the past, and wonders why that would be.

Owen suggests that there are less permit users, but those with permits are staying for longer periods of time.

Ron interprets the data to read that a decent number of visitors are willing to pay for convenience.

Rick Williams explains that when two similarly timed stall types are observed (one metered and one not) you look at the usage pattern to determine if price is an effective tool for that particular stall type. It appears that pricing is not effective tool in this particular case.

Ron disagrees and says that pricing is effective because the occupancy rate of 2-hour signed stalls is 92.5%, whereas the occupancy rate of 2-hour metered stalls is 85.6%. He interprets that as people being willing to look for parking for a longer time to avoid paying, which is human behavior. He mentions that he personally, would be willing to pay for a stall, if he knew one would be available.

Owen says that studying heatmaps hour-by-hour would show how occupancy rates change in different block faces by time of day.

Rick draws two conclusions from the average length of stay data:

- Decrease the time stay limit to better match the usage, or
- If people only stay for 2 hours and 30mins, it doesn't matter if the stall is 4 hours or not, as long as the occupancy rate is under 85%

Owen reviews the length of stay frequencies (page 12).

Karen notices that 39.3% of non-permit users stay for 1 hour. She remembers discussing 4-hour meters being important in the neighborhood, to give people in the retail core the ability to stay longer, but there's so many areas outside of the retail core where people are staying longer/enforcement is poor. She explains that it would be good to get length of stay data in the metered vs non-metered area.

Owen agrees and says he will create an average length of stay frequency map for 4-hr meter areas.

Brent asks for clarification on Figure E (page 12), it appears that 20% of non-permit users are out of compliance. Anyone staying 5 hours or longer without a permit is out of compliance. 1 in 5 spots are being stayed at longer than the signed time limit.

Rick explains that people are allowed to plug the meters. They can pay to stay longer than 4 hours and they wouldn't be out of compliance.

Rick Williams points out that Table 8 on page 12 shows that 4.1% of license plates were observed moving to evade. Which is a low percentage, considering the size of the district. He concludes that moving to evade is not an issue in NW.

Karen points out that vehicles aren't necessarily moving to evade a citation and/or payment. Some people move from one end of the neighborhood to the other for business, shopping, lunch, etc. This could be a visitor in the neighborhood who prefers to drive themselves from one end to the other, rather than walking.

Rick suggests changing the wording from "moving to evade" to "moving within the district."

Owen agrees and explains that he will remove "to evade" and rename it to "observed vehicle movement."

Brent asks if the decision to install 2-hr vs 4-hr meters was based on previous data.

Rick answers that the original request for 4-hour meters came from the business community to allow visitors to stay for 4 hours and plug the meter, if they needed to stay longer. At some point during the process, the committee suggested 2-hour meters instead, and the decision was made that up to 20% of meters be reduced to 2 hours.

Brent asks if the decision to convert some meters to 2 hours was an effort to increase turn-over for businesses on 21st and 23rd.

Karen answers that the hope was that 2-hour stalls would be more available than 4 hour stalls. But the length of stay appears to be similar between the two.

Brent points out that time stays in meter-only stalls are being adhered to (such as 21st and 23rd), and the 4-hr OBP meters seem to serve their purpose because people tend to stay under 4 hours.

Nick asks for clarification on the data - where are the permit holders going? He references Table 5 on page 19. Permit-users in 4-hr OBP stalls are down from 1,352 last year to 524 this year. Permit holders in 4-hr signed OBP are down from 256 to 153. The permit holders aren't shifting in any other category.

Rick suggests that, by limiting employee permits, it reduced the number of people that are using their permits in the district.

Nick comments that the number of permits taken out of the system doesn't equate to a 60% reduction in permit usage.

Karen agrees and asks if there is data that shows how many of the permit users are residents and how many are employees. That data would show where the biggest reduction occurred (employee or residential).

Owen says that the data is available and he could compile those numbers.

Owen discusses violation rate (non-compliance) by stall types. He mentions that the number of violations in metered stalls might, in fact, be lower than presented, because of the ability to plug the meter. RWC doesn't have the ability to track plugged meters. He could pull data from Parking Kitty, but wouldn't be able to pull data for people that paid using the meter.

- Signed stalls have a high violation rate, they're harder to enforce.
- Metered stalls are self-enforcing. The more metered stalls you have, the greater compliance you will have with time restrictions.

Karen inquires about the 33% violation rate of metered OBP ADA stalls.

Owen explains that there were only 4 ADA stalls in the sample area. Because the sample size was so small, the violation rate would be drastically influenced by even just two violators. But considering that there are only 4 stalls, the ADA violation rate isn't high.

Owen adds that tracking vehicle trips is very informative for determining driving habits in the neighborhood. Using data to track permit holders vs visitors helps ensure that the number of visitors coming into the neighborhood keep turning over adequately.

Karen asks what "unique vehicle" means.

Unique license plates are referred to as "unique vehicles."

Rick Williams explains that, over the course of enforcement hours, 3,702 vehicles were not permitted.

Rick expresses surprise at the ratio of permit holders to non-permit users.

Karen agrees, she thought there would be more permit users.

Owen mentions Seattle's decision to change their meter rates to increase turn-over. They increased their meter rate from $2/hr to $4/hr in one area. The purpose was to reduce the occupancy rate to 85%. However, with the increase in price, the number of cars parking in that area drastically decreased. It had a negative effect on the area and business owners noticed a change in customer frequency. The price pushed out a lot of visitors.

Karen wonders if the current turn-over rate of 3.08 for non-permits users is a good number.

Ron mentions that the data doesn't make sense to him. There were 2,733 stalls surveyed and only 747 were occupied by permitted vehicles. That means only a small fraction of issued permits are being used, and it means that only 1 of 4 spots is being occupied in the sample area by a resident/employee. He says that doesn't add up.

Scott comments that this data reflects vehicle parking during enforcement hours (from 9am - 7pm). It doesn't include residents who are coming home from work.

Owen references Figure H on page 14. Data shows that 29.7% of stalls are used by permit holders at 7pm. At 8am, 52% of parked vehicles are permitted.

Rick points out that at 8pm there are 3x more non-permit users than permit users. Also, of the 3,348 business permits issued, it appears that only 250 are being used in the study area at any given time.

Ron asks how, at 8pm at night, only 17% of stalls could be occupied by resident permits. It doesn't seem like a reasonable amount.

Karen refers to the survey area map, most of the areas surveyed were not residential.

Nick mentions that some residents don't own permits because they leave/return outside of enforcement hours.

Rick suggests conducting a survey at 1am to catch non-permitted residents parking outside of enforcement hours.

Rick Williams explains that the data from 2016 showed similar trends in occupancy rates.

Owen reminds the committee that these are only the sampled stalls, these numbers will increase once they're extrapolated to the entire neighborhood. There are approximately 6,000 stalls in the district, only 2,733 were sampled.

Tom recalls that Lancaster conducted a survey a few years back and RWC analyzed the data. The data from Lancaster showed similar trends in the small number of permit usage.

Brent points out that almost every other East-to-West running street was not sampled, and a lot of residents live on those streets. If RWC sampled a lot of the North-to-South running street on 21st and 23rd and omitting the East-to-West running streets, the data makes more sense, because it doesn't encompass as many residential streets.

Ron adds that he doesn't want residents to conclude that if there's difficulty parking at 8pm at night, it's due to visitors and businesses, not residents. The data suggests that a lot of residents don't park on the street at night. He asks if it's possible to sample residential areas more comprehensively for the next survey.

Rick Williams answers that the next survey won't be conducted until the Fall. Brent asks if 21st and 23rd was ever metered OBP.

Chris answers that 21st and 23rd were signed but once the meters were installed, they became metered only. 21st and 23rd were never meter OBP.

Owen encourages the members to analyze the data and come up with questions. He asks the members to consider:

- Do we have the right mix of stall types?
- Should we reduce demand in the OBP stalls? (over 85%)
- Should we increase the number of metered stalls?
- Should the number of permits be reduced?
- How to we encourage/incent greater use of alternative modes?
- How do we get more users to parking off-street?
- Are meter rates appropriate to occupancy levels?

NW Staff Person

Chris updates the members on hiring a dedicated staff person for the committee. The City can create the position, but would need a 2-year funding commitment from the SAC.

Ron makes a motion to make a 2-year commitment to fund the position.

Tom seconds the motion.

All in favor; the motion passes.

Chris says that she will draft an announcement and send it to the members for review (to ensure it captures their requirements), then PBOT will create the position and run a recruitment.

Rick points out that an office location may be needed so the staff person is in the neighborhood on a somewhat regular basis.

Permit Update

Antonina updates the members on the current Zone M statistics:

- Business permits issued: 3,348
- Resident permits issued: 3,523
- Total permits issued: 6,871
- There are 63 buildings in NW with 30 or more units, representing a total of 3,590 units
- 8 buildings are at 60% capacity
- Of the 10 applicants waitlisted, 5 reside in Linfield College dorms
- 26 residents received the $50 return incentive
- 99 residents and 24 employees have opted out

Karen suggests tracking permit statistics month to month.

Chris agrees, PBOT will provide month-to-month comparison reports.

Tom asks how many permits are issued to the 63 restricted buildings.

Chris says PBOT will pull that data for next month's meeting.

Tom asks how many buildings in the district have less than 20 units.

Rick believes that more than half the residents in NW live in a building with 30 units or less.

New Business

Jeanne updates the committee on pedestrian lighting improvements. She corresponded with City staff and was told that it would be possible to get standard pedestrian-scale lighting installed. The SAC can hire someone to redesign streetscapes at the same time that the NW in Motion study is happening. That individual could look at potential "priority locations" for pedestrian street lights, as opposed to all of 21st and 23rd. Jeanne points out that grouping pedestrian scale lighting in conjunction with re-development is the most efficient and least expensive way to get the lights installed.

Brent asks what pedestrian lighting entails- is it lighted crosswalks or general lighting down streets?

Jeanne explains that pedestrian lighting depends on the needs of the particular location. It is more expensive to install the lights if the sidewalks are already in place because conduits would need to be installed under the sidewalk and that's an expensive process.

Ron asks if Jeanne will be formally approved by the SAC.

Rick answers that Jeanne has received a nomination from NWDA and it is going to the commissioner to be verified. By next month she should be an official member.

Brent asks for an update on the Transportation Wallet. [3]

[3] *The Transportation Wallet is a Transportation Demand Incentive. For $99 an applicant would receive $700 worth of transportation incentives - $100 Hop Card, annual BIKETOWN membership ($144) and an annual Streetcar pass ($440).*

Chris answers that the hope is to launch the Transportation Wallet next month, a notification will be sent/advertised to the district.

Tom asks when Scott will be leaving the committee.

Scott answers that he is transiting to project management and will attend meetings as a Project Manager. A new TDM specialist will be joining the committee.

Meeting adjourned

NW District Parking District

2017 Survey Data Findings

Rick Williams
Owen Ronchelli
Connor Williams

RICK WILLIAMS CONSULTING
Parking & Transportation

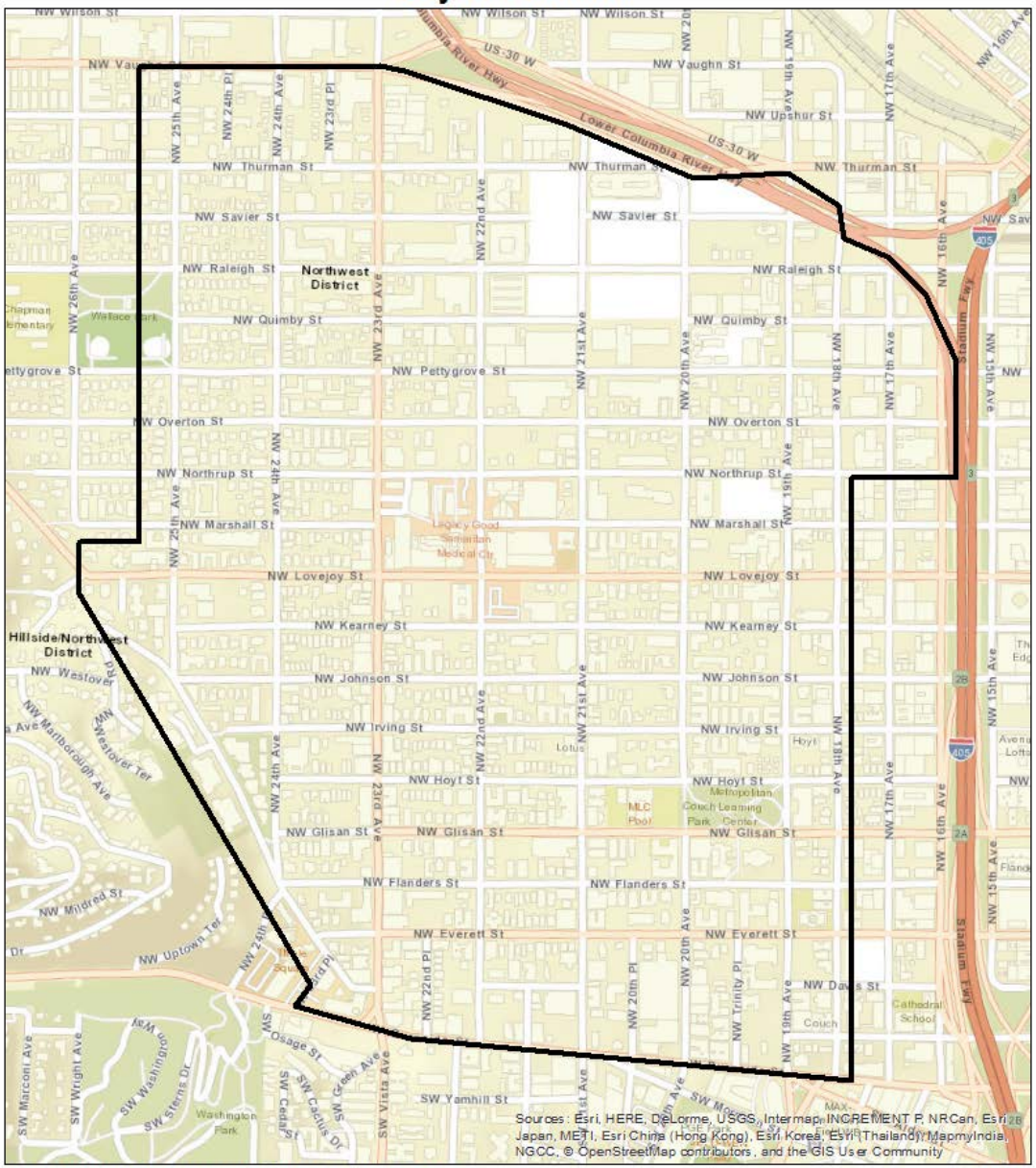
January 17, 2018

Managing Parking In NW Portland

Parking in the NW Parking District is highly constrained, requiring implementation of strategies to mitigate constraints.
Strategies are focused to:

- Create an environment that supports greater use of underutilized off-street resources (shared parking).
- Encourage and create options for users to reduce reliance on vehicle access.
- Manage the permit program while recognizing continuing growth in the number of residents and employees.
- Continue to ensure access for visitors accessing district businesses through metered parking supply.
- Uses incentives and pricing as a way to balance permit demand.
- Continues to use actual data of utilization in the district to support decision-making.
- Look for opportunities to expand the off-street supply

NW Parking District Study Boundary



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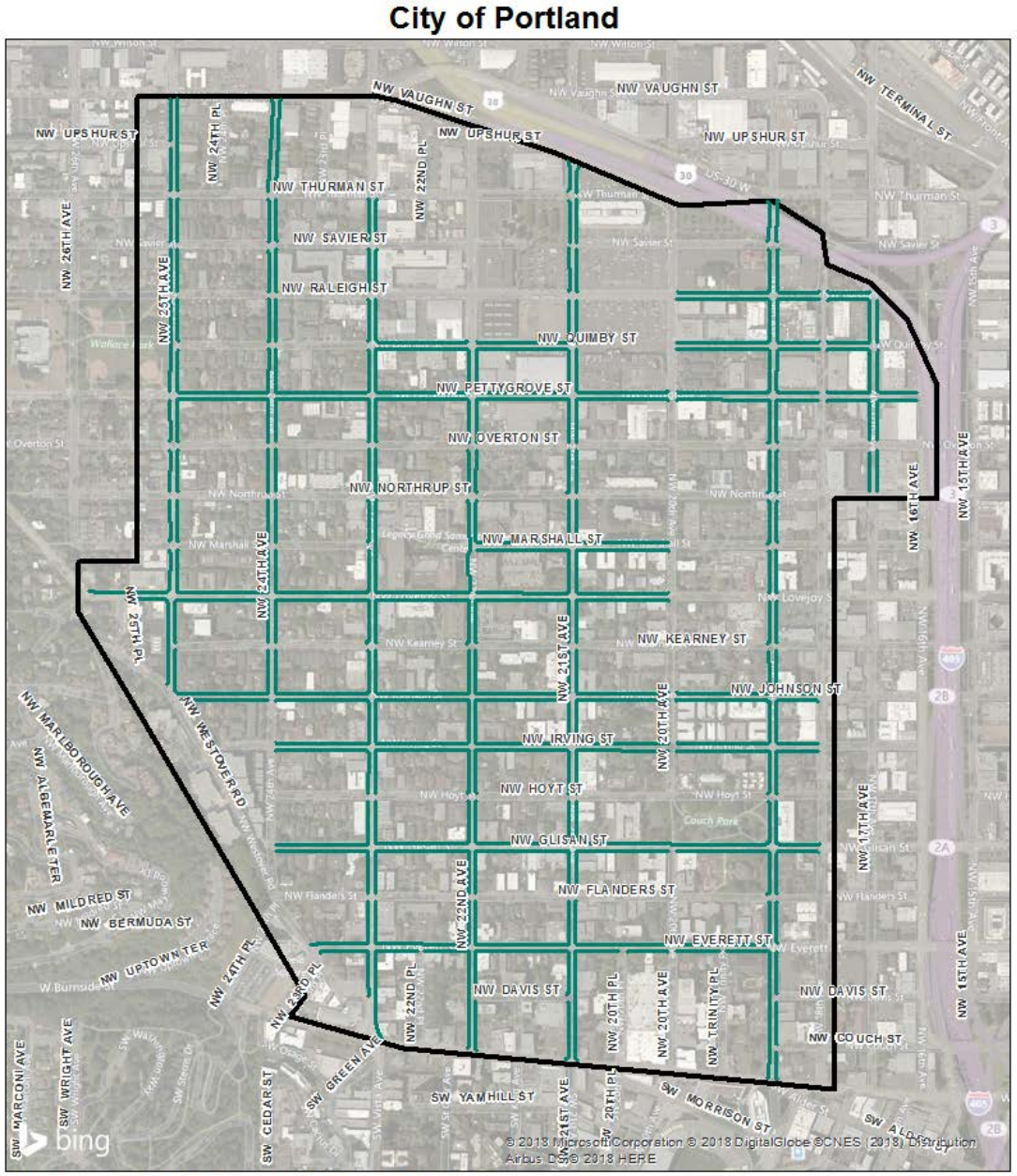
Parking & Transportation

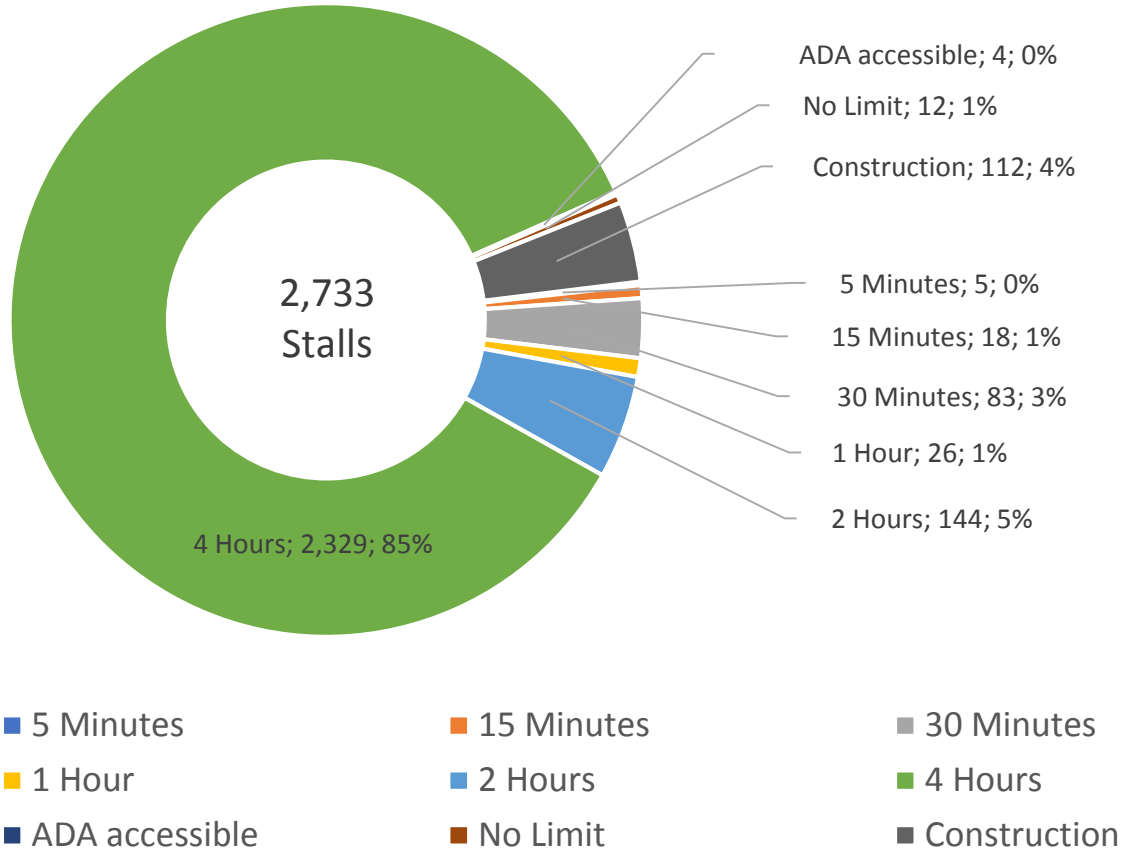
NW Parking District 2017 Study Area

5,264 total stalls

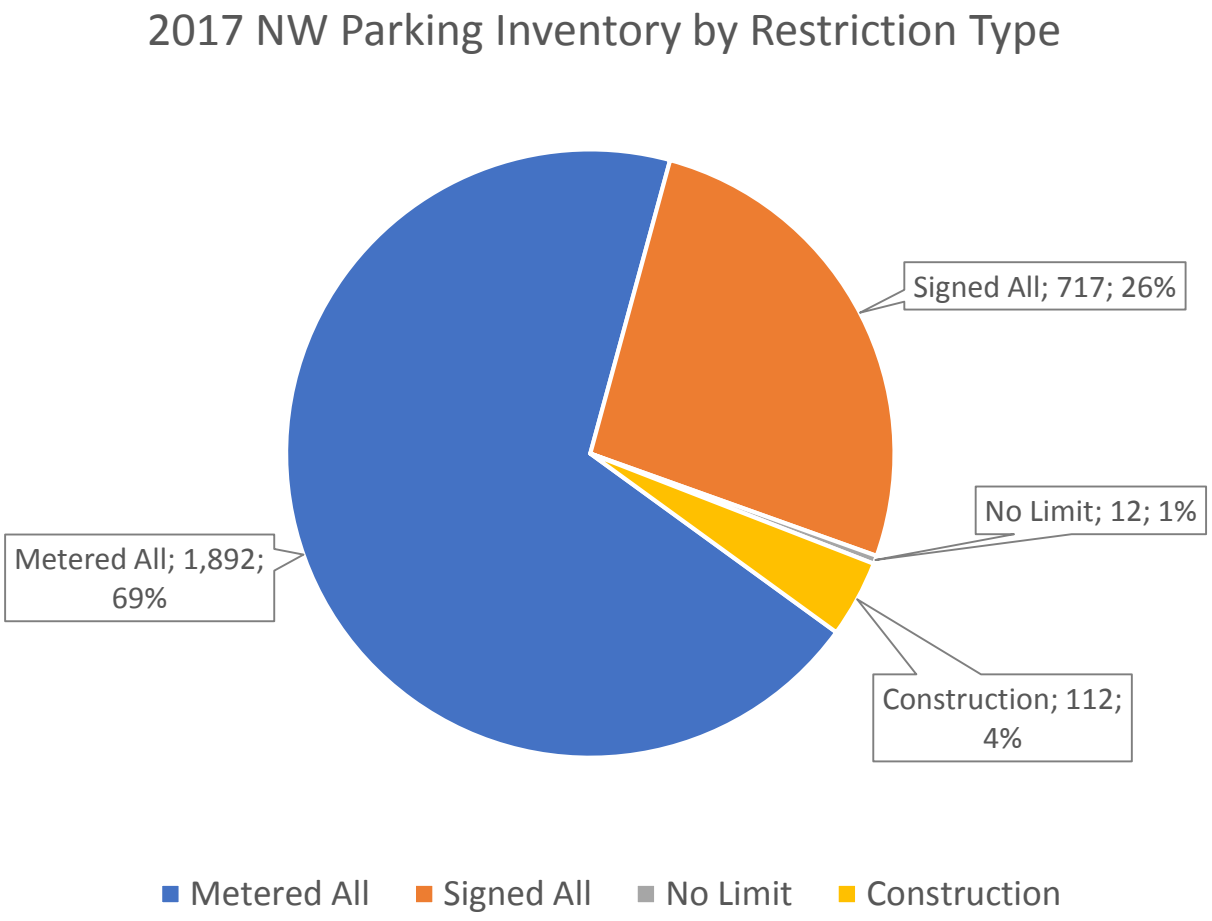
2,733 stalls studied
(52% of supply)



2017 NW Portland Parking Inventory

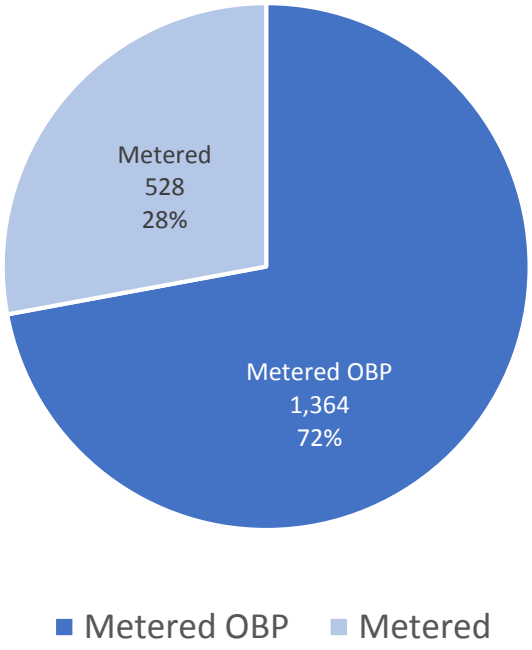


See Table 3 of RWC Data Summary

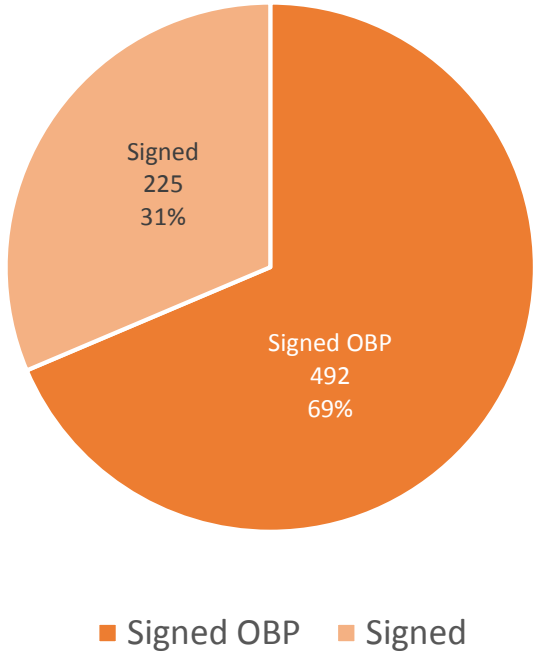


See Table 2 of RWC Data Summary

Metered Stalls by Restriction Type



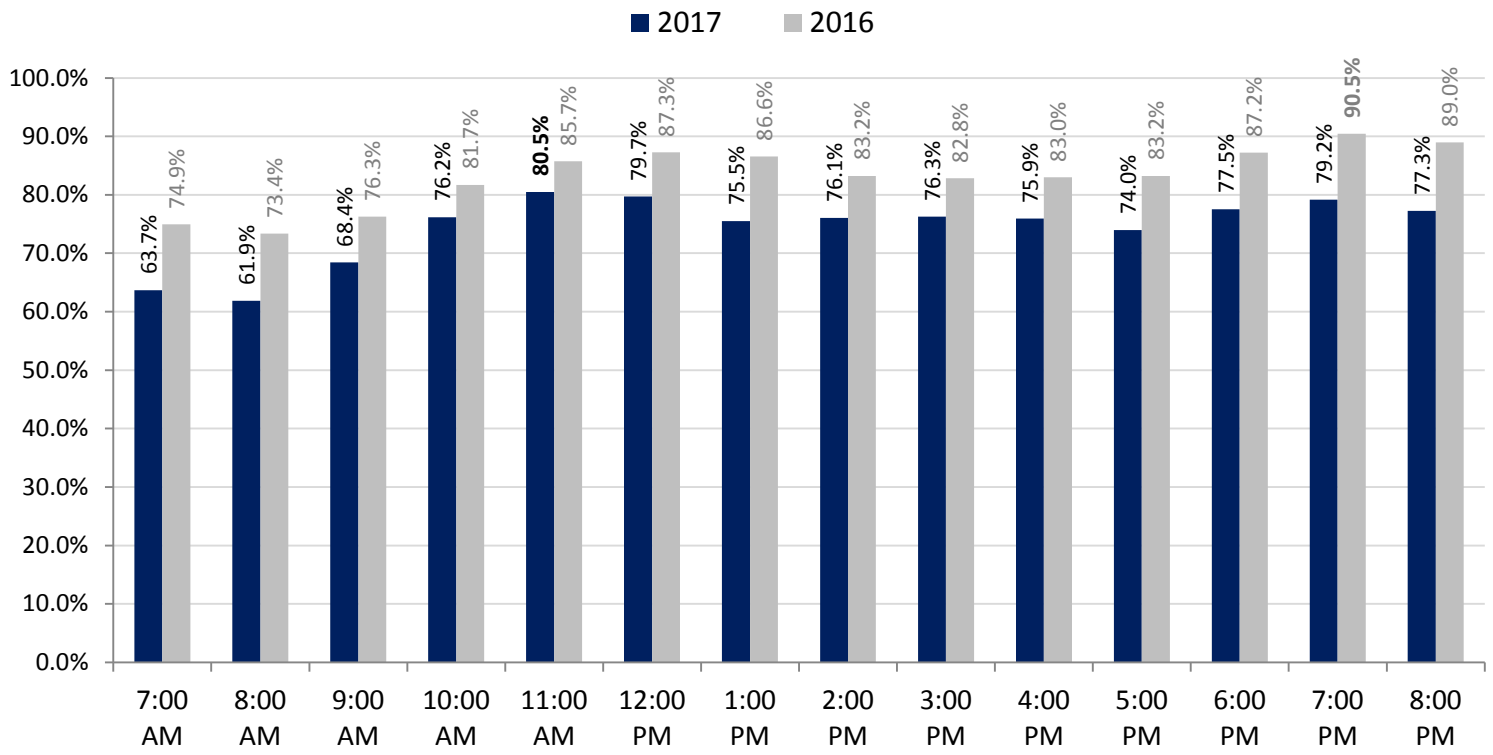
Signed Stalls by Restriction Type



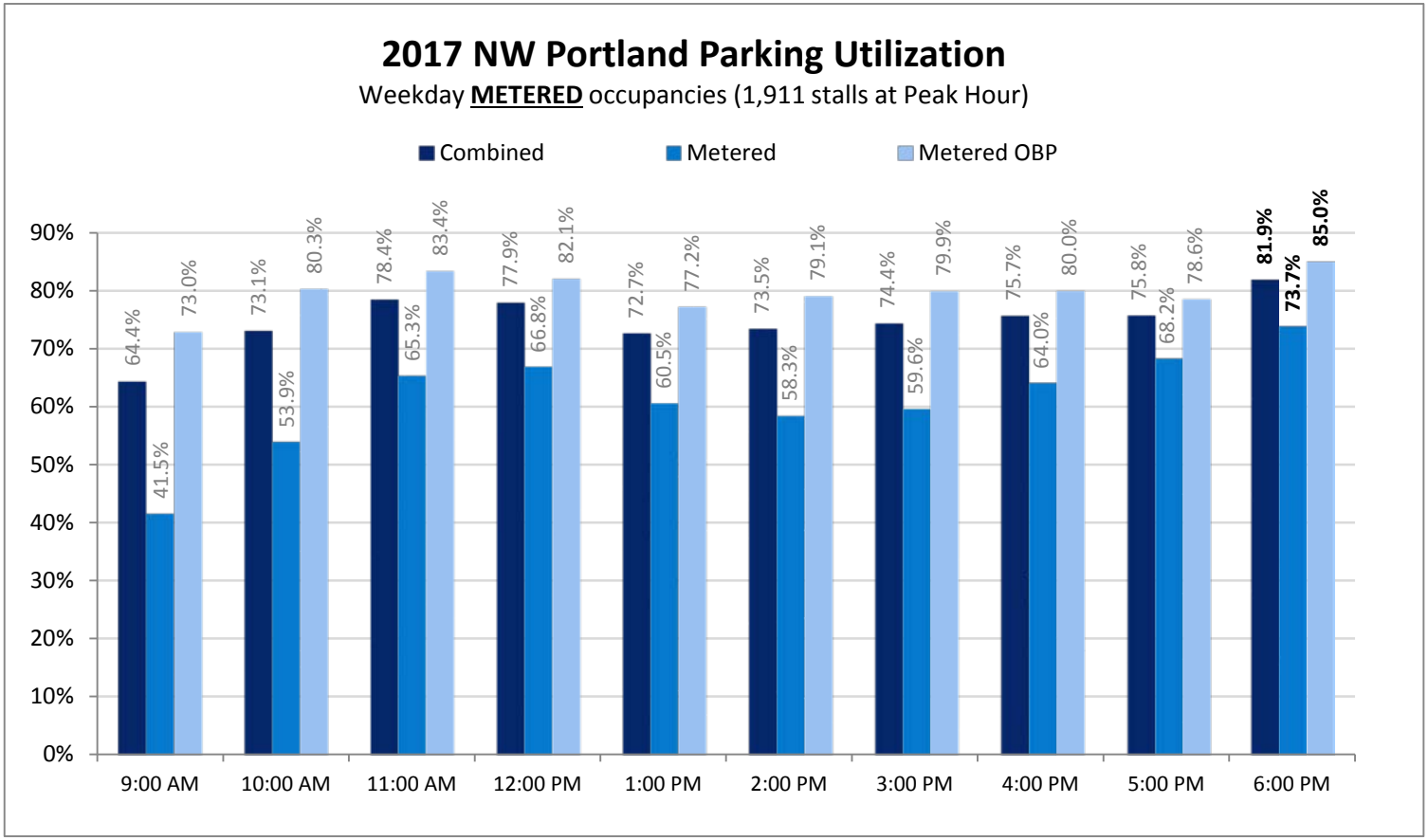
See Table 2 of RWC Data Summary

NW Portland Parking Utilization

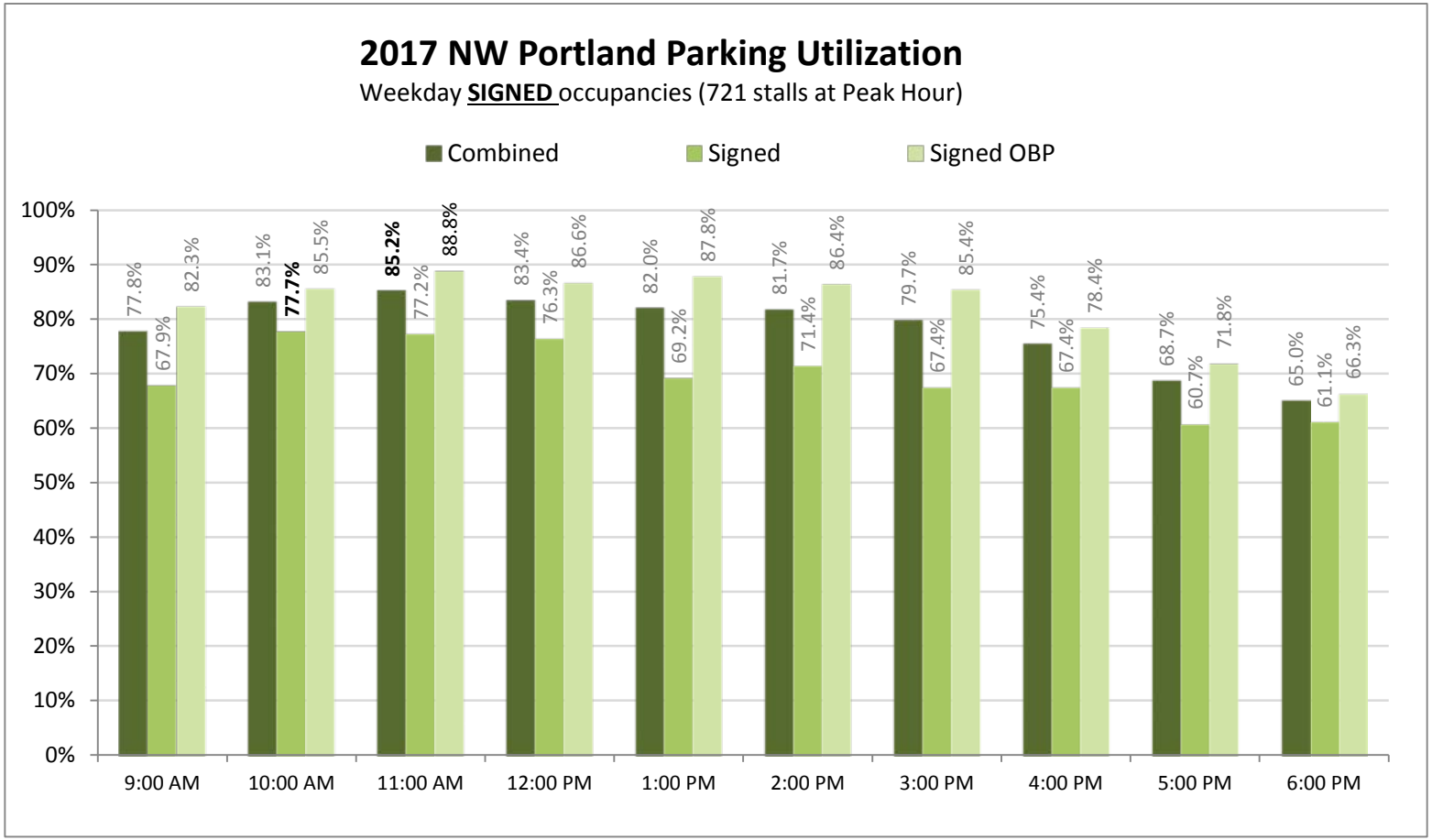
2017 vs 2016 weekday on-street occupancies (2,733 stalls at Peak Hour)



- 2017 peak 11:00 AM – 12:00 PM; 2016 peak 12:00 -1:00 PM
- 2017 = 80.5% peak occupancy; 2016 = 87.3%
- 2017 evening peak = 79.2%; 2016 = 90.5% (7:00 – 8:00 PM)



- Occupancies at Metered stalls do not exceed 85% during enforcement hours



- Occupancies at Signed exceed 85% in 6 out of 10 enforcement hours

Use Type	Stalls Peak Occupancy (2016 Peak)	User Group	Users (2016 users)
2 Hours Signed	53 92.5% (90.3%)	All	49 (28)
		Non-permit Users	38 (24)
		Permits Displayed	11 (4)
2 Hours Metered	91 84.4% (88.6%)	All	76 (70)
		Non-permit Users	73 (70)
		Permits Displayed	3 (0)
4 Hours Metered	375 73.0% (77.2%)	All	259 (328)
		Non-permit Users	259 (321)
		Permits Displayed	0 (7)
4 Hours Signed OBP	492 88.8% (94.3%)	All	436 (509)
		Non-permit Users	283 (253)
		Permit Users	153 (256)
4 Hours Metered OBP	1,368 85.0% (91.7%)	All	1,135 (1,649)
		Non-permit Users	611 (297)
		Permits Users	524 (1,352)

Key Findings

- More users parking in 2 Hour stalls
- Less overall users parking in 4 Hour stalls (all categories)
- 4 Hour Metered stalls preferred occupancy level
- **65%** users in 4 Hour Signed OBP are visitors
- **54%** users in 4 Hour Metered OBP are visitors
- All OBP stalls are ≥ 85%

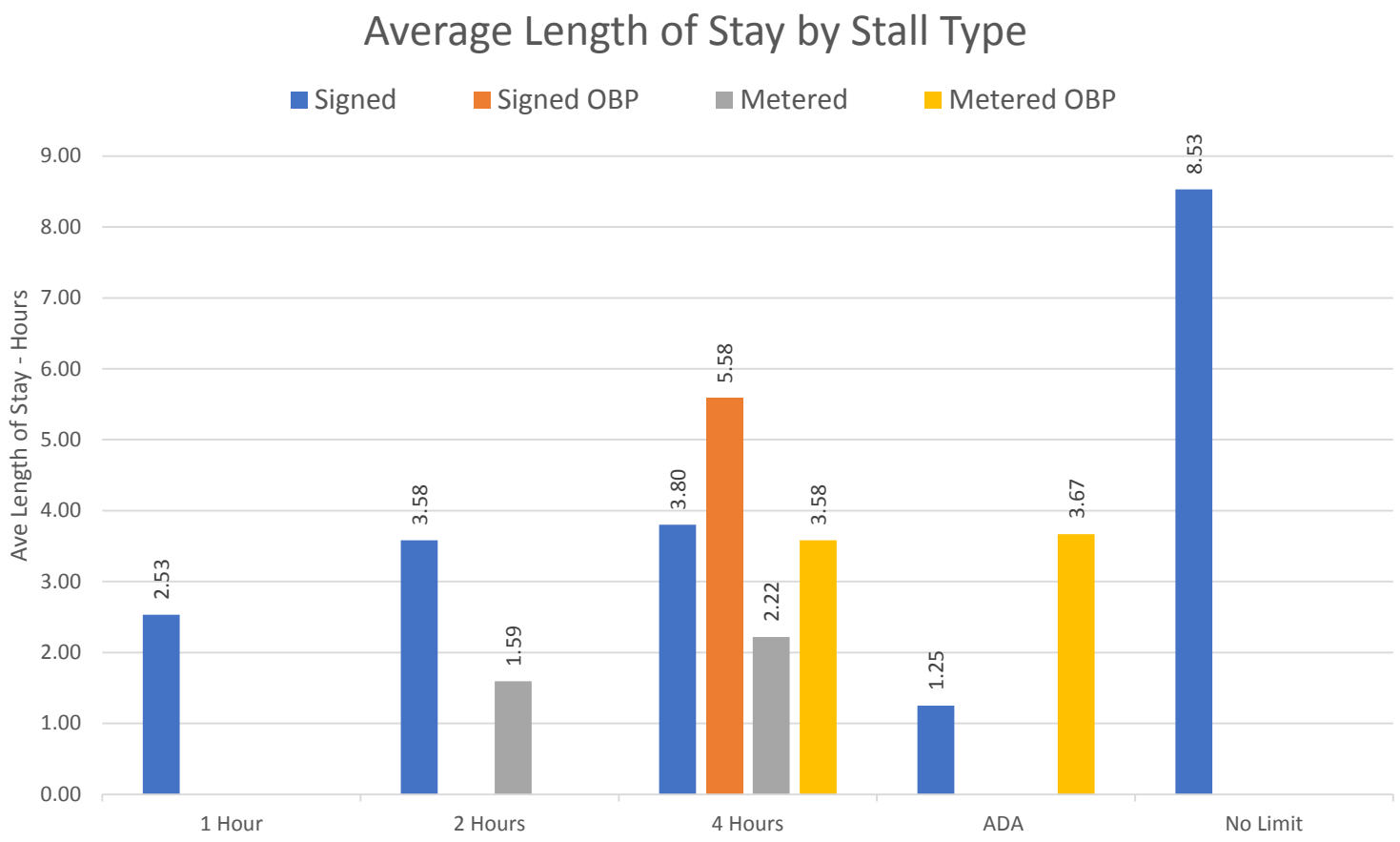
Table 5 RWC Data Summary

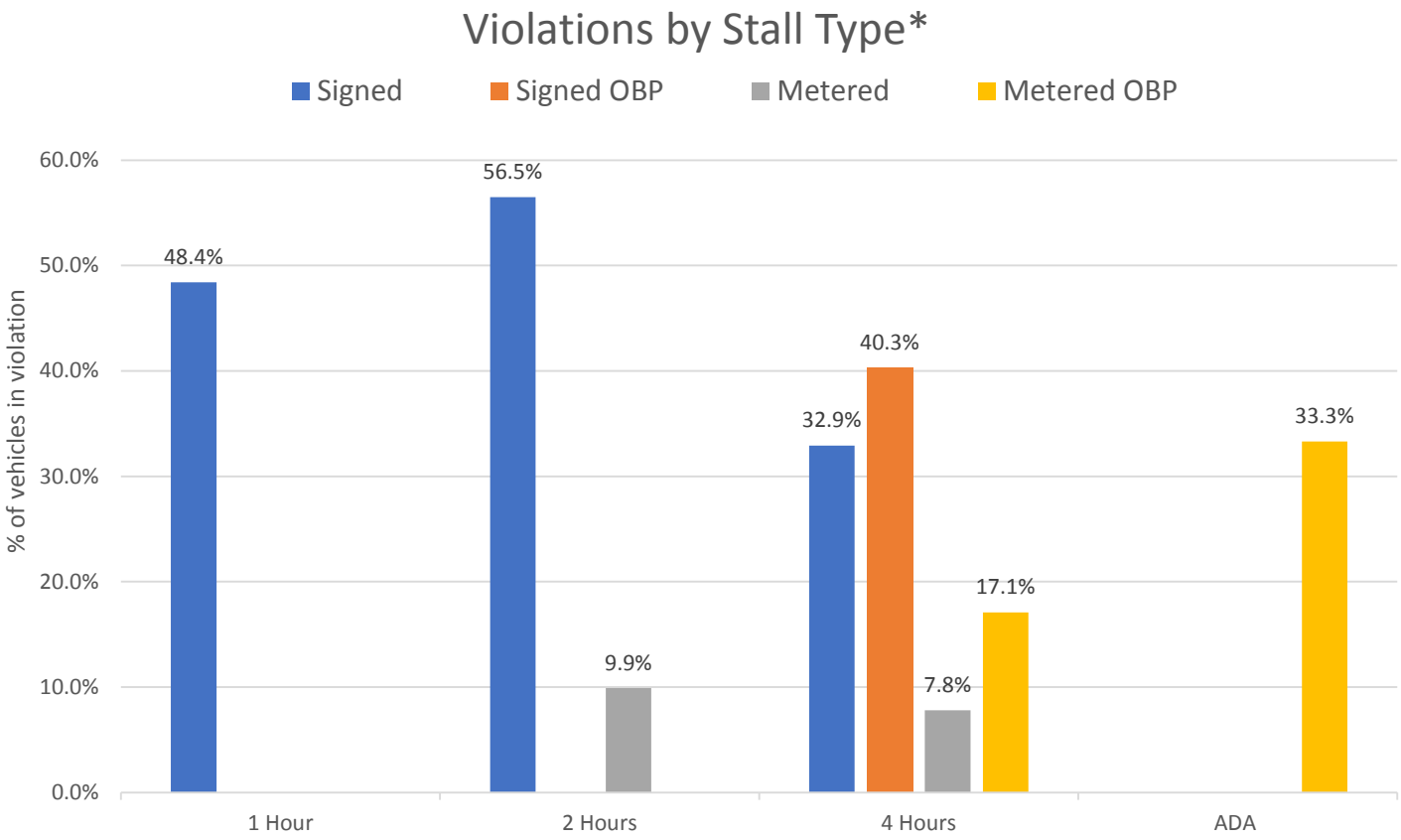
Use Type	Stalls Peak Occupancy (2016 Peak)	User Group	2017 Length of Stay (2016)
2 Hours Signed	53 92.5% (90.3%)	All	3h 35m (1h 57m)
		Non-permit Users	3h 21m (1h 55m)
		Permits Displayed	4h 52m (2h 12m)
2 Hours Metered	91 84.4% (88.6%)	All	1h 36m (1h 31m)
		Non-permit Users	1h 31m (1h 31m)
		Permits Displayed	4h 22m (N/A)
4 Hours Metered	375 73.0% (77.2%)	All	2h 13m (1h 44m)
		Non-permit Users	2h 13m (1h 43m)
		Permits Displayed	N/A (2h 47m)
4 Hours Signed OBP	492 88.8% (94.3%)	All	6h 13m (3h 58m)
		Non-permit Users	5h 35m (3h 6m)
		Permit Users	8h 20m (5h 16m)
4 Hours Metered OBP	1,368 85.0% (91.7%)	All	5h 46m (4h 29m)
		Non-permit Users	3h 35m (2h 32m)
		Permits Users	10h 0m (5h 16m)

Key Findings

- Poor level of time restriction compliance at Signed stalls (2 & 4 Hour stalls)
- High level of time restriction compliance at all Meters
- Average length of stay at 4 Hour Meters = 2 hours 13 minutes

Table 5 RWC Data Summary


Average Length of Stay by Stall Type
Signed
Signed OBP
Metered
Metered OBP
Ave Length of Stay - Hours
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
2.53
3.58
1.59
3.80
5.58
2.22
3.58
1.25
3.67
8.53
1 Hour
2 Hours
4 Hours
ADA
No Limit



*Violation rates are likely lower than reported due to the ability of users to 'plug the meter' (add additional time beyond the posted time restriction) – users can do this through the pay station or the Parking Kitty app

Use Characteristics	All Users	Non-Permit Users	Permitted & ADA
Length of Stay	4h 21m	3h 15m	9h 53m
Unique Vehicles (UV)	4,449	3,702	747
Vehicle Hours Parking (VHP)	19,386	12,001	7,385
Turnover Rate	2.29	3.08	1.01
Violation Rate*		21.1%	
Hours spent in violation		17.1%	
UV staying ≥5 hours in time-limited stalls (% of UV)**		798 (17.9%)	

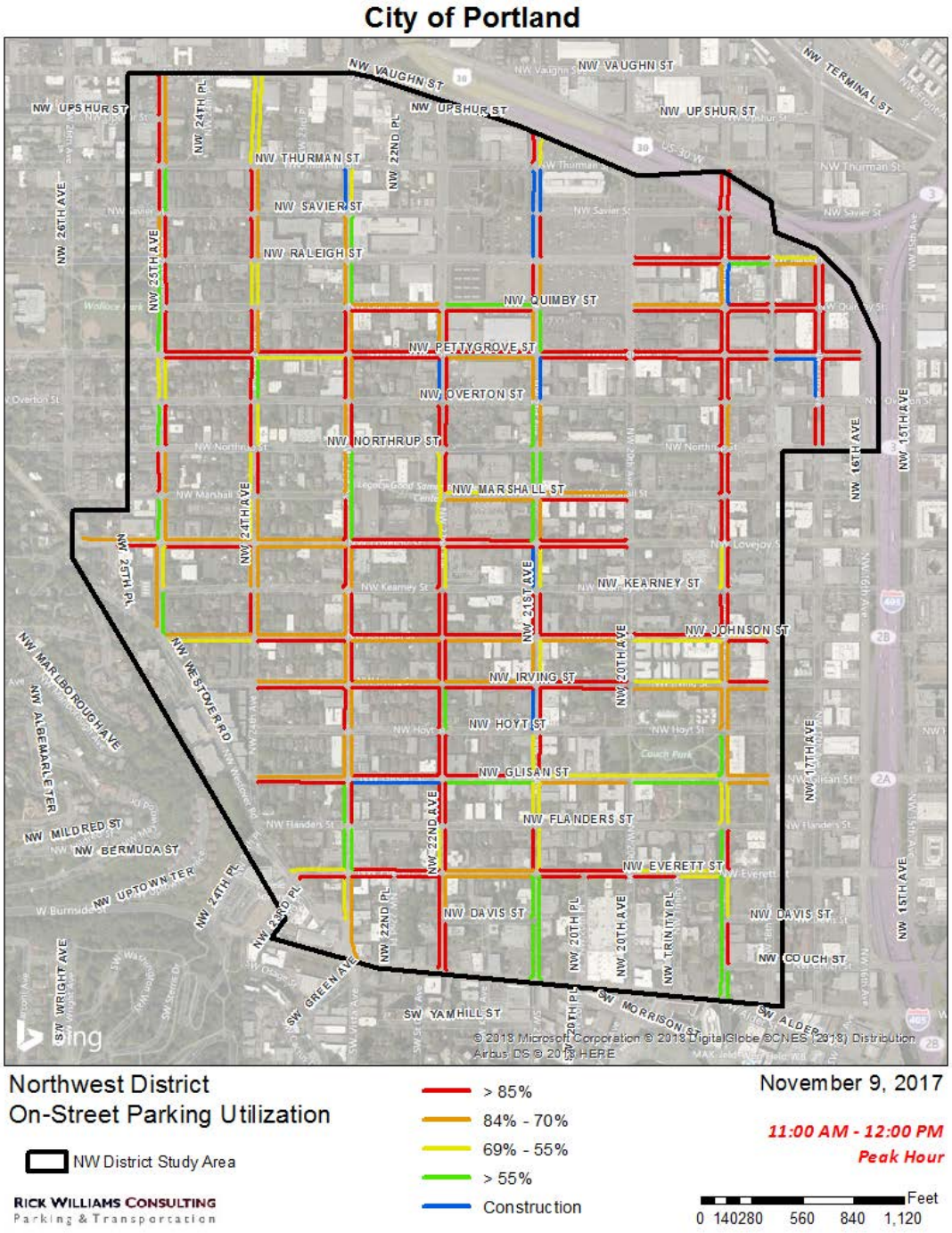
*Violation rates are likely lower than reported due to the ability of users to 'plug the meter' (add additional time beyond the posted time restriction) – users can do this through the pay station or the Parking Kitty app

**Filtered for non-permit users only

Peak Hour Occupancy Heat Map 11 AM – 12 PM

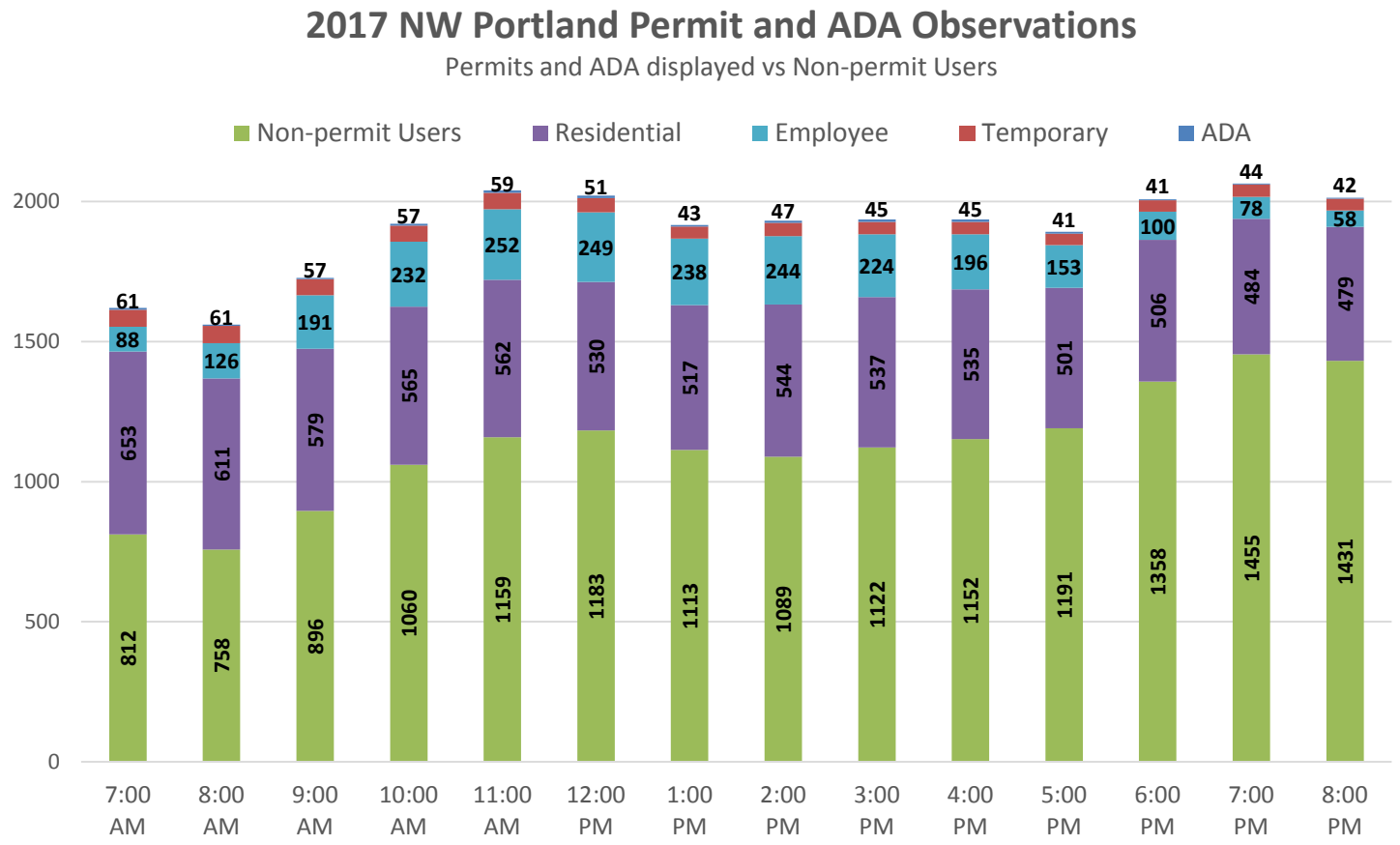
Areas of high constraint:

- NW Pettygrove
- Lovejoy (23rd – 20th)
- NW 22nd (Lovejoy – Burnside, Quimby – Northrup)
- NW 18th (Thurman – Johnson)



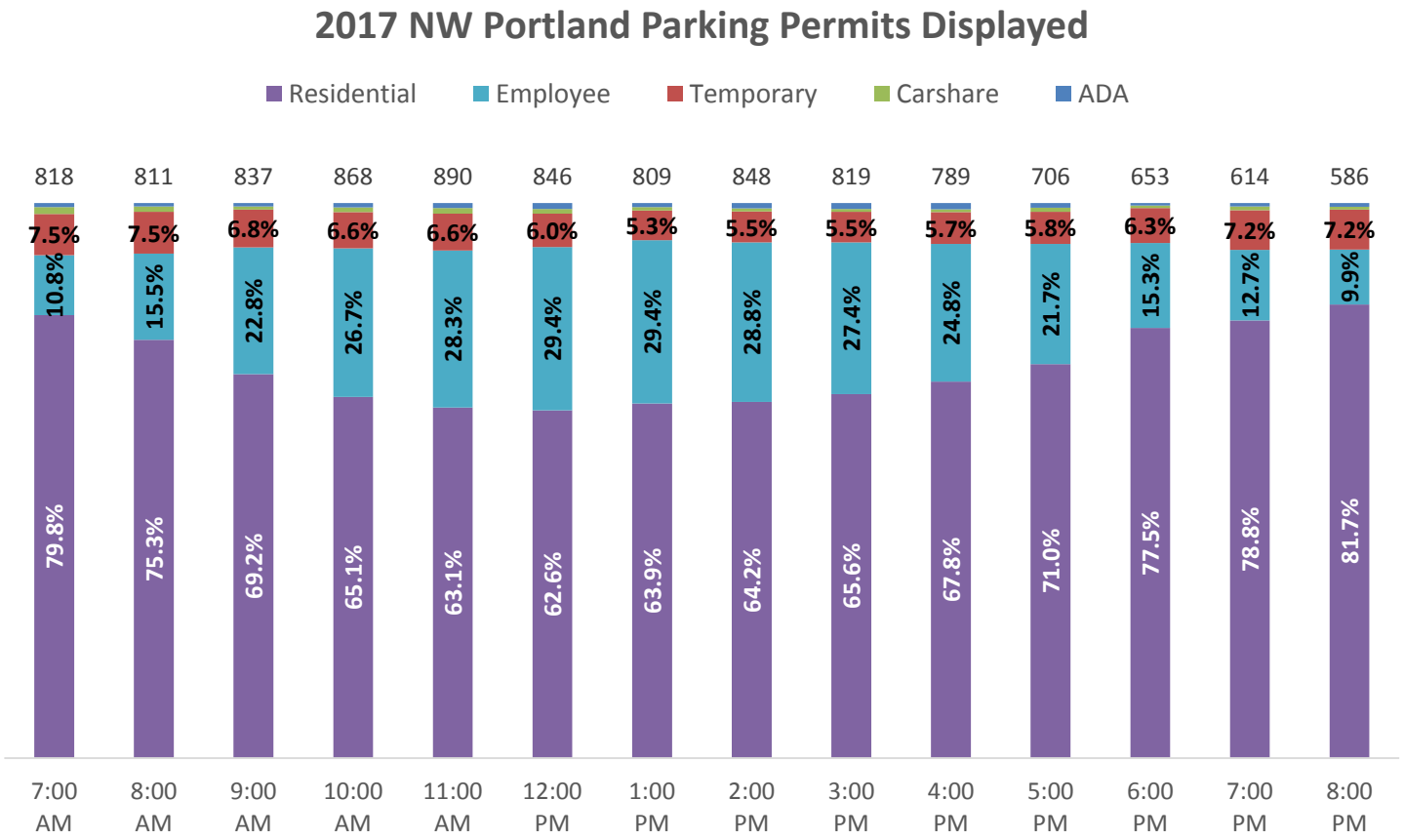
Permit Program

Portion of parking occupancy by user group



Permit Program

Parking Permits Displayed by Type



Detailed Permit Data by Hour

Permit Type	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 Pm	5:00 PM	6:00 PM	7:00 PM	8:00 PM
ADA	5	5	5	7	8	9	6	8	9	9	6	3	4	4
Temporary	61	61	57	57	59	51	43	47	45	45	41	41	44	42
Carshare	10	8	5	7	9	7	5	5	4	4	5	3	4	3
Residential	653	611	579	565	562	530	517	544	537	535	501	506	484	479
Employee	89	126	191	232	252	249	238	244	224	196	153	100	78	58
Total	818	811	837	868	890	846	809	848	819	789	706	653	614	586
Stalls Occupied	1,630	1,569	1,733	1,928	2,049	2,029	1,922	1,937	1,941	1,941	1,897	2,011	2,069	2,017
% of Occupied stalls	50.2%	51.7%	48.3%	45.0%	43.4%	41.7%	42.1%	43.8%	42.2%	40.6%	37.2%	32.5%	29.7%	29.1%

[1] Of the 890 permits and ADA placards observed from 11:00 AM – 12:00 PM, 74 were displayed at invalid locations (Non-Or By Permit stalls).

- Permits make up 48% of occupied stalls at 9:00 AM (enforcement hrs)
- Permits make up 50% of occupied stalls at 7:00 AM
- Permits make up 29% of occupied stalls at 8:00 PM

Questions to Consider:

- Do we have the right mix of stall types?
- Should we reduce the number of signed stalls? (poor time restriction compliance)
- How do we reduce demand in the OBP stalls? (over 85%)
- Should we increase the number of metered stalls? (high time restriction compliance)
- Should the number of permits be reduced? (district continues to grow at a much higher rate than the parking supply)
- How do we encourage/incent greater use of alternative modes?
- How do we get more users to parking off-street? (in under-utilized lots)
- Are meter rates appropriate to occupancy levels?

2017

Summary of On-Street Parking Utilization
Northwest Portland
DRAFT SUMMARY

January 12, 2018

Prepared for:

City of Portland

Bureau of Transportation

1221 SW 4th Ave

Portland, OR 97204

Prepared by:

RICK WILLIAMS CONSULTING

Parking & Transportation

PO Box 12546

Portland, Oregon 97212

Rick Williams, Principal

Owen Ronchelli, Project Manager

Figure A: NW Portland Project Study Area

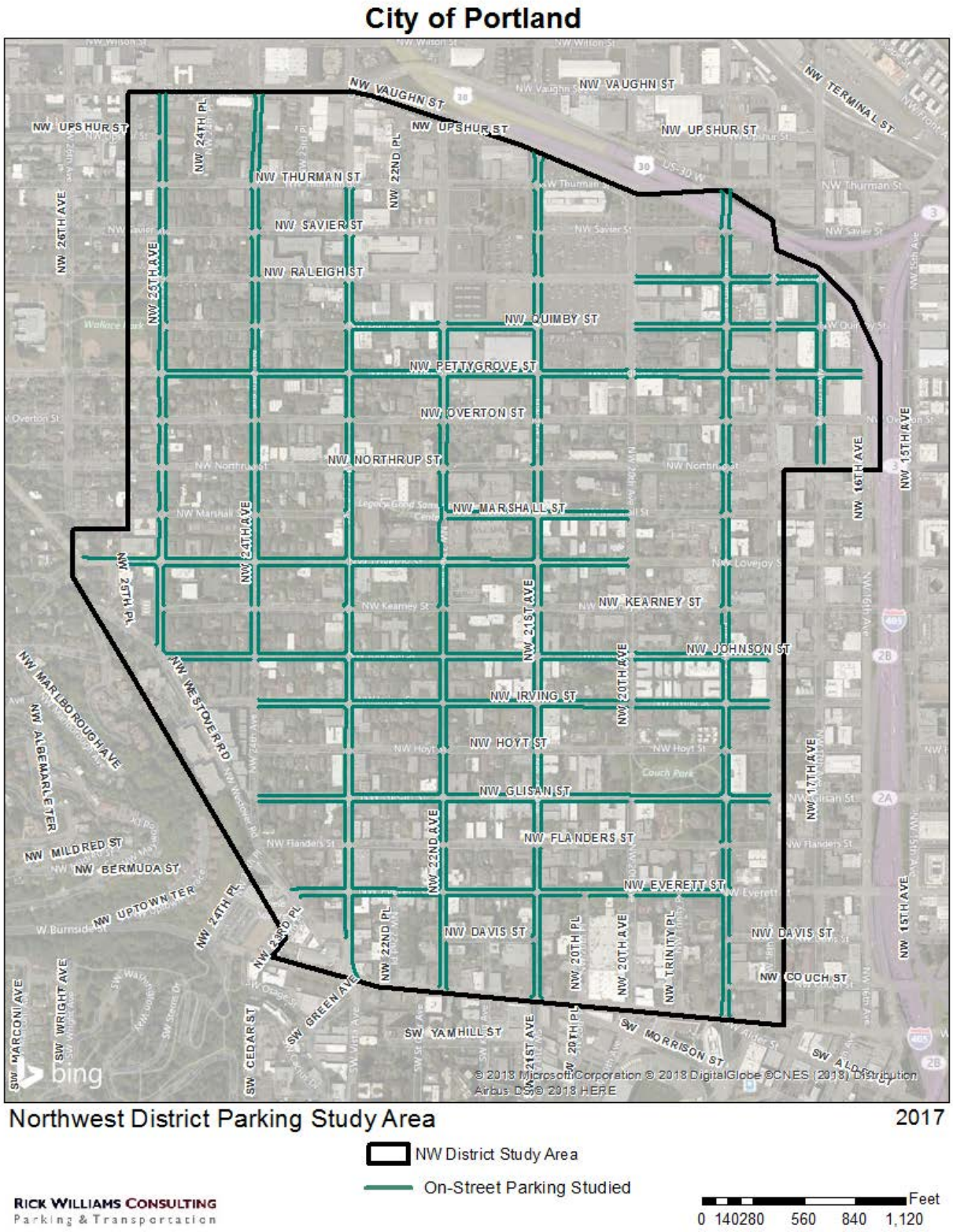


Table 1 provides a summary of all parking stall types located on the green highlighted block faces (Figure A) in the project study area. You will note that the inventory is dynamic, changing from one hour to the next. That is due to a couple of factors such as enforcement hours (9:00 AM – 7:00 PM) and combination loading zones (designated as a loading zone stall for specific hours of the day, then converts to general access stall afterward).

Table 1: 2017 NW Portland Parking Inventory by Hour

Use Type	7:00 – 9:00 AM	9:00 – 11:00 AM	11:00 AM – 1:00 PM	1:00 – 2:00 PM	2:00 – 4:00 PM	4:00 – 5:00 PM	5:00 – 6:00 PM	6:00 – 7:00 PM	7:00 – 9:00 PM
5 Minutes Signed	0	5	5	5	5	5	5	5	0
15 Minutes[1] Signed	4	18	18	18	18	14	14	14	0
30 Minutes Signed	0	10	10	10	10	10	10	10	0
30 Minutes (Metered)	0	73	73	73	73	73	73	73	0
1 Hour Signed	0	26	26	26	26	26	26	26	0
2 Hours Signed	0	53	53	53	53	53	53	53	0
2 Hours Metered	0	91	91	91	91	91	91	91	0
4 Hours (Signed)	0	117	117	117	117	117	117	117	0

[1] From 7:00 AM – 4:00 PM, there are four additional 15 Minute signed stalls. After 4:00 PM, they convert to 4 Hour - Or By Permit (OBP) stalls.

Use Type	7:00 – 9:00 AM	9:00 – 11:00 AM	11:00 AM – 1:00 PM	1:00 – 2:00 PM	2:00 – 4:00 PM	4:00 – 5:00 PM	5:00 – 6:00 PM	6:00 – 7:00 PM	7:00 – 9:00 PM
4 Hours Signed – OBP	0	492	492	492	492	496	496	498	0
4 Hours Metered	0	360	363	363	363	363	363	375	0
4 Hours Metered – OBP	0	1,348	1,360	1,359	1,361	1,370	1,371	1,371	0
ADA 2 Hours – Metered	0	1	1	1	1	1	1	1	0
ADA 4 Hours – Metered – OBP	0	3	3	3	3	3	3	3	0
No Limit[2]	2,608	12	12	12	12	12	12	13	2,649
Construction	112	112	112	112	112	112	112	112	112
Total On-Street Supply Surveyed	2,724	2,721	2,733	2,732	2,734	2,743	2,744	2,759	2,761

[2] No Limit stall totals, outside of enforcement hours (7:00 – 9:00 AM and 7:00 – 9:00 PM), differ due to Loading Zone spaces that exist at 7:00 AM, but do not continue after 7:00 PM.

Table 2 shows a more condensed summary of the hourly parking inventory by restriction type – Signed, Signed Or By Permit (OBP), Metered, Meter OBP, or (under) Construction.

Table 2: 2017 NW Portland Hourly Parking Inventory by Restriction Category (Metered vs Signed)

Use Type	7:00 – 9:00 AM	9:00 AM – 6:00 PM	6:00 – 7:00 PM	7:00 – 9:00 PM
Metered	0	525	540	0
Metered OBP	0	1,351	1,371	0
Metered (All)	0	1,876	1,911	0
Signed	4	229	225	0
Signed OBP	0	492	498	0
Signed (All)	4	721	723	0
No Limit	2,608	12	13	2,649
Construction	112	112	112	112
Total On-Street Supply Surveyed	2,724	2,721	2,759	2,761

Table 3 shows the parking inventory by stall type and percentage of the surveyed supply during the midday peak hour, 11:00 AM – 12:00 PM

Table 3: 2017 NW Portland Parking Inventory at Peak Hour (11:00 AM – 12:00 PM)

Use Type	All		Metered (All)		Signed (All)		Metered	Metered OBP	Signed	Signed OBP
	Stalls	% of Total	Stalls	% of Total	Stalls	% of Total	Stalls	Stalls	Stalls	Stalls
5 Minutes	5	< 1%	0	0%	5	< 1%	0	0	5	0
15 Minutes	18	< 1%	0	0%	18	< 1%	0	0	18	0
30 Minutes	83	3.0%	73	2.7%	10	< 1%	73	0	10	0
1 Hour	26	1.0%	0	0%	26	1.0%	0	0	26	0
2 Hours	144	5.3%	91	3.3%	53	1.9%	91	0	53	0
4 Hours	2,329	85.2%	1,720	62.9%	609	22.3%	363	1,357	117	492
ADA accessible (2 Hours)	1	< 1%	1	< 1%	0	0%	1	0	0	0
ADA accessible (4 Hours)	3	< 1%	3	< 1%	0	0%	0	3	0	0
No Limit[3]	12	< 1%	0	0%	0	0%	0	0	0	0
Construction	112	4.1%	0	0%	0	0%	0	0	0	0
On-Street Supply Studied	2,733	100%	1,888	69.1%	721	26.4%	528 (19.3%)	1,360 (49.8%)	229 (8.4%)	492 (18.0%)

[3] No Limit and Construction stalls are neither metered nor signed. Metered and signed stalls complete 95.5% of the on-street supply, leaving the rest to No Limit and Construction spaces (4.5%). Since the time of the study the No Limit stalls have been converted to stalls with parking controls.

Figure B: Hourly Parking Utilization - All Stalls

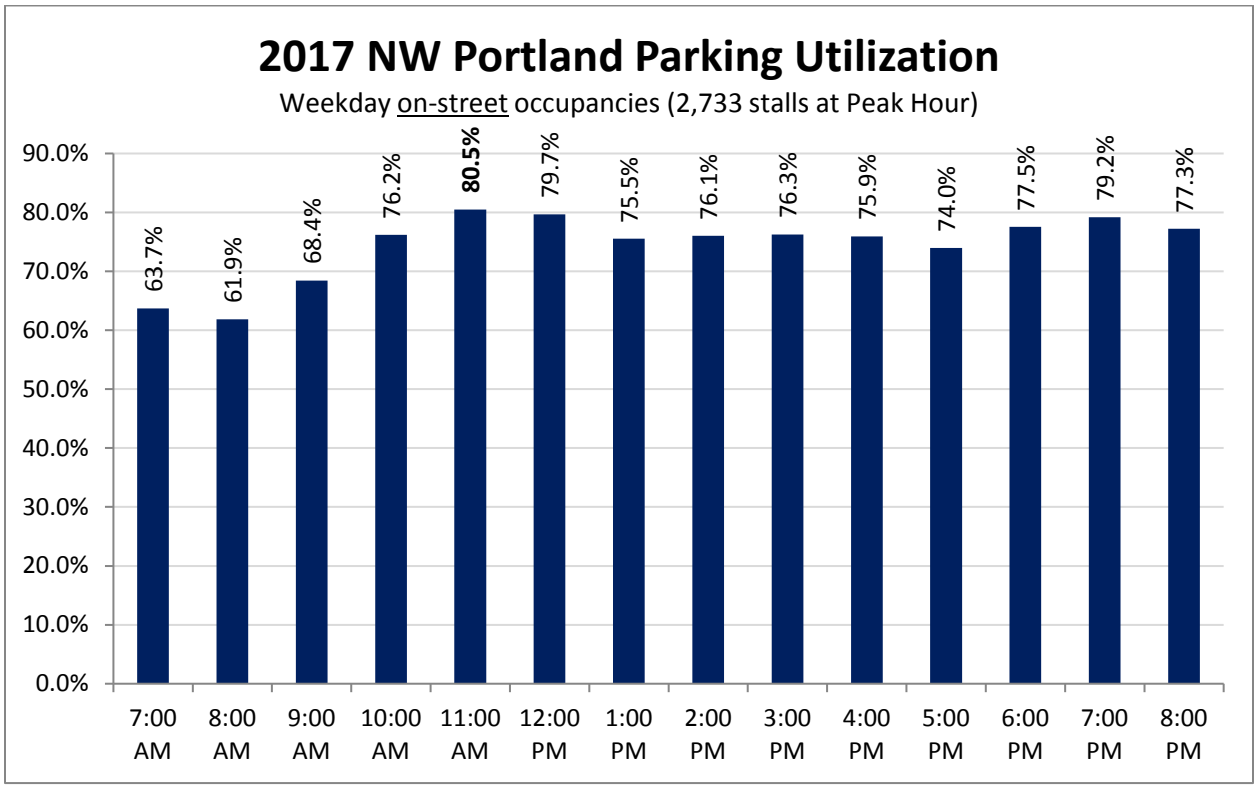


Table 4 presents parking utilization (occupancies, peak hour, average length of stay, violation rate) by stall type.

Table 4: 2017 NW Portland On-Street Parking Utilization

Use Type	Stalls[4]	Peak Occupancy Peak Hour	Stalls Available	Average Length of Stay[5]	Violation Rate[6]
On-Street Supply (All Day)	2,733	80.5% 11:00 AM – 12:00 PM	497	2h 44m	21.1%
On-Street Supply (Enforcement Hours)				3h 15m	

[4] Number of stalls for the given time stay at its peak hour.
[5] Average length of stay filtered to show non-permit users only (excluding ADA accessible and No Limit stalls).
[6] Violation rates are likely lower than reported due to the ability of users to 'plug the meter' (add additional time beyond the posted time restriction) – users can do this through the pay station or the Parking Kitty app.

Use Type	Stalls[4]	Peak Occupancy Peak Hour	Stalls Available	Average Length of Stay[5]	Violation Rate[6]
5 Minutes (Signed)	5	N/A Under Construction	N/A	N/A	N/A
15 Minutes (Signed)	14	42.9% 6:00 – 7:00 PM	8	N/A	32.0%
30 Minutes (Signed)	10	100% 11:00 AM – 12:00 PM	0	N/A	50.0%
30 Minutes (Metered)	73	64.8% 6:00 – 7:00 PM	25	N/A	37.2%
1 Hour (Signed)	26	73.1% 1:00 – 2:00 PM 6:00 – 7:00 PM	7	2h 32m	48.4%
2 Hours (Signed)	53	92.5% 10:00 – 11:00 AM	4	3h 35m	56.5%
2 Hours (Metered)	91	85.6% 6:00 – 7:00 PM	13	1h 35m	9.8%
4 Hours (Signed)	117	84.6% 12:00 – 1:00 PM	18	3h 48m	32.9%
4 Hours (Signed – OBP)	492	88.8% 11:00 AM – 12:00 PM	55	5h 35m	40.3%
4 Hours (Metered)	375	73.0% 6:00 – 7:00 PM	96	2h 13m	7.8%
4 Hours (Metered – OBP)	1,368	85.0% 6:00 – 7:00 PM	200	3h 35m	17.1%
ADA accessible (2 Hour – Signed)	1	100% Multiple	0	1h 15m	0%
ADA accessible (4 Hour – Metered – OBP)	3	66.7% 4:00 – 7:00 PM	1	3h 40m	33.3%
No Limit (Enforcement Hours)	12	100% 2:00 – 5:00 PM	0	8h 32m	N/A

Figure C: Hourly NW Portland 2017 Parking Utilization in Metered Stalls

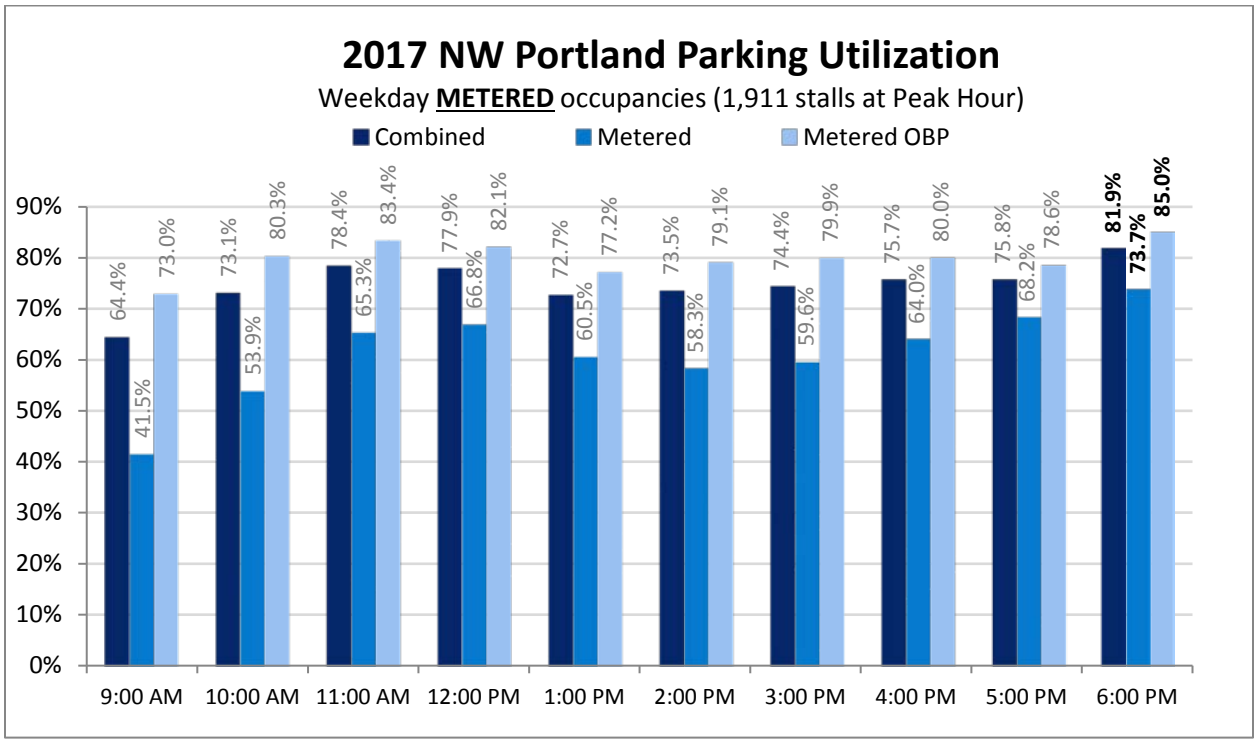


Figure D: Hourly NW Portland 2017 Parking Utilization in Metered Stalls

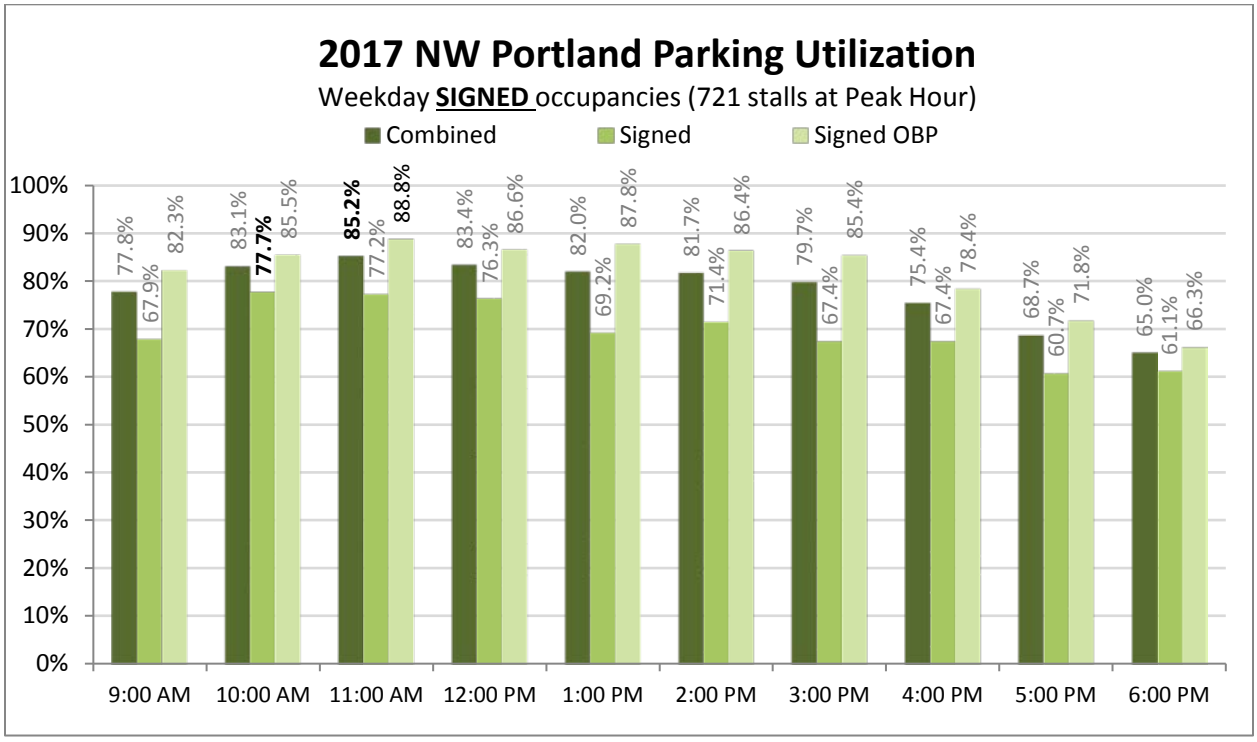


Table 5, below provides a comparison of parking metrics by time stay from the 2017 and 2016 parking studies.

Table 5: 2017 On-Street Parking Utilization Comparison by Time Stay – Enforcement Hours

Use Type	Stalls[7] Peak Occupancy (2016 Peak)	User Group	Users (2016 users)	2017 Length of Stay (2016)
2 Hours Signed	53 92.5% (90.3%)	All	49 (28)	3h 35m (1h 57m)
		Non-permit Users	38 (24)	3h 21m (1h 55m)
		Permits Displayed[8]	11 (4)	4h 52m (2h 12m)
2 Hours Metered	91 85.6% (88.6%)	All	77 (70)	1h 35m (1h 31m)
		Non-permit Users	74 (70)	1h 31m (1h 31m)
		Permits Displayed	3 (0)	4h 22m (N/A)
4 Hours Metered	375 73.0% (77.2%)	All	259 (328)	2h 13m (1h 44m)
		Non-permit Users	259 (321)	2h 13m (1h 43m)
		Permits Displayed	0 (7)	N/A (2h 47m)
4 Hours Signed OBP	492 88.8% (94.3%)	All	436 (509)	6h 13m (3h 58m)
		Non-permit Users	283 (253)	5h 35m (3h 6m)
		Permit Users	153 (256)	8h 20m (5h 16m)
4 Hours Metered OBP	1,368 85.0% (91.7%)	All	1,137 (1,649)	5h 45m (4h 29m)
		Non-permit Users	613 (297)	3h 35m (2h 32m)
		Permits Users	524 (1,352)	10h 0m (5h 16m)

[7] Number of stalls for the given time stay at its peak hour.
[8] Permits displayed in 2-Hour signed and metered stalls are not considered valid permit users. While detailed individually in this table, true average length of stay is observed only with all users.

Table 6 shows on-street parking characteristics by user group (all users, non-permit users, and parkers displaying valid permits). Findings in this table for the entire survey period, 7:00 AM to 9:00 PM, which extends both before and after the regular enforcement day (9:00 AM – 7:00 PM).

Table 6: 2017 NW Portland On-Street Parking Characteristics – All Day

Use Characteristics[9]	All Users	Non-Permit Users	Permitted & ADA
Length of Stay	3h 29m	2h 44m	6h 25m
Unique Vehicles (UV)	7,660	6,112	1,548
Vehicle Hours Parking (VHP)	26,671	16,740	9,931
Turnover Rate	2.87	3.65	1.56
UV staying ≥5 hours in time-limited stalls (% of UV)[10]		983 (12.8%)	
ADA placards observed in non-handicap designated stalls (% of occupied stalls)			7 (< 1%)
Temporary permits in time-limited stalls (% of occupied stalls)			59 (2.9%)
Residential permits in time-limited stalls (% of occupied stalls)			561 (27.4%)
Employee permits in time-limited stalls (% of occupied stalls)			252 (12.3%)

[9] Permit and ADA placards displayed based on peak hour observations (11:00 AM – 12:00 PM)
[10] Filtered for non-permit users only.

Table 7 provides parking use characteristics for the same user groups as Table 6, but limits the finding to only during the enforcement day – i.e., how well is the system performing based on the parking controls put into place.

Table 7: 2017 NW Portland On-Street Parking Characteristics - Enforced Hours (9:00 AM – 7:00 PM)

Use Characteristics	All Users	Non-Permit Users	Permitted & ADA
Length of Stay	4h 21m	3h 15m	9h 53m
Unique Vehicles (UV)	4,449	3,702	747
Vehicle Hours Parking (VHP)	19,386	12,001	7,385
Turnover Rate	2.29	3.08	1.01
Violation Rate		21.1%[11]	
Hours spent in violation		17.1%	
UV staying ≥5 hours in time-limited stalls (% of UV)[12]		798 (17.9%)	

[11] Violation rates are likely lower than reported due to the ability of users to 'plug the meter' (add additional time beyond the posted time restriction) – users can do this through the pay station or the Parking Kitty app.
[12] Filtered for non-permit users only.

Figure E: 2017 NW Portland On-Street Average Length of Stay Frequency - Enforcement Hours

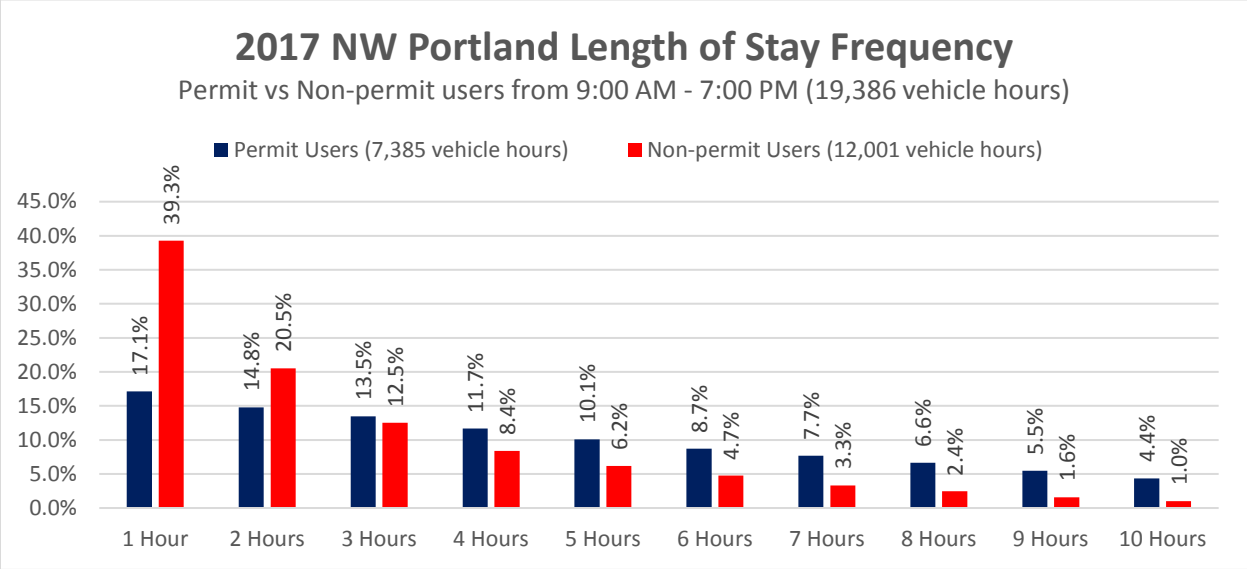


Figure E, above shows the distribution of average length of stay for two user groups – permit users and non-permit users. The table displays the percentage of total trips spread across the number of hours when they occur (frequency of length).

Table 8 shows the results of how many users move their vehicles over the course of an average weekday. In some instances users may move their vehicle from one signed stall to another in order to avoid having to pay for parking, sometimes referred to as *moving to evade*. The results do not indicate a systemic problem for vehicle movement.

Table 8: 2017 NW Portland On-Street Parking Characteristics – Vehicle Movement

Observed Vehicle Movement	All Day	Enforcement Hours (% of UV[13])
License plates observed moving to evade	419	251 (4.1%)
Total moves observed	480	294
Moves per license plate	1.1	1.2

[13] Unique Vehicles

Figure F: 2017 NW Portland Peak Hour Parking Utilization Heat Map

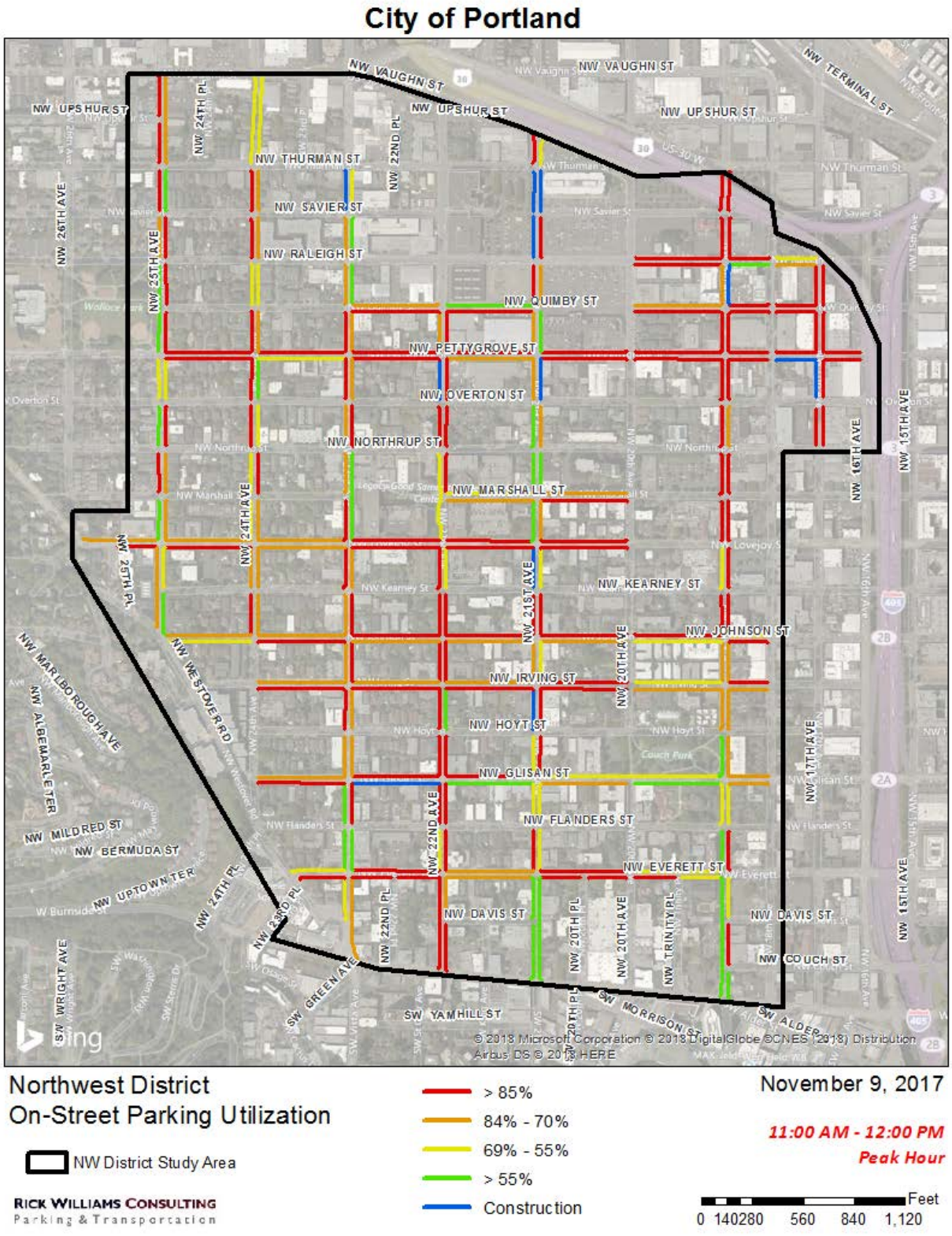


Table 9 provide a complete profile of permit use over the course of the survey day. Enforcement hours, 9:00 AM – 7:00 PM, are highlighted in the dark bordered inset. The profile is inclusive of Employee, Residential, Temporary, disabled placards (ADA) and also includes the occurrence of Carshare vehicles.

Table 9: 2017 NW Portland Parking Permit Use by Time of Day

Permit Type	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 Pm	5:00 PM	6:00 PM	7:00 PM	8:00 PM
ADA	5	5	5	7	8	9	6	8	9	9	6	3	4	4
Temporary	61	61	57	57	59	51	43	47	45	45	41	41	44	42
Carshare	10	8	5	7	9	7	5	5	4	4	5	3	4	3
Residential	653	611	579	565	562	530	517	544	537	535	501	506	484	479
Employee	89	126	191	232	252	249	238	244	224	196	153	100	78	58
Total	818	811	837	868	890[14]	846	809	848	819	789	706	653	614	586
Stalls Occupied	1,630	1,569	1,733	1,928	2,049	2,029	1,922	1,937	1,941	1,941	1,897	2,011	2,069	2,017
% of Occupied stalls	50.2%	51.7%	48.3%	45.0%	43.4%	41.7%	42.1%	43.8%	42.2%	40.6%	37.2%	32.5%	29.7%	29.1%

[14] Of the 890 permits and ADA placards observed from 11:00 AM – 12:00 PM, 74 were displayed at invalid locations (Non-Or By Permit stalls).

Figure G: NW Portland Percent of Parking Permit Utilization by Type

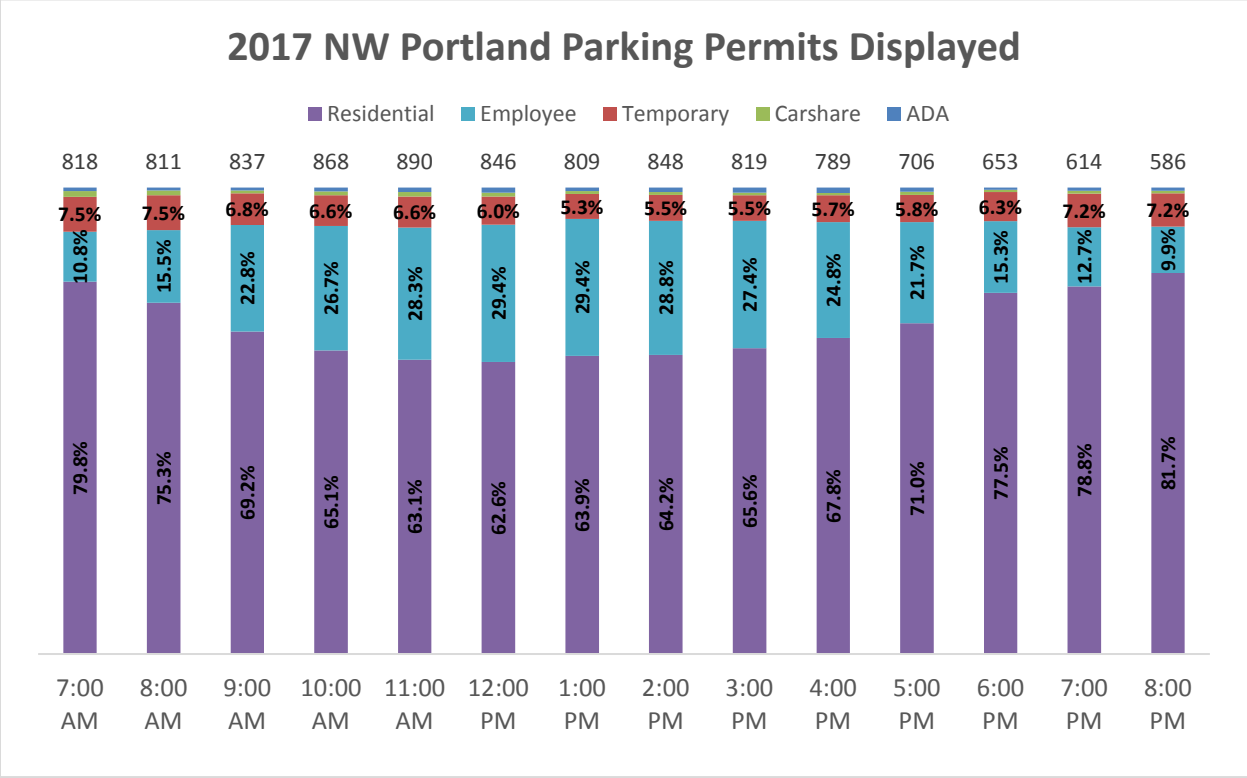
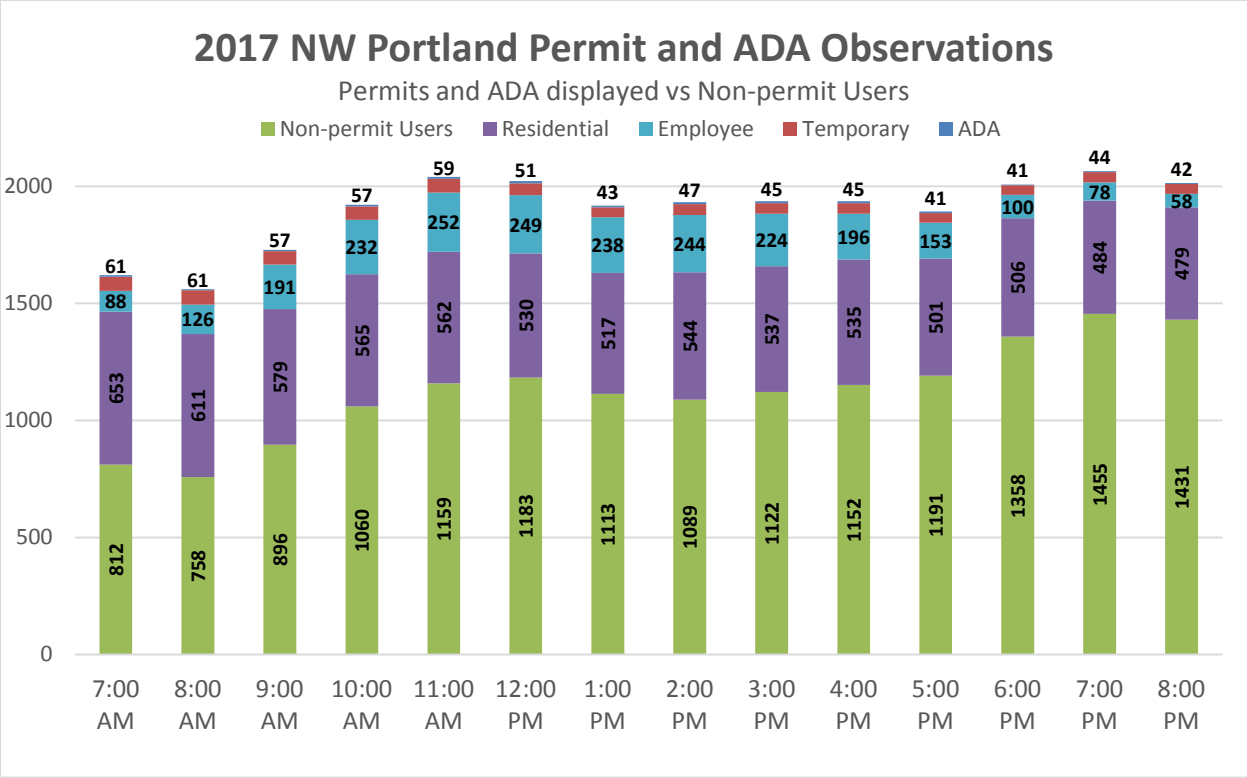


Figure H: NW Portland Hourly Parking Permit Utilization as a Portion of Total Occupied Stalls



Appendix: Additional Information Resources

Figure I: 2017 NW Portland Peak Hour Parking Utilization Heat Map (w/o street name layer)

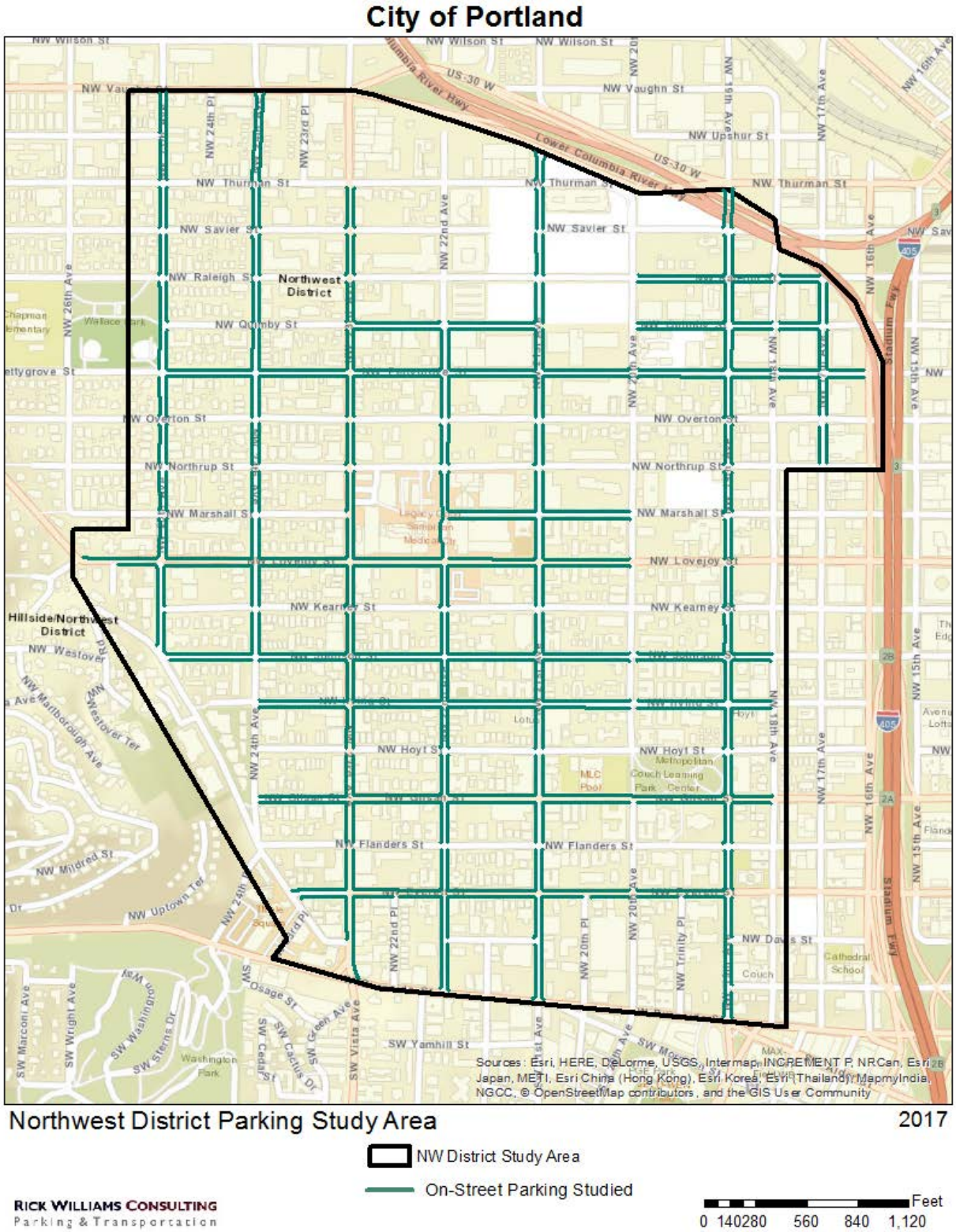


Table 10: 2017 NW Portland Hourly Parking Inventory by Combined Stall Type

Use Type	7:00 – 9:00 AM	9:00 – 11:00 AM	11:00 AM – 1:00 PM	1:00 – 2:00 PM	2:00 – 4:00 PM	4:00 – 5:00 PM	5:00 – 6:00 PM	6:00 – 7:00 PM	7:00 – 9:00 PM
30 Minutes	0	83	83	83	83	83	83	83	0
2 Hours	0	144	144	144	144	144	144	144	0
4 Hours (All Signed)	0	609	609	609	609	613	613	615	0
4 Hours (All Metered)	0	1,708	1,720	1,719	1,721	1,730	1,731	1,743	0
4 Hours (All)	0	2,317	2,329	2,328	2,330	2,343	2,344	2,358	0
ADA accessible	0	4	4	4	4	4	4	4	0
No Limit	2,608	12	12	12	12	12	12	13	2,649
Unknown (Construction)	112	112	112	112	112	112	112	112	112
On-Street Supply Studied	2,724	2,721	2,733	2,732	2,734	2,743	2,744	2,759	2,761

Table 11: 2017 NW Portland On-Street Parking Utilization by Combined Stall Type

Use Type	Stalls[15]	Peak Occupancy Peak Hour	Stalls Available	Average Length of Stay[16]	Violation Rate[17])
On-Street Supply (All Day)	2,733	80.5% 11:00 AM – 12:00 PM	497	2h 44m	21.1%
On-Street Supply (Enforcement Hours)				3h 15m	
30 Minutes	83	66.7% 6:00 – 7:00 PM	27	N/A	39.0%
2 Hours	144	80.4% 12:00 – 1:00 PM	28	2h 3m	20.5%
4 Hours (All Signed)	609	87.8% 11:00 AM – 12:00 PM	74	5h 1m	38.4%
4 Hours (All Metered)	1,743	82.5% 6:00 – 7:00 PM	296	2h 59m	14.0%
4 Hours (All)	2,329	82.1% 11:00 AM – 12:00 PM	404	3h 30m	19.8%
ADA accessible	4	75.0% 6:00 – 7:00 PM	1	2h 17m	14.3%

[15] Number of stalls for the given time stay at its peak hour.
[16] Average length of stay filtered to show non-permit users only (excluding ADA accessible stalls).
[17] Unique Vehicles

Table 12: 2017 NW Portland On-Street Parking Utilization by Restriction

Use Type	Stalls[18]	Peak Occupancy Peak Hour	Stalls Available	Average Length of Stay[19]	Violation Rate
On-Street Supply (All Day)	2,733	80.5% 11:00 AM – 12:00 PM	497	2h 41m	21.1%
On-Street Supply (Enforcement Hours)				3h 15m	
Metered	540	73.7% 6:00 – 7:00 PM	136	2h 3m	11.3%
Metered (Or by Permit)	1,371	85.0% 6:00 – 7:00 PM	201	3h 35m	17.1%
Metered (All)	1,911	81.9% 6:00 – 7:00 PM	337	2h 45m	14.5%
Signed	229	77.7% 10:00 – 11:00 AM	50	3h 27m	42.2%
Signed (Or by permit)	492	88.8% 11:00 AM – 12:00 PM	55	5h 35m	40.3%
Signed (All)	721	85.2% 11:00 AM – 12:00 PM	106	4h 34m	41.0%

[18] Number of stalls for the given time stay at its peak hour.
[19] Average length of stay filtered to show non-permit users only (excluding ADA accessible stalls).

Figure J: 2017 NW Portland Peak Hour Parking Utilization Heat Map (w/o street name layer)