

TECHNICAL MEMORANDUM

Project: Columbia City Parking Management Program

Subject: Parking Demand Surveys

Date: November 29, 2016

Author: Julie A. Bussing
Marni C. Heffron, P.E., P.T.O.E.

The Seattle Department of Transportation (SDOT) is active in Columbia City through the Community Access and Parking Program. This effort includes documenting parking conditions in the neighborhood and developing parking management changes. This memorandum summarizes the findings of parking surveys performed in Columbia City in July 2016 and October 2016. The July survey provided an overview of parking utilization on block faces with unrestricted parking or a Restricted Parking Zone (RPZ) and included a review of off-street parking demand within the study area. The follow-on survey in October collected additional detail related to residential and non-residential use of unrestricted block faces east of Rainier Ave S. Additional parking studies have been completed and are posted on the project website at http://www.seattle.gov/transportation/parking/cp_ColumbiaCity.htm.

This memorandum presents the methodology for parking data collection, summarizes utilization of on-street and off-street parking, identifies how RPZ permits are utilized, and evaluates non-resident parking east of Rainier Ave S. A comparison of the existing on-street parking utilization to on-street parking data collected in 2012 is also provided. Detailed data collected for this study are available in the Appendix.

1. Parking Utilization Survey

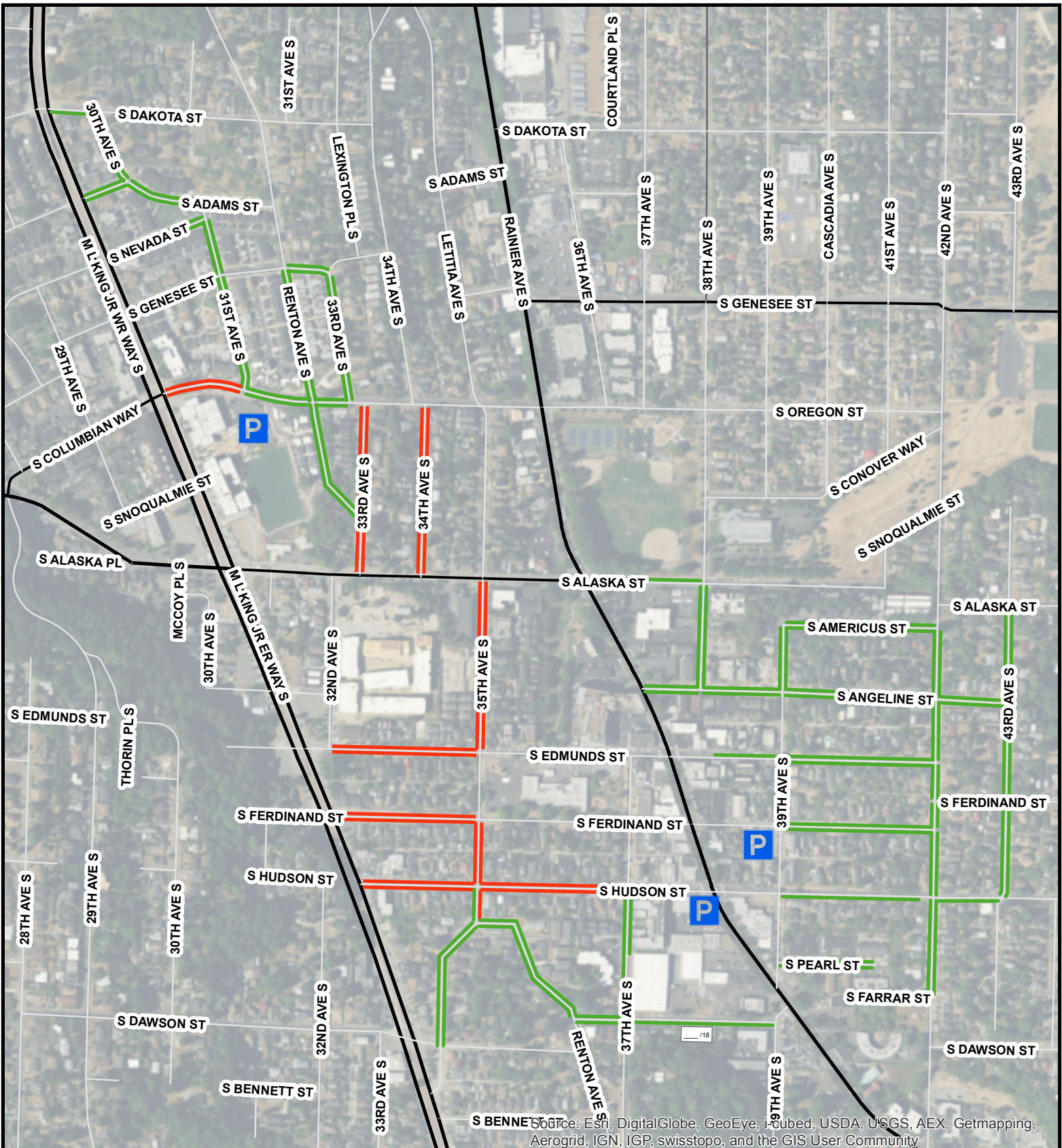
1.1. Study Area and Parking Supply

Figure 1 shows the study area for the Columbia City Parking Survey. The boundaries are S Dakota St to the north, S Dawson St to the south, MLK Jr Wy S to the west and 43rd Ave S to the east. The study area included block faces with no parking restrictions and block faces in Restricted Parking Zones (RPZ). For non-permit holders, the RPZs have a 2-hour time limit between the hours of 7:00 A.M. and 6:00 P.M. Monday through Friday. The study area also included three public surface parking lots. Load/Unload, designated disabled, and time-limited spaces were excluded from the supply and subsequent demand counts. The number of block faces and corresponding on-street spaces are listed below:

- Block faces in RPZs: 21 block faces with 317 parking spaces (25% of study area spaces)
- Block faces with unrestricted parking: 80 block faces with 937 parking spaces (75% of spaces)




The study area surface lots have a total of 145 parking spaces. The location of the three off-street lots and number of parking spaces per lot are listed below:

- Columbia City Parking at S Ferdinand St/39th Ave S - 62 spaces
- Boys and Girls Club at S Oregon St/31st Ave S - 76 spaces
- Lot at S Hudson St/Rainier Ave S - 7 spaces.





Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

-  Public Parking Lot
-  Restricted Parking Zone
-  Unrestricted Parking



0 0.025 0.05 0.075 0.1 Miles

©2012, THE CITY OF SEATTLE. All rights reserved. Produced by the Seattle Department of Transportation. No warranties of any sort, including accuracy, fitness or merchantability, accompany this product.

Coordinate System: State Plane, NAD83-91, Washington, North Zone
 Orthophoto Source: Pictometry 2007

PLOT DATE : 9/15/2016
 AUTHOR : J Williams
 V: Parking / Comm Parking / CC / Maps

Fig 1 - Columbia City Study Area for Parking Demand Surveys

The study included a survey of vehicles with RPZ permits. Since Columbia City is located in a Southeast Seattle light rail RPZ area, employees in the area, in addition to the local residents, can obtain RPZ permits.

1.2. Methodology

The parking utilization surveys were conducted on Tuesday July 19, 2016 and Thursday July 21, 2016. On-street parking demand data were collected for six time periods:

- 5:00 to 7:00 A.M.
- 9:00 to 11:00 A.M.
- 1:00 to 3:00 P.M.
- 3:00 to 5:00 P.M.
- 5:00 to 7:00 P.M.
- 7:00 to 9:00 P.M.

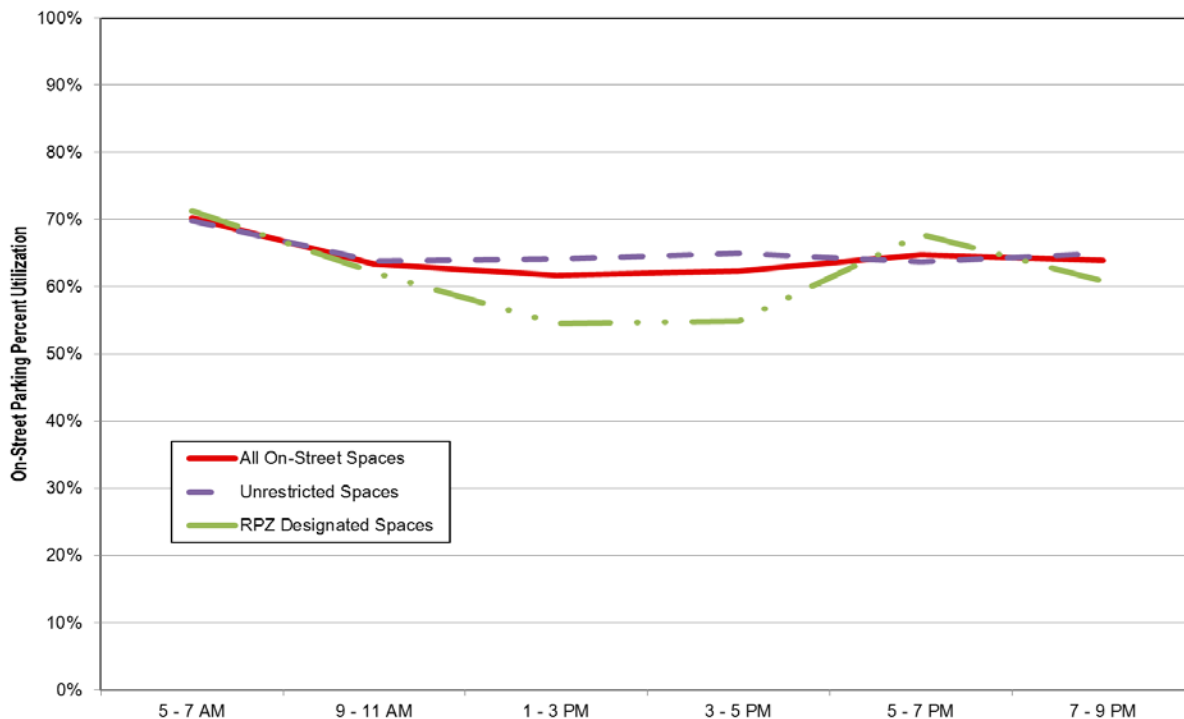
The 16-hour time span included times when most residents would likely be parked: before 7:00 A.M. and after 7:00 P.M. It also covered the time period when the RPZ restrictions are in affect: 7:00 A.M. to 6:00 P.M.

Demand data for vehicles with RPZ permits were collected for 12 of the 21 RPZ block faces. Parking demand data at the off-street lots were collected on Tuesday July 19, 2016 from 6:00 to 7:00 P.M. and Thursday, July 21, 2016 from 11:00 A.M. to 12:00 P.M.

1.3. On-Street Parking Demand and Utilization Results

Figure 2 shows the parking utilization in the study area for all on-street block faces over the six time periods. The highest utilization occurred between 5:00 and 7:00 A.M. During that time period, the utilization rate was 70% for block faces with unrestricted parking and 71% along block faces located in RPZs. Between the hours of 9:00 A.M. and 7:00 P.M., the utilization rates along the unrestricted spaces remained relatively constant with utilization rates of 64% and 65%. The utilization rate along block faces located in RPZs fluctuated between 55% and 68%. In aggregate, the data show that parking was available, but occupancy varied widely by individual block face.

Figure 2. Parking Utilization along Study Area Block Faces



Source: Heffron Transportation, Inc., Counts performed Tuesday, July 19, and Thursday, July 21, 2016.

Table 1 provides information on individual block face occupancies, measured by their peak parking occupancy between 9:00 A.M. and 7:00 P.M. These hours roughly cover the time period when the RPZs are in effect. Figure 3 shows the maximum utilization experienced by each block face between 9:00 A.M. and 7:00 P.M. At utilization rates of 90% or greater, motorists cannot easily locate available parking spaces, and SDOT generally considers unrestricted block faces with utilization rates of 75% or greater as qualifying for RPZ expansion.

Table 1. On-Street Parking Utilization, 9 AM to 7 PM

Block face Type	Number of Block Faces	Number of Block Faces by Parking Utilization Rates (9 AM – 7 PM)			
		0 – 49%	50 – 74%	75 – 90%	91% or greater
Unrestricted Parking	80	17	19	19	25
Restricted Parking Zone	21	3	4	7	7
Total	101	20	23	26	32

Source: Heffron Transportation, Inc., Counts performed Tuesday, July 19, and Thursday, July 21, 2016.

The survey of RPZ block faces also noted parked vehicles that displayed RPZ permits. The survey indicated that RPZ permit holders occupied 52% to 55% of the spaces along block faces with RPZ restrictions between the hours of 9:00 A.M. and 7:00 P.M.

1.4. Off-Street Parking Utilization Results

Table 2 shows the parking utilization results for the three surface parking lots. Midday (between 11:00 A.M. and 12:00 P.M.), the highest utilization occurred at the Boys and Girls Club parking lot when 55% of the spaces were occupied. In the evening (between 6:00 and 7:00 P.M.), the highest utilization rate occurred at the Columbia City Parking lot when 60% of the spaces were occupied.

Table 2. Off-Street Parking Utilization

Parking Lots	Location	Number of Spaces	Parking Utilization			
			11:00 A.M. – 12:00 P.M. ^a		6:00 – 7:00 P.M. ^b	
			% Utilized	Unused Spaces	% Utilized	Unused Spaces
Columbia City Parking	S Ferdinand St/39 th Ave S	62	31%	43	60%	25
Boys and Girls Club	S Oregon St/31 st Ave S	76	55%	34	33%	51
Surface Lot	S Hudson St/Rainier Ave S	7	43%	4	29%	5
Total		145	44%	81	44%	81

Source: Heffron Transportation, Inc., July 2016.

a. Data collected on Thursday, July 21, 2016

b. Data collection on Tuesday, July 19, 2016

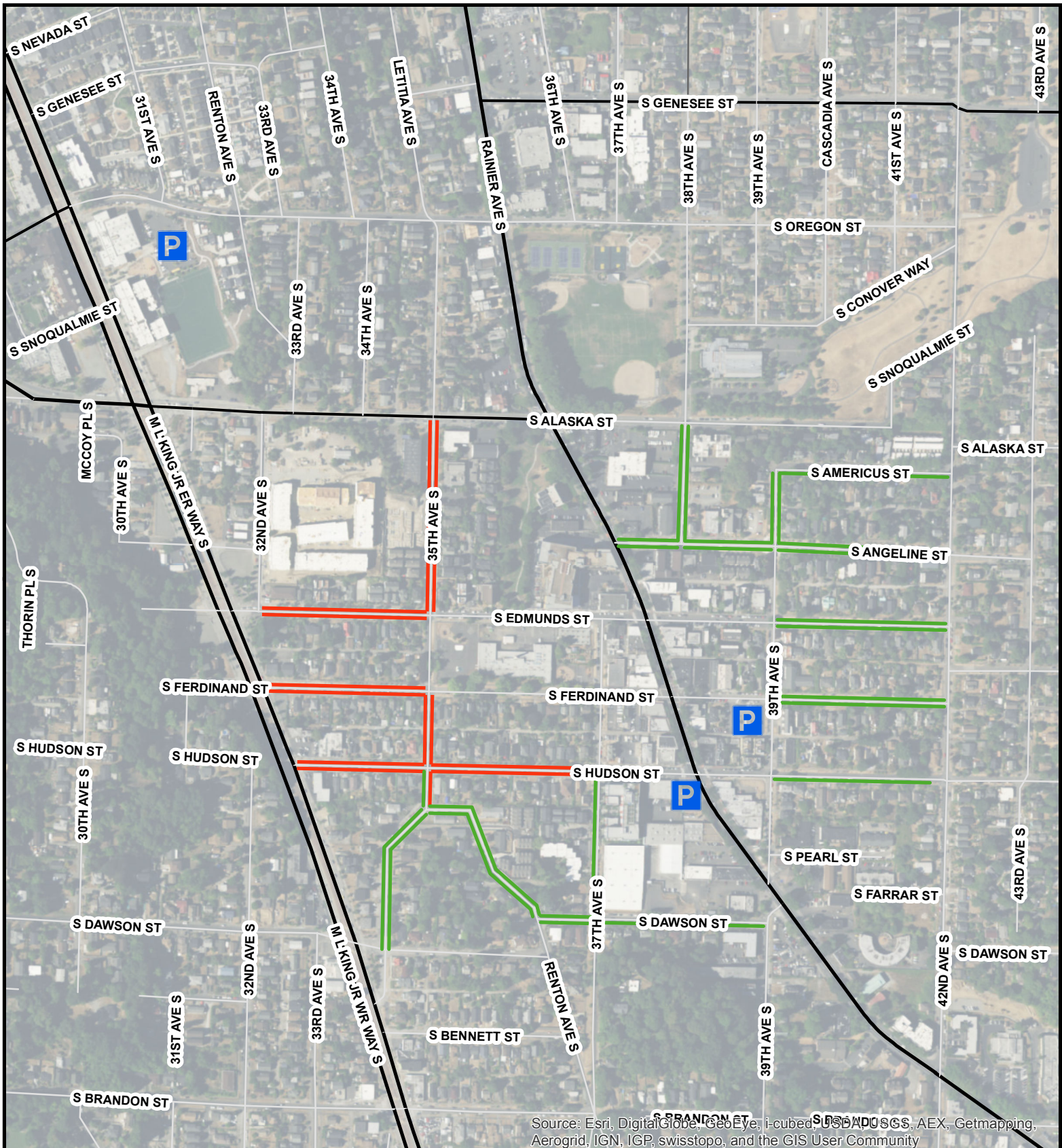
2. Comparison of 2012 and 2016 Parking Surveys

The 2016 on-street parking data were compared to data collected along block faces in the area in 2012 as part of the LINK light rail hide-and-ride on-street parking study.¹ Figure 4 identifies the block faces included in the comparison for the two time periods.

In 2012, some areas north of S Oregon St and east of MLK Jr Way S and along the west side of Renton Avenue south of S Oregon Street were under construction. To account for any impacts to parking due to the construction, streets north of S Alaska St were not included in the comparison. Block faces east of and along 42nd Ave S were not included in the 2012 study. In the 2016 study, three block faces included segments with unrestricted spaces and time-limited spaces. Since demand was reported for the entire length of those block faces for the 2012 study and did not distinguish the demand by type of space, those block faces were not included in the comparison. The 2012 parking data were collected between 9:00 and 11:00 A.M. and 1:00 and 3:00 P.M., thus the data for both years are compared for those two time periods.

Table 3 compares the 2012 parking demand and the recent 2016 parking demand for identical block faces. As shown, demand increased by 36% during the morning peak period and by 40% during the afternoon peak period. Along block faces with no restrictions, the greatest increase in demand was 43% and occurred between 1:00 and 3:00 P.M. Along block faces in RPZs, the greatest increase in demand was 53% and occurred between 9:00 and 11:00 A.M. Details for the individual block faces are included in the Appendix.

¹ “Light Rail Station Area Parking Monitoring for 2012”, Heffron Transportation, Inc., December 10, 2012.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

P Public Parking Lot

Parking Type

- Restricted Parking Zone
- Unrestricted Parking

Fig 4 - Block Faces Included in 2012 and 2016 Parking Demand Comparison

0 0.025 0.05 0.075 0.1 Miles

©2012, THE CITY OF SEATTLE. All rights reserved. Produced by the Seattle Department of Transportation. No warranties of any sort, including accuracy, fitness or merchantability, accompany this product.

Coordinate System: State Plane, NAD83-91, Washington, North Zone
 Orthophoto Source: Pictometry 2007

PLOT DATE : 10/11/2016
 AUTHOR : J Williams
 V: Parking / Comm Parking / CC / Maps

Table 3. Comparison of 2012 and 2016 Parking Utilization

Parking Restriction	Number of Block Faces	Number of Parking Spaces ^a	Change in Parking Demand					
			9:00-11:00 A.M.			1:00-3:00 P.M.		
			2012 Demand	2016 Demand	% Change	2012 Demand	2016 Demand	% Change
Unrestricted Block Faces	25	378	210	271	29%	203	291	43%
RPZ Block Faces	13	216	90	138	53%	93	123	32%
All Block Faces	41	594	300	409	36%	296	414	40%

Source: Heffron Transportation, Inc., July 2016.

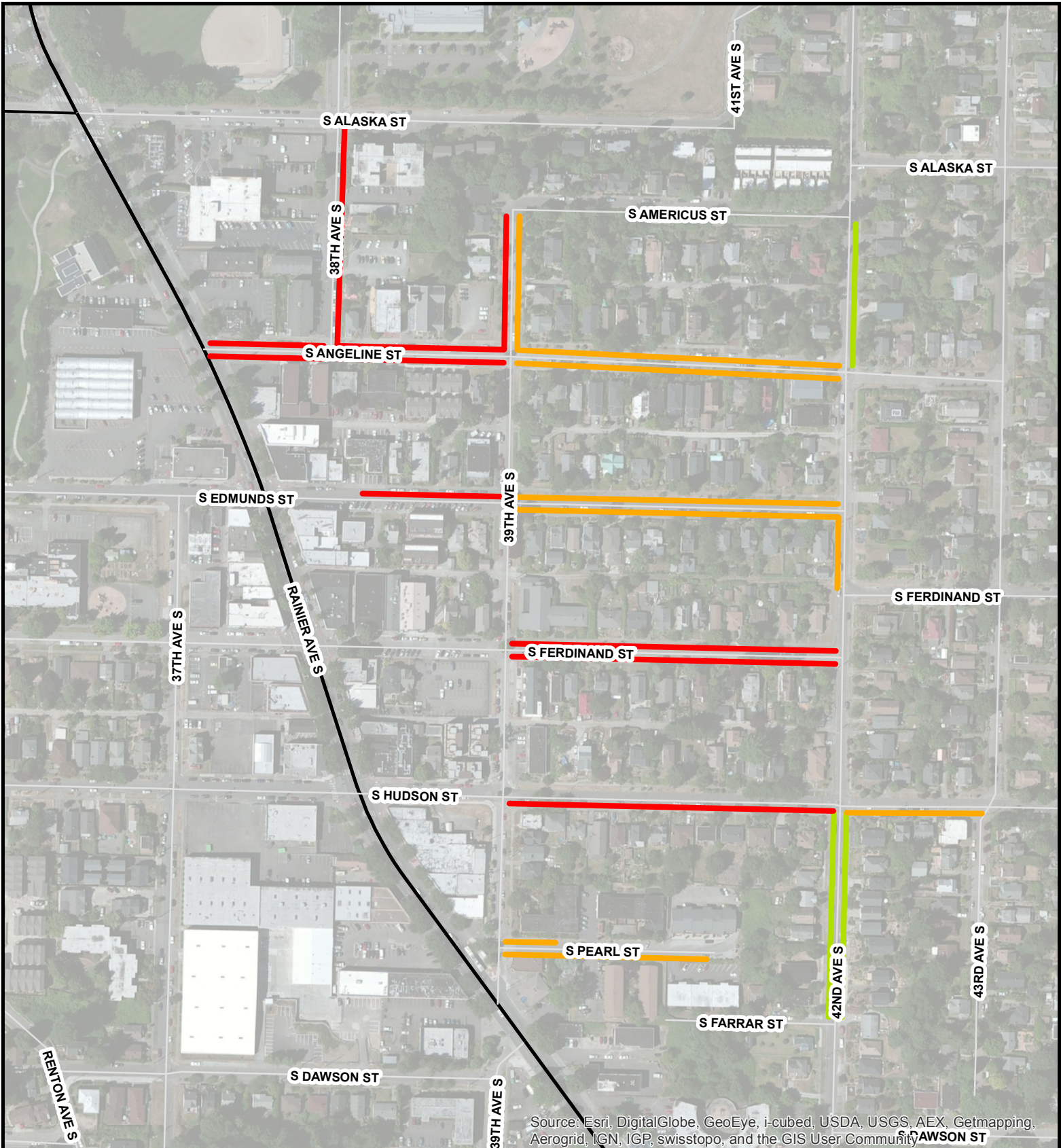
a. Number of parking spaces did not change between 2012 and 2016.

3. Non-Residential Parking Utilization Survey East of Rainier Ave S

Based on the July 2016 parking survey, it was determined that many of the unrestricted block faces east of Rainier Ave S experienced utilization rates of 75% or greater for at least one hour between 9:00 A.M. and 7:00 P.M. SDOT generally considers unrestricted block faces with utilization rates of 75% or greater and non-resident parking utilization rates of 35% or greater as qualifying for RPZ expansion. The follow-on study performed in October evaluated the parking utilization rates by non-residents. The study area east of Rainier Ave S included 23 block faces with a total supply of 327 on-street parking spaces.

Parking data were collected on two consecutive Wednesdays—October 5, and October 12, 2016—for three time periods (before 5:30 A.M., 10:00 A.M. and 3:00 P.M.). License plate numbers for vehicles parked in each on-street space were collected for each time period. Vehicles parked in disabled-person and load zone spaces were not included. All vehicles parked prior to 5:30 A.M. were assumed to belong to residents. These data were the basis for identifying resident versus non-resident vehicles for the other two time periods. The analysis counted resident vehicles that may have moved to another block after 5:30 A.M.

Table 4 summarizes the result of the license plate survey for the two study days. As shown, the average utilization rate for all vehicles was greater than 75% for all time periods. At 10:00 A.M., about 46% of all vehicles parked were non-residents; at 3:00 P.M. the non-resident vehicles accounted for 51% of all vehicles parked. Figure 5 shows the highest parking utilization during 10:00 A.M. and 3:00 P.M. observations, which match times when parking regulations might be put in place. Figure 6 shows the highest non-residential vehicle percentage during 10:00 A.M. and 3:00 P.M. observations.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend	
	More than 90%
	75% - 90%
	50% - 74%
	Less than 50%

Fig 5 - Block Face Maximum Parking Occupancy, 10 AM and 3 PM

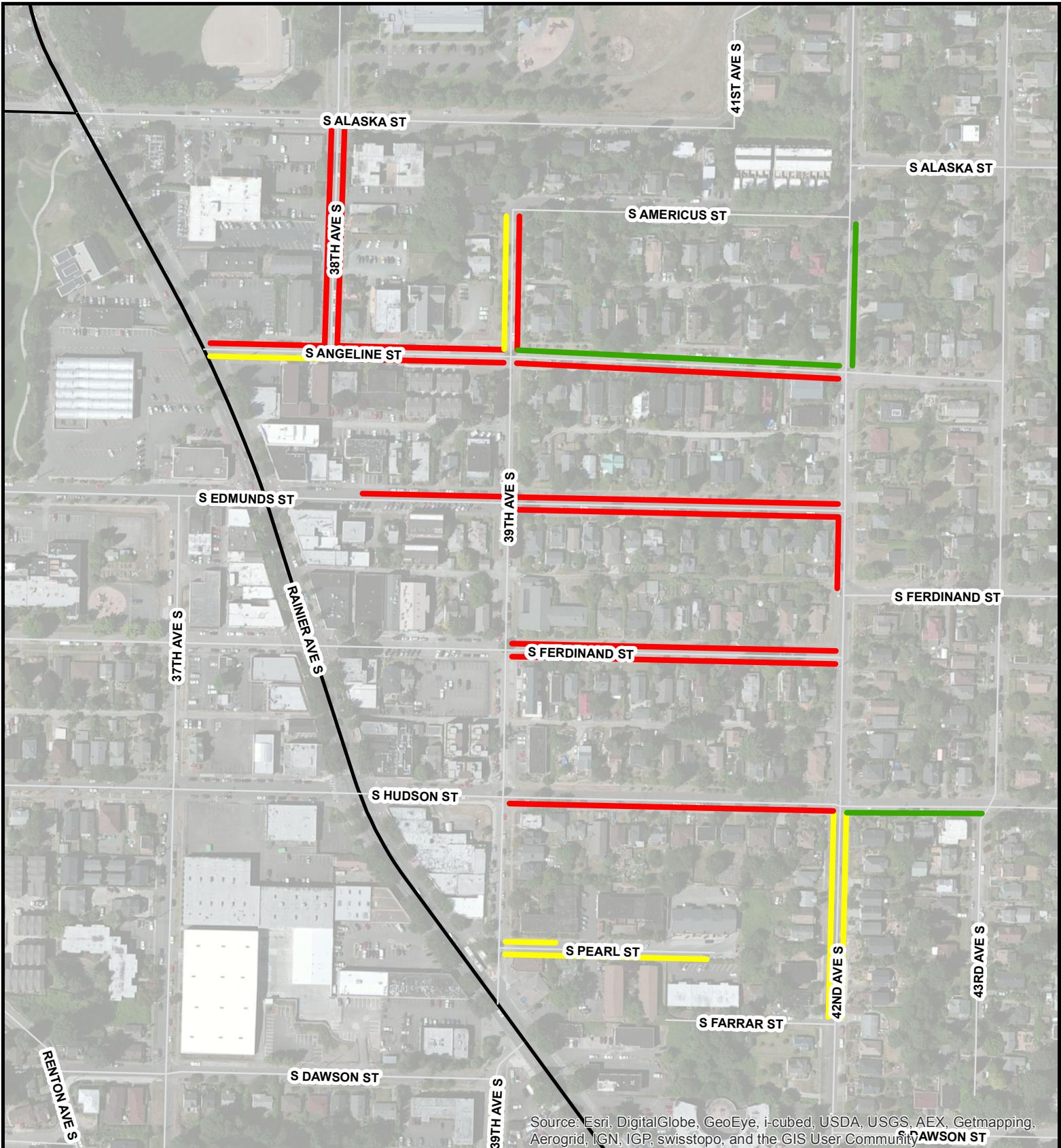


0 0.01 0.02 0.03 0.04 Miles

©2012, THE CITY OF SEATTLE. All rights reserved. Produced by the Seattle Department of Transportation. No warranties of any sort, including accuracy, fitness or merchantability, accompany this product.

Coordinate System: State Plane, NAD83-91, Washington, North Zone
 Orthophoto Source: Pictometry 2007

PLOT DATE : 11/22/2016
 AUTHOR : J Williams
 V: Parking / Comm Parking / CC / Maps



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

Maximum Non-Residential

- Less than 35%
- 35% - 50%
- More than 50%

Fig 6 - Block Face Maximum Non-Residential %, 10 AM and 3 PM



0 0.01 0.02 0.03 0.04 Miles

SDOT
Seattle Department of Transportation

©2012, THE CITY OF SEATTLE.
All rights reserved. Produced by the
Seattle Department of Transportation.
No warranties of any sort, including accuracy, fitness
or merchantability, accompany this product.

Coordinate System: State Plane,
NAD83-91, Washington, North Zone
Orthophoto Source: Pictometry 2007

PLOT DATE : 11/22/2016
AUTHOR : J Williams
V: Parking / Comm Parking / CC / Maps

Table 4. Parking Spaces Utilized by Non-Residents east of Rainier Ave S

Date	Number of Available Parking Spaces	Time Period											
		Prior to 5:30 A.M.				10:00 A.M.				3:00 P.M.			
		Total Demand	% Utilization for All Vehicles	Demand Non-Residents	% Non-Residents	Total Demand	% Utilization for All Vehicles	Demand Non-Residents ^a	% Non-Residents ^b	Total Demand	% Utilization for All Vehicles	Demand Non-Residents ^a	% Non-Residents ^b
Wednesday: Oct 5, 2016	327	258	79%	0	0%	260	80%	112	43%	277	85%	147	53%
Oct 12, 2016	327	255	78%	0	0%	268	82%	118	44%	274	84%	135	49%
Average	327	257	79%	0	0%	264	81%	116	44%	276	84%	141	51%

Source: Heffron Transportation, Inc., October 2016.

a Demand by non-residents was determined from license plate surveys that compared vehicles parked at 10:00 a.m. and 3:00 p.m. to those that were parked prior to 5:30 a.m. It includes resident vehicles that may have changed from one block to another.

b Percent of total demand during the hour by non-resident vehicles.

4. Findings

- Overall parking utilization of both unrestricted block faces and block faces in RPZs remained fairly constant between the hours of 9:00 A.M. to 7:00 P.M. The utilization rates for unrestricted spaces were 64% and 65% during that time period. The utilization rates along block faces in RPZs varied between 55% and 68%.
- Between 9:00 A.M. and 7:00 P.M., 24 block faces in the unrestricted areas experienced utilization rates greater than 75% for six or more hours per day. Thirteen of those block faces (approximately 16% of the total) experienced utilization rates between 75 and 90% and 11 of those block faces, (approximately 14% of the total) experienced utilization rates of 91% or greater.
- The percentage of vehicles with permits parked along block faces in RPZs between 9:00 A.M. and 7:00 P.M. varied between 52% and 55%.
- There has been an increase in parking demand since 2012. There was an overall increase of 36% in parking demand in the morning and an increase of 40% in parking demand in the afternoon. Along block faces with no restrictions, the greatest increase in demand was 43% and occurred between 1:00 and 3:00 P.M. Along block faces in RPZs, the greatest increase in demand was 53% and occurred between 9:00 and 11:00 A.M.
- East of Rainier Ave S, the average parking utilization rates for all parked vehicles was over 75% for all study time periods. Parking by non-resident vehicles represented about 44% of the total demand in the morning and 51% of the total demand in the afternoon.

APPENDIX

Project Columbia City Parking Study

Notes: On-Street Parking Demand Counts conducted in July 2016

ELMNTKEY	UNITDESC	SIDE	PARKING_CA	Supply	Adjusted Supply ^a	Dates of Data Collection					
						Thursday July 21, 2016		Tuesday July 19, 2016			
						5 - 7 AM	9 - 11 AM	1 - 3 PM	3 - 5 PM	5 - 7 PM	7 - 9 PM
64818	S DAKOTA ST BETWEEN M L KING JR ER WAY S AND 30TH W AVE S	S	Unrestricted Parking	5	5	6	6	5	5	5	6
128349	30TH AVE S BETWEEN S DAKOTA W ST AND S ADAMS ST	SW	Unrestricted Parking	10	9	7	9	7	4	7	8
128348	30TH AVE S BETWEEN S DAKOTA W ST AND S ADAMS ST	NE	Unrestricted Parking	9	0	0	0	0	1	0	0
128331	S ADAMS ST BETWEEN M L KING JR ER WAY S AND 30TH AVE S	N	Unrestricted Parking	4	4	4	4	4	2	3	3
128332	S ADAMS ST BETWEEN M L KING JR ER WAY S AND 30TH AVE S	S	Unrestricted Parking	6	6	5	5	4	5	5	6
128334	S ADAMS ST BETWEEN 30TH AVE S AND 31ST AVE S	N	Unrestricted Parking	11	11	7	2	1	2	3	3
128335	S ADAMS ST BETWEEN 30TH AVE S AND 31ST AVE S	S	Unrestricted Parking	14	14	7	5	6	8	7	7
128337	S NEVADA ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	N	Unrestricted Parking	15	15	13	12	9	11	9	9
128338	S NEVADA ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	S	Unrestricted Parking	16	16	13	10	10	10	11	11
128340	S GENESEE ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	NW	Unrestricted Parking	15	15	13	13	12	12	13	13
128341	S GENESEE ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	SE	Unrestricted Parking	12	14	16	12	11	12	11	13
20317	S GENESEE ST BETWEEN RENTON AVE S AND 33RD AVE S	N	Unrestricted Parking	1	1	0	0	0	0	0	0
20318	S GENESEE ST BETWEEN RENTON AVE S AND 33RD AVE S	S	Unrestricted Parking	3	3	0	0	0	0	0	0
128355	31ST AVE S BETWEEN S NEVADA ST AND S GENESEE ST	W	Unrestricted Parking	9	9	8	5	4	4	3	4
128354	31ST AVE S BETWEEN S NEVADA ST AND S GENESEE ST	E	Unrestricted Parking	9	9	5	4	1	1	2	3
128358	31ST AVE S BETWEEN S GENESEE ST AND S OREGON ST	W	Unrestricted Parking	18	18	18	13	13	14	14	12
128357	31ST AVE S BETWEEN S GENESEE ST AND S OREGON ST	E	Unrestricted Parking	19	19	17	13	16	15	15	12
12497	RENTON AVE S BETWEEN S GENESEE ST AND S OREGON E ST	W	Unrestricted Parking	22	22	13	14	11	10	11	12
12498	RENTON AVE S BETWEEN S GENESEE ST AND S OREGON E ST	E	Unrestricted Parking	16	16	10	14	8	8	7	7
50493	33RD AVE S BETWEEN S GENESEE ST AND S OREGON W ST	W	Unrestricted Parking	26	26	16	10	10	9	9	14
50494	33RD AVE S BETWEEN S GENESEE ST AND S OREGON W ST	E	Unrestricted Parking	10	10	10	9	12	14	13	14
21285	S OREGON ST BETWEEN 31ST AVE S AND RENTON AVE S	N	Unrestricted Parking	6	6	5	4	4	5	4	3
21286	S OREGON ST BETWEEN 31ST AVE S AND RENTON AVE S	S	Unrestricted Parking	6	6	5	5	5	5	5	3
66133	S OREGON ST BETWEEN RENTON AVE S AND 33RD W AVE S	N	Unrestricted Parking	4	4	0	0	0	0	0	0
66134	S OREGON ST BETWEEN RENTON AVE S AND 33RD W AVE S	S	Unrestricted Parking	4	4	0	0	0	0	0	0
57797	RENTON AVE S BETWEEN S OREGON E ST AND 33RD AVE S	SW	Unrestricted Parking	18	18	16	19	17	21	17	14
57798	RENTON AVE S BETWEEN S OREGON E ST AND 33RD AVE S	NE	Unrestricted Parking	15	15	10	8	8	7	8	8
88478	S HUDSON ST BETWEEN 37TH AVE S AND RAINIER AVE S	S	Unrestricted Parking	6	6	4	3	3	3	3	3
5437	35TH AVE S BETWEEN S HUDSON ST AND RENTON AVE S	W	Unrestricted Parking	5	5	1	0	2	0	0	0

Project Columbia City Parking Study

Notes: On-Street Parking Demand Counts conducted in July 2016

ELMNTKEY	UNITDESC	SIDE	PARKING_CA	Supply	Adjusted Supply ^a	Dates of Data Collection					
						Thursday July 21, 2016		Tuesday July 19, 2016			
						5 - 7 AM	9 - 11 AM	1 - 3 PM	3 - 5 PM	5 - 7 PM	7 - 9 PM
5441	35TH AVE S BETWEEN RENTON AVE S AND S DAWSON ST	W	Unrestricted Parking	12	12	5	5	6	3	2	2
5442	35TH AVE S BETWEEN RENTON AVE S AND S DAWSON ST	E	Unrestricted Parking	11	11	5	6	8	6	6	4
12502	RENTON AVE S BETWEEN 35TH AVE S AND S DAWSON N ST	SW	Unrestricted Parking	19	19	10	9	11	13	13	13
12501	RENTON AVE S BETWEEN 35TH AVE S AND S DAWSON N ST	NE	Unrestricted Parking	16	16	13	11	8	11	13	12
51057	37TH AVE S BETWEEN S HUDSON ST AND S DAWSON ST	W	Unrestricted Parking	16	16	13	18	19	15	17	18
51058	37TH AVE S BETWEEN S HUDSON ST AND S DAWSON ST	E	Unrestricted Parking	11	11	13	15	16	13	14	15
20009	S DAWSON ST BETWEEN RENTON N AVE S AND 37TH AVE S	N	Unrestricted Parking	6	7	8	5	6	6	7	7
20010	S DAWSON ST BETWEEN RENTON N AVE S AND 37TH AVE S	S	Unrestricted Parking	4	3	2	1	1	1	2	3
64854	S DAWSON ST BETWEEN 37TH AVE S AND 39TH AVE S	S	Unrestricted Parking	18	18	13	15	13	15	11	11
64397	S ALASKA ST BETWEEN RAINIER AVE S AND 38TH AVE S	N	Unrestricted Parking	16	16	0	1	2	6	0	0
28737	38TH AVE S BETWEEN S ALASKA ST AND S ANGELINE ST	W	Unrestricted Parking	2	2	1	5	0	3	3	1
28738	38TH AVE S BETWEEN S ALASKA ST AND S ANGELINE ST	E	Unrestricted Parking	12	12	9	8	14	12	10	12
64417	S AMERICUS ST BETWEEN 39TH AVE S AND 42ND AVE S	N	Unrestricted Parking	0	0	0	0	1	0	0	1
64418	S AMERICUS ST BETWEEN 39TH AVE S AND 42ND AVE S	S	Unrestricted Parking	26	26	10	8	5	10	11	10
73893	39TH AVE S BETWEEN S AMERICUS ST AND S ANGELINE ST	W	Unrestricted Parking	9	9	4	7	9	8	8	7
73894	39TH AVE S BETWEEN S AMERICUS ST AND S ANGELINE ST	E	Unrestricted Parking	9	9	6	7	8	7	7	7
74421	42ND AVE S BETWEEN S AMERICUS ST AND S ANGELINE ST	W	Unrestricted Parking	8	8	2	2	2	4	2	3
74422	42ND AVE S BETWEEN S AMERICUS ST AND S ANGELINE ST	E	Unrestricted Parking	5	5	2	2	4	3	1	3
74585	43RD AVE S BETWEEN S ALASKA ST AND S ANGELINE ST	W	Unrestricted Parking	12	12	5	2	3	2	3	3
74586	43RD AVE S BETWEEN S ALASKA ST AND S ANGELINE ST	E	Unrestricted Parking	12	12	2	3	2	3	1	1
19549	S ANGELINE ST BETWEEN RAINIER AVE S AND 38TH AVE S	N	Unrestricted Parking	6	6	7	6	7	7	7	6
19550	S ANGELINE ST BETWEEN RAINIER AVE S AND 38TH AVE S	S	Unrestricted Parking	7	8	9	7	4	9	7	7
41777	S ANGELINE ST BETWEEN 38TH AVE S AND 39TH AVE S	N	Unrestricted Parking	8	7	8	8	8	7	9	9
41778	S ANGELINE ST BETWEEN 38TH AVE S AND 39TH AVE S	S	Unrestricted Parking	11	12	13	11	11	12	13	11
87329	S ANGELINE ST BETWEEN 39TH AVE S AND 42ND AVE S	N	Unrestricted Parking	26	26	21	14	20	20	24	19
87330	S ANGELINE ST BETWEEN 39TH AVE S AND 42ND AVE S	S	Unrestricted Parking	30	30	21	20	22	21	22	20
87333	S ANGELINE ST BETWEEN 42ND AVE S AND 43RD AVE S	N	Unrestricted Parking	7	7	4	3	3	3	3	5
87334	S ANGELINE ST BETWEEN 42ND AVE S AND 43RD AVE S	S	Unrestricted Parking	9	9	6	1	2	2	1	2
74425	42ND AVE S BETWEEN S ANGELINE ST AND S EDMUNDS ST	W	Unrestricted Parking	7	7	1	2	1	0	1	1

Project Columbia City Parking Study

Notes: On-Street Parking Demand Counts conducted in July 2016

ELMNTKEY	UNITDESC	SIDE	PARKING_CA	Supply	Adjusted Supply ^a	Dates of Data Collection					
						Thursday July 21, 2016		Tuesday July 19, 2016			
						5 - 7 AM	9 - 11 AM	1 - 3 PM	3 - 5 PM	5 - 7 PM	7 - 9 PM
74426	42ND AVE S BETWEEN S ANGELINE ST AND S EDMUNDS ST	E	Unrestricted Parking	6	6	4	2	3	3	3	2
29473	43RD AVE S BETWEEN S ANGELINE ST AND S FERDINAND ST	W	Unrestricted Parking	11	12	7	2	7	3	4	4
29474	43RD AVE S BETWEEN S ANGELINE ST AND S FERDINAND ST	E	Unrestricted Parking	10	10	6	6	3	7	6	7
20137	S EDMUNDS ST BETWEEN RAINIER AVE S AND 39TH AVE S	N	Unrestricted Parking	10	10	6	10	9	9	9	9
87913	S EDMUNDS ST BETWEEN 39TH AVE S AND 42ND AVE S	N	Unrestricted Parking	30	30	12	18	22	21	16	18
87914	S EDMUNDS ST BETWEEN 39TH AVE S AND 42ND AVE S	S	Unrestricted Parking	30	30	15	18	23	22	20	19
51869	42ND AVE S BETWEEN S EDMUNDS ST AND S FERDINAND N ST	W	Unrestricted Parking	5	4	1	4	3	2	3	2
51870	42ND AVE S BETWEEN S EDMUNDS ST AND S FERDINAND N ST	E	Unrestricted Parking	4	5	2	0	1	1	3	1
6629	42ND AVE S BETWEEN S FERDINAND N ST AND S FERDINAND S ST	W	Unrestricted Parking	1	1	1	1	0	0	0	0
6630	42ND AVE S BETWEEN S FERDINAND N ST AND S FERDINAND S ST	E	Unrestricted Parking	3	3	1	0	1	2	0	0
20189	S FERDINAND ST BETWEEN 39TH AVE S AND 42ND S AVE S	N	Unrestricted Parking	25	25	18	21	22	21	18	18
20190	S FERDINAND ST BETWEEN 39TH AVE S AND 42ND S AVE S	S	Unrestricted Parking	30	29	20	24	26	23	20	20
42501	S FERDINAND ST BETWEEN 42ND N AVE S AND 43RD AVE S	N	Unrestricted Parking	8	8	1	1	1	1	2	1
42502	S FERDINAND ST BETWEEN 42ND N AVE S AND 43RD AVE S	S	Unrestricted Parking	8	8	2	3	1	1	1	1
6633	42ND AVE S BETWEEN S FERDINAND S ST AND S HUDSON ST	W	Unrestricted Parking	8	8	6	5	5	4	5	5
6634	42ND AVE S BETWEEN S FERDINAND S ST AND S HUDSON ST	E	Unrestricted Parking	9	9	4	6	4	2	3	5
74589	43RD AVE S BETWEEN S FERDINAND ST AND S HUDSON ST	W	Unrestricted Parking	13	13	9	7	6	7	8	7
74590	43RD AVE S BETWEEN S FERDINAND ST AND S HUDSON ST	E	Unrestricted Parking	14	14	8	8	4	2	0	3
20686	S HUDSON ST BETWEEN 39TH AVE S AND 42ND AVE S	S	Unrestricted Parking	24	24	20	19	16	19	20	23
42918	S HUDSON ST BETWEEN 42ND AVE S AND 43RD AVE S	S	Unrestricted Parking	7	7	7	6	6	7	4	6
74429	42ND AVE S BETWEEN S HUDSON ST AND S FARRAR ST	W	Unrestricted Parking	16	15	16	13	10	12	12	15
74430	42ND AVE S BETWEEN S HUDSON ST AND S FARRAR ST	E	Unrestricted Parking	13	13	16	11	10	11	10	13
21333	S PEARL ST BETWEEN 39TH AVE S AND DEAD END 3	N	Unrestricted Parking	17	17	20	6	11	10	17	19
21334	S PEARL ST BETWEEN 39TH AVE S AND DEAD END 3	S	Unrestricted Parking	11	11	10	6	9	9	10	10
128343	S OREGON ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	N	Restricted Parking Zone	9	9	9	8	5	8	7	7
128344	S OREGON ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	S	Restricted Parking Zone	9	9	9	8	8	6	5	7
73125	33RD AVE S BETWEEN S OREGON E ST AND RENTON AVE S	W	Restricted Parking Zone	15	15	5	2	3	0	4	3
73126	33RD AVE S BETWEEN S OREGON E ST AND RENTON AVE S	E	Restricted Parking Zone	13	13	7	6	1	2	5	5
73129	33RD AVE S BETWEEN RENTON AVE S AND S ALASKA ST	W	Restricted Parking Zone	4	4	5	4	6	4	3	5

Project Columbia City Parking Study

Notes: On-Street Parking Demand Counts conducted in July 2016

ELMNTKEY	UNITDESC	SIDE	PARKING_CA	Supply	Adjusted Supply ^a	Dates of Data Collection					
						Thursday July 21, 2016		Tuesday July 19, 2016			
						5 - 7 AM	9 - 11 AM	1 - 3 PM	3 - 5 PM	5 - 7 PM	7 - 9 PM
73130	33RD AVE S BETWEEN RENTON AVE S AND S ALASKA ST	E	Restricted Parking Zone	7	7	6	5	6	6	4	6
5285	34TH AVE S BETWEEN S OREGON E ST AND S ALASKA ST	W	Restricted Parking Zone	20	20	18	12	10	10	16	12
5286	34TH AVE S BETWEEN S OREGON E ST AND S ALASKA ST	E	Restricted Parking Zone	24	24	21	14	11	10	19	16
50797	35TH AVE S BETWEEN S ALASKA ST AND S EDMUNDS ST	W	Restricted Parking Zone	28	28	16	20	21	18	14	13
50798	35TH AVE S BETWEEN S ALASKA ST AND S EDMUNDS ST	E	Restricted Parking Zone	15	15	14	15	5	11	10	13
64997	S EDMUNDS ST BETWEEN 32ND AVE S AND 35TH AVE S	N	Restricted Parking Zone	19	19	20	18	17	15	16	19
64998	S EDMUNDS ST BETWEEN 32ND AVE S AND 35TH AVE S	S	Restricted Parking Zone	25	25	25	20	17	16	19	22
87953	S FERDINAND ST BETWEEN M L KING JR ER WAY S AND 35TH AVE S	N	Restricted Parking Zone	23	23	15	12	7	12	23	12
87954	S FERDINAND ST BETWEEN M L KING JR ER WAY S AND 35TH AVE S	S	Restricted Parking Zone	22	22	15	12	12	12	23	14
20677	S HUDSON ST BETWEEN M L KING JR ER WAY S AND 35TH AVE S	N	Restricted Parking Zone	10	10	7	10	9	10	9	6
20678	S HUDSON ST BETWEEN M L KING JR ER WAY S AND 35TH AVE S	S	Restricted Parking Zone	9	9	4	7	12	8	7	7
42913	S HUDSON ST BETWEEN 35TH AVE S AND 37TH AVE S	N	Restricted Parking Zone	24	23	12	10	12	10	12	12
42914	S HUDSON ST BETWEEN 35TH AVE S AND 37TH AVE S	S	Restricted Parking Zone	25	25	14	10	6	12	14	11
50801	35TH AVE S BETWEEN S FERDINAND ST AND S HUDSON ST	W	Restricted Parking Zone	5	5	1	1	3	2	1	3
50802	35TH AVE S BETWEEN S FERDINAND ST AND S HUDSON ST	E	Restricted Parking Zone	7	7	1	1	1	0	4	0
5438	35TH AVE S BETWEEN S HUDSON ST AND RENTON AVE S	E	Restricted Parking Zone	5	5	2	2	1	2	0	0
Total				1,280	1,271	880	795	775	783	812	802

a. Supply adjusted based on evaluation of parking during field visit. Adjustments highlighted in yellow.

Project Columbia City Parking Study

Notes: Demand Count of RPZ Permit Holders along block faces in Restricted Parking Zones - July 2016

Morning Counts (conducted Thursday, July 21, 2016)					5 - 7 AM			9 - 11 AM			
ELMNTKEY	UNITDESC	Side	Supply	Adjusted Supply	Total			Total			
					Vehicles with RPZ Permit	Demand along blk face	% with RPZ permits	Vehicles with RPZ Permit	Demand along blk face	% with RPZ permits	
128343	S OREGON ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	N	9	9	2	9	22%	3	8	38%	
128344	S OREGON ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	S	9	9	5	9	56%	4	8	50%	
73125	33RD AVE S BETWEEN S OREGON E ST AND RENTON AVE S	W	15	15	1	5	20%	1	2	50%	
73126	33RD AVE S BETWEEN S OREGON E ST AND RENTON AVE S	E	13	13	5	7	71%	2	6	33%	
73129	33RD AVE S BETWEEN RENTON AVE S AND S ALASKA ST	W	4	4	2	5	40%	3	4	75%	
73130	33RD AVE S BETWEEN RENTON AVE S AND S ALASKA ST	E	7	7	3	6	50%	1	5	20%	
5285	34TH AVE S BETWEEN S OREGON E ST AND S ALASKA ST	W	20	20	8	18	44%	7	12	58%	
5286	34TH AVE S BETWEEN S OREGON E ST AND S ALASKA ST	E	24	24	12	21	57%	9	14	64%	
50797	35TH AVE S BETWEEN S ALASKA ST AND S EDMUNDS ST	W	28	28	11	16	69%	8	20	40%	
50798	35TH AVE S BETWEEN S ALASKA ST AND S EDMUNDS ST	E	15	15	7	14	50%	8	15	53%	
64997	S EDMUNDS ST BETWEEN 32ND AVE S AND 35TH AVE S	N	19	19	15	20	75%	10	18	56%	
64998	S EDMUNDS ST BETWEEN 32ND AVE S AND 35TH AVE S	S	25	25	20	25	80%	12	20	60%	
Totals:					188	91	155	59%	68	132	52%

Afternoon Counts (conducted Tuesday, July 19, 2016)					3 - 5 PM			5 - 7 PM			7 - 9 PM			
ELMNTKEY	UNITDESC	Side	Supply	Adjusted Supply	Total			Total			Total			
					Vehicles with RPZ Permit	Demand along blk face	% with RPZ permits	Vehicles with RPZ Permit	Demand along blk face	% with RPZ permits	Vehicles with RPZ Permit	Demand along blk face	% with RPZ permits	
128343	S OREGON ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	N	9	9	1	8	13%	1	7	14%	1	7	14%	
128344	S OREGON ST BETWEEN M L KING JR ER WAY S AND 31ST AVE S	S	9	9	1	6	17%	4	5	80%	4	7	57%	
73125	33RD AVE S BETWEEN S OREGON E ST AND RENTON AVE S	W	15	15	0	4	0%	1	4	25%	0	3	0%	
73126	33RD AVE S BETWEEN S OREGON E ST AND RENTON AVE S	E	13	13	0	2	0%	3	5	60%	4	5	80%	
73129	33RD AVE S BETWEEN RENTON AVE S AND S ALASKA ST	W	4	4	1	4	25%	2	3	67%	2	5	40%	
73130	33RD AVE S BETWEEN RENTON AVE S AND S ALASKA ST	E	7	7	2	6	33%	3	4	75%	2	6	33%	
5285	34TH AVE S BETWEEN S OREGON E ST AND S ALASKA ST	W	20	20	7	10	70%	5	16	31%	6	12	50%	
5286	34TH AVE S BETWEEN S OREGON E ST AND S ALASKA ST	E	24	24	9	10	90%	9	19	47%	8	16	50%	
50797	35TH AVE S BETWEEN S ALASKA ST AND S EDMUNDS ST	W	28	28	6	18	33%	8	14	57%	11	13	85%	
50798	35TH AVE S BETWEEN S ALASKA ST AND S EDMUNDS ST	E	15	15	7	11	64%	6	10	60%	9	13	69%	
64997	S EDMUNDS ST BETWEEN 32ND AVE S AND 35TH AVE S	N	19	19	14	15	93%	10	16	63%	10	19	53%	
64998	S EDMUNDS ST BETWEEN 32ND AVE S AND 35TH AVE S	S	25	25	13	16	81%	12	19	63%	14	22	64%	
Totals:					188	61	110	55%	64	122	52%	71	128	55%

Columbia City Neighborhood Parking Study - 2016
License Plate Survey

Notes: Analysis of resident vs non-resident parking rates in both individual blocks and the entire neighborhood
 Conducted: **Wednesday, October 5, 2016** by Heffron Transportation, Inc.

ELMNTKEY	UNITDESC	Side	No. of Spaces	Individual Block Analysis								
				5:00 AM		10:00 AM			3:00 PM			
				Total # of Vehicles	% of Total Spaces	Total # of Vehicles	# of Non-Resident Cars Only	Non-Resident Vehicle %	Total # of Vehicles	# of Non-Resident Cars Only	Non-Resident Vehicle %	
1	87330	S ANGELINE ST BETWEEN 39TH AVE S AND 42ND AVE S	S	26	19	73%	19	5	26%	19	10	53%
2	74422	42ND AVE S BETWEEN S AMERICUS ST AND S ANGELINE ST	E	5	4	80%	2	0	0%	3	1	33%
3	73893	39TH AVE S BETWEEN S AMERICUS ST AND S ANGELINE ST	W	9	8	89%	8	1	13%	8	2	25%
4	28738	38TH AVE S BETWEEN S ALASKA ST AND S ANGELINE ST	E	12	11	92%	12	6	50%	13	7	54%
5	19550	S ANGELINE ST BETWEEN RAINIER AVE S AND 38TH AVE S	S	8	8	100%	8	2	25%	8	4	50%
6	41778	S ANGELINE ST BETWEEN 38TH AVE S AND 39TH AVE S	S	12	14	117%	13	8	62%	12	7	58%
7	73894	39TH AVE S BETWEEN S AMERICUS ST AND S ANGELINE ST	E	9	4	44%	5	3	60%	8	7	88%
8	87329	S ANGELINE ST BETWEEN 39TH AVE S AND 42ND AVE S	N	24	21	88%	21	5	24%	21	7	33%
9	41777	S ANGELINE ST BETWEEN 38TH AVE S AND 39TH AVE S	N	7	6	86%	7	4	57%	7	4	57%
10	19549	S ANGELINE ST BETWEEN RAINIER AVE S AND 38TH AVE S	N	6	6	100%	6	3	50%	7	5	71%
12	87914	S EDMUNDS ST BETWEEN 39TH AVE S AND 42ND AVE S	S	27	14	52%	20	14	70%	22	16	73%
13	51869	42ND AVE S BETWEEN S EDMUNDS ST AND S FERDINAND N ST	W	4	1	25%	1	1	100%	3	3	100%
14	20189	S FERDINAND ST BETWEEN 39TH AVE S AND 42ND S AVE S	N	24	19	79%	21	12	57%	19	13	68%
15	20137	S EDMUNDS ST BETWEEN RAINIER AVE S AND 39TH AVE S	N	10	10	100%	11	4	36%	9	4	44%
16	20190	S FERDINAND ST BETWEEN 39TH AVE S AND 42ND S AVE S	S	27	14	52%	25	18	72%	25	19	76%
17	74429	42ND AVE S BETWEEN S HUDSON ST AND S FARRAR ST	W	15	12	80%	10	3	30%	8	3	38%
18	21334	S PEARL ST BETWEEN 39TH AVE S AND DEAD END 3	S	11	15	136%	7	2	29%	7	3	43%
19	21333	S PEARL ST BETWEEN 39TH AVE S AND DEAD END 3	N	17	17	100%	9	2	22%	13	4	31%
20	20686	S HUDSON ST BETWEEN 39TH AVE S AND 42ND AVE S	S	24	19	79%	20	7	35%	24	13	54%
21	42918	S HUDSON ST BETWEEN 42ND AVE S AND 43RD AVE S	S	7	6	86%	3	0	0%	5	0	0%
22	74430	42ND AVE S BETWEEN S HUDSON ST AND S FARRAR ST	E	13	12	92%	7	0	0%	9	2	22%
23	87913	S EDMUNDS ST BETWEEN 39TH AVE S AND 42ND AVE S	N	28	17	61%	21	13	62%	23	18	78%
24	28737	38TH AVE S BETWEEN S ALASKA ST AND S ANGELINE ST	W	2	1	50%	4	3	75%	4	3	75%
			TOTAL	327	258	79%	260	116	44.6%	277	155	56.0%

Cumulative Neighborhood Analysis (All Block Faces)			
<i>Resident cars were parked at 5:00 a.m. and then observed still in the neighborhood at 10 AM and/or 3 PM</i>			
		10:00 AM	3:00 PM
	Total # of Vehicles	260	277
	# of Non-Resident Cars Only	112	147
	Non-Resident Vehicle %	43.1%	53.1%

* Note: A total of 4 resident vehicles were found to park elsewhere in the neighborhood at 10 AM, and 8 resident vehicles were parked elsewhere at 3 PM

Columbia City Neighborhood Parking Study - 2016
License Plate Survey

Notes: Analysis of resident vs non-resident parking rates in both individual blocks and the entire neighborhood
 Conducted: **Wednesday, October 12, 2016** by Heffron Transportation, Inc.

ELMNTKEY	UNITDESC	Side	No. of Spaces	Individual Block Analysis											
				5:00 AM		10:00 AM			3:00 PM						
				Total # of Vehicles	% of Total Spaces	Total # of Vehicles	# of Non-Resident Cars Only	Non-Resident Vehicle %	Total # of Vehicles	# of Non-Resident Cars Only	Non-Resident Vehicle %				
1	87330	S	26	21	81%	21	9	43%	23	13	57%				
2	74422	E	5	3	60%	2	0	0%	2	0	0%				
3	73893	W	9	5	56%	8	3	38%	9	4	44%				
4	28738	E	12	12	100%	11	6	55%	12	8	67%				
5	19550	S	8	9	113%	8	3	38%	8	3	38%				
6	41778	S	12	12	100%	16	9	56%	15	9	60%				
7	73894	E	9	6	67%	6	1	17%	7	3	43%				
8	87329	N	24	22	92%	21	5	24%	21	6	29%				
9	41777	N	7	5	71%	8	7	88%	7	7	100%				
10	19549	N	6	7	117%	7	4	57%	6	4	67%				
12	87914	S	27	12	44%	19	14	74%	21	16	76%				
13	51869	W	4	2	50%	1	0	0%	1	0	0%				
14	20189	N	24	17	71%	23	14	61%	17	11	65%				
15	20137	N	10	6	60%	11	6	55%	10	5	50%				
16	20190	S	27	18	67%	25	15	60%	24	18	75%				
17	74429	W	15	10	67%	8	1	13%	10	3	30%				
18	21334	S	11	13	118%	8	0	0%	9	3	33%				
19	21333	N	17	20	118%	9	1	11%	15	7	47%				
20	20686	S	24	21	88%	19	6	32%	19	8	42%				
21	42918	S	7	7	100%	6	1	17%	4	0	0%				
22	74430	E	13	10	77%	7	2	29%	8	3	38%				
23	87913	N	28	14	50%	19	14	74%	19	16	84%				
24	28737	W	2	3	150%	5	2	40%	7	5	71%				
			TOTAL	327		255	78%		268	123	45.9%		274	152	55.5%

Cumulative Neighborhood Analysis (All Block Faces)

Resident cars were parked at 5:00 a.m. and then observed still in the neighborhood at 10 AM and/or 3 PM

	10:00 AM	3:00 PM
Total # of Vehicles	268	274
# of Non-Resident Cars Only	118	135
Non-Resident Vehicle %	44.0%	49.3%

* Note: A total of 5 resident vehicles were found to park elsewhere in the neighborhood at 10 AM, and 17 resident vehicles were parked elsewhere at 3 PM