

TECHNICAL REPORT

LIGHT RAIL STATION AREA PARKING MONITORING FOR 2011

Prepared for:

Seattle Department of Transportation

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TABLE OF CONTENTS

1. Introduction.....	1
2. Weekday Utilization Monitoring	1
3. Weekend Utilization	5
4. Business Permit Monitoring	6
5. Changes in the RPZs.....	8
6. Key findings	8

EXHIBITS

Figure 1. Study Areas	2
Table 1. Parking Utilization Comparison – AM	4
Table 2. Parking Utilization Comparison – PM	4
Table 3. Parking Utilization Comparison – Sunday with and without a Seahawk’s Game	5
Table 4. Station Area RPZ Blockfaces with Greater than 75% Parking Utilization	7
Table 5. RPZ Permits Issued.....	8

1. Introduction

This report presents the results of the third year of the LINK light rail parking monitoring program. The program began in the fall of 2008 prior to the opening of the light rail line through Southeast Seattle. At that time, Seattle Department of Transportation (SDOT) commissioned a study to establish a baseline inventory of existing parking supply and parking occupancy in proximity of seven light rail stations: Stadium, SODO, Mt. Baker, Beacon Hill, Columbia City, Othello, and Rainier Beach. The baseline inventory enables SDOT to monitor changes in parking and determine if and to what extent local area businesses and residents are being impacted by light rail operations. Figure 1 shows the location of the stations.

Following the 2008 study and intensive community engagement, SDOT installed restricted parking zones (RPZs) in five of the study areas (Stadium and SODO were not included). The RPZ permit allows motorists to park unrestricted in time-limited spaces. They are intended to prevent commuters and other transit riders from using the on-street parking spaces needed by people living, working, and shopping in each station area neighborhood. The program includes residential and business permits, the latter of which are part of a four-year pilot program that SDOT monitors annually.

Light rail operations began in July 2009. In fall 2010, the first post-operation monitoring study was performed to determine how parking has been affected in the station area.¹ This report presents the second round of monitoring parking in the station areas, which was performed in fall 2011.

As in 2008 and 2010, data collection for monitoring the LINK light station areas is conducted in the fall to account for parking activity associated with trips to universities as well as major sporting events. The data collection methodology was similar to the previous studies in that occupancy data were collected at all seven station areas during the weekday within a ¼-mile and ½-mile radius of each station. Weekend data were collected to analyze the potential parking impact during a Seahawk's game. RPZ permit numbers were also collected to determine use by businesses in each station area.

2. Weekday Utilization Monitoring

Parking "utilization" is defined by the number of vehicles parked as a percentage of the number of legal parking spaces. Weekday parking utilization was surveyed at all seven station areas (see Figure 1).

¹ *Technical Report, Light Rail Station Parking Monitoring Program*, Heffron Transportation, Inc., March 29, 2011.

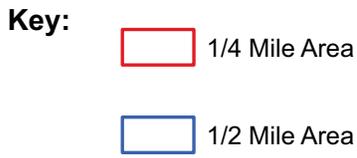
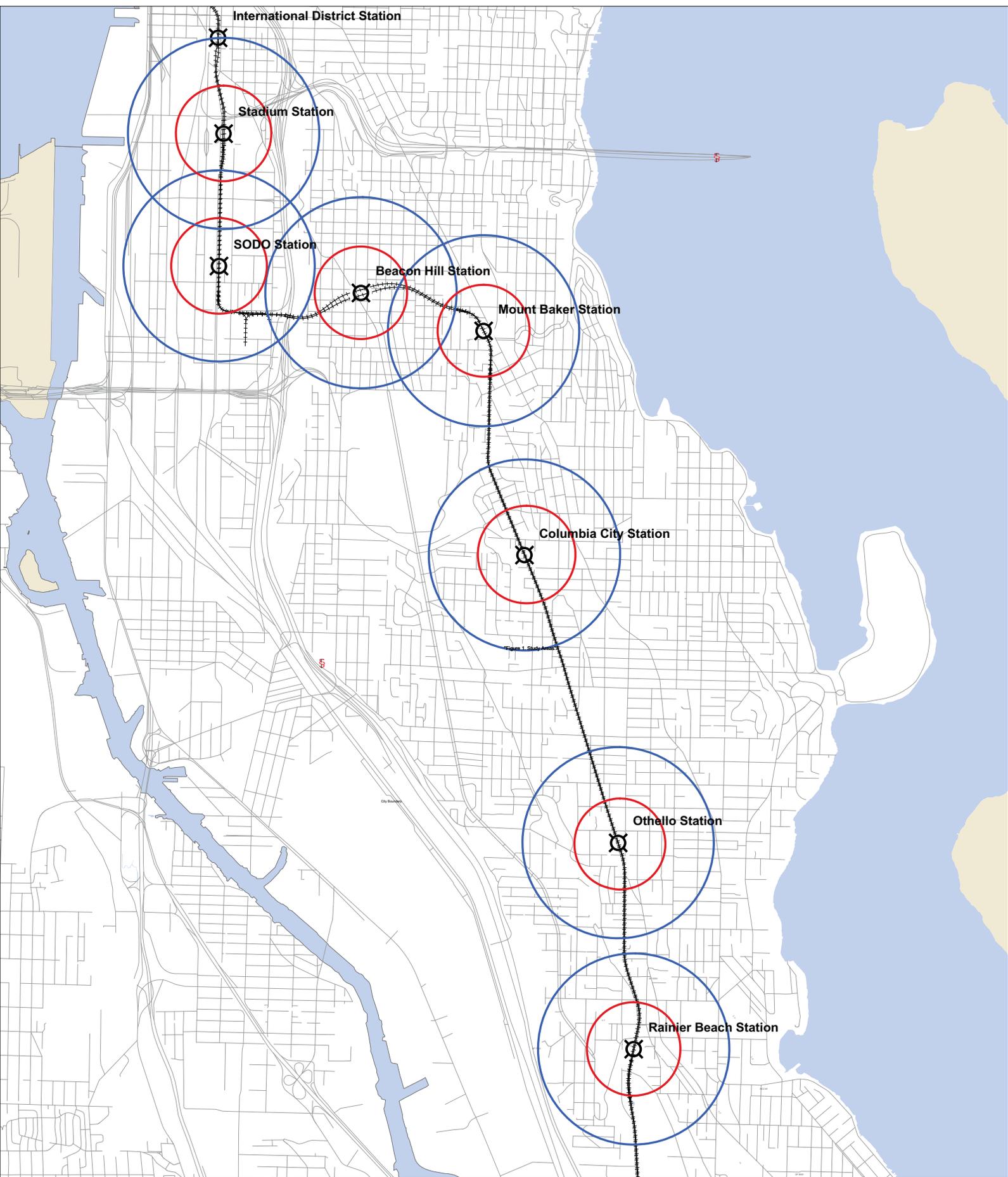


Figure 1. Study Areas

The number of parking spaces within a ¼-mile and ½-mile radius of each station was inventoried in 2008. It is noted that some streets within the radius area were excluded from each survey if grade or a disconnected grid would make them unlikely to be used for commuter parking. In 2010, the inventory was updated to address curb space changes that occurred due to the installation of new on-street parking controls and completion of the light rail construction. The inventory was reviewed again during the 2011 survey and accounts for changes to both the supply and parking restrictions. Maps of each station area are included in Appendix A.

New construction in the vicinity of the Columbia City station area should be noted. The area east of Martin Luther King Jr Way S from S Dakota Street to S Oregon Street is now being developed – the new roads have been constructed though not yet open due to the housing construction still in progress. Construction has been completed and the residences are occupied along S Adams Street and 30th Avenue S. These four new block faces were added to the survey area. (These additional block faces are shown on the Columbia City map in Appendix A.)

The number of vehicles parked in each of the seven study areas was surveyed mid-week (Tuesday, Wednesday and Thursday) during the second and third week in October 2011. The counts were performed from 9:00 A.M. to 11:00 A.M. and 1:00 P.M. to 3:00 P.M. These time periods were consistent for all study years. Table 1 presents a summary of the 2008, 2010 and 2011 parking utilization during the AM period; Table 2 presents a summary for the PM period. The study areas are divided into two groups: blocks located within a ¼-mile radius of the station, and blocks located between a ¼ and ½-mile radius of the station. Detailed parking utilization data by block face are provided in Appendix B.

Table 1. Parking Utilization Comparison – AM

Station Areas	2008 Utilization ¹			2010 Utilization ²			2011 Utilization ³		
	Quarter-Mile	Half-Mile ⁴	Total Area	Quarter-Mile	Half-Mile ⁴	Total Area	Quarter-Mile	Half-Mile ⁴	Total Area
Stadium	81%	61%	67%	66%	58%	61%	70%	60%	63%
SODO	71%	70%	70%	66%	72%	70%	66%	69%	68%
Beacon Hill	40%	35%	38%	31%	30%	31%	29%	34%	32%
Mount Baker	45%	49%	47%	39%	49%	45%	34%	43%	40%
Columbia City	34%	43%	39%	28%	37%	34%	27%	41%	35%
Othello	35%	27%	29%	23%	27%	26%	26%	26%	26%
Rainier	18%	23%	23%	25%	20%	22%	20%	23%	22%

Note: Utilization is the number of vehicles parked as a percentage of the number of legal parking spaces. All data were collected between 9:00 and 11:00 A.M.

1. Data collected in October through December 2008, and reflect a condition before light rail operations began.
2. Data collected in October and November 2010.
3. Data collected in October 2011.
4. Located within ¼ to ½-mile radius of the station.

Table 2. Parking Utilization Comparison – PM

Station Areas	2008 Utilization ¹			2010 Utilization ²			2011 Utilization ³		
	Quarter-Mile	Half-Mile ³	Total Area	Quarter-Mile	Half-Mile ³	Total Area	Quarter-Mile	Half-Mile ³	Total Area
Stadium	85%	72%	76%	68%	62%	64%	72%	71%	71%
SODO	68%	76%	73%	66%	77%	73%	61%	73%	69%
Beacon Hill	37%	28%	33%	32%	29%	31%	27%	30%	29%
Mount Baker	28%	39%	34%	39%	49%	45%	30%	41%	37%
Columbia City	35%	41%	38%	28%	39%	35%	29%	40%	35%
Othello	32%	24%	26%	27%	25%	26%	26%	23%	24%
Rainier	14%	21%	20%	23%	20%	21%	21%	22%	22%

Note: Utilization is the number of vehicles parked as a percentage of the number of legal parking spaces. All data were collected between 1:00 and 3:00 P.M.

1. Data collected in October through December 2008, and reflect a condition before light rail operations began.
2. Data collected in October and November 2010.
3. Data collected in October 2011.
4. Located within ¼ to ½-mile radius of the station.

As shown in the above tables, the 2011 utilization rates for four of the seven station areas are lower than they were in 2008 before light rail operations began. At the Beacon Hill station, the PM utilization rate within the half-mile distance was 2% higher than 2008. At the Mount Baker station all PM utilization rates in 2011 were higher than in 2008, but were lower than documented in 2010. At the Rainier station area, utilization rates have remained relatively constant through the three survey periods.

3. Weekend Utilization

Weekend parking data were collected, as in the previous two study years, to evaluate the impact of a major sporting event at Century Link Field due to the accessibility of free on-street parking in the station area neighborhoods. Parking data were collected at Beacon Hill, Mt Baker and Columbia City based on community input received by SDOT. The study areas for these stations are the blocks within ¼-mile radius of the station.

Parking data were collected on a Seahawk’s Sunday game day and non-game Sundays. The 2011 surveyed game day was Sunday November 13, 2011 (the opponent was the Baltimore Ravens) and the non-game day was Sunday, November 6, 2011. Occupancy counts were conducted between 1:00 P.M. and 3:00 P.M. Table 3 presents the comparison of game day and non-game day parking utilization in 2008, 2010, and 2011.

Table 3. Parking Utilization Comparison – Sunday with and without a Seahawk’s Game

Station Areas	2008 Utilization (within ¼ mile)		2010 Utilization (within ¼ mile)		2011 Utilization (within ¼ mile)	
	Game Day ¹	Non-Game Day ²	Game Day ³	Non-Game Day ⁴	Game Day ⁵	Non-Game Day ⁶
Beacon Hill	39%	42%	41%	39%	39%	37%
Mount Baker	31%	43%	43%	44%	37%	33%
Columbia City	32%	34%	31%	29%	34%	35%

1. Data collection on Sunday, October 26, 2008
2. Data collection on Saturday, October 25, 2008
3. Data collection on Sunday, November 7, 2010
4. Data collection on Sunday, November 14, 2010 and Sunday, January 9, 2011
5. Data collection on Sunday, November 13, 2011
6. Data collection on Sunday, November 6, 2011

The survey results reflect a study area within ¼-mile radius of each station. However, those who use light rail to travel to the game are likely to park as close as possible to the station, thus block faces in closer proximity to the stations were evaluated for each station. (Parking utilization by block face is presented in Appendix B). These results are discussed below.

Beacon Hill

Parking utilization within ¼-mile of the Beacon Hill station increased by 2% between a non-game Sunday and a Seahawk’s Sunday in 2011. However, the increase was more substantial close to the station. Within approximately 800 feet walking distance of the station (about 62 block faces), non-game Sunday utilization was 47% and the game Sunday utilization was 56%. On the streets adjacent to the station (adjacent was defined as any block face that touched a corner of the light rail station block), the utilization increase between the two study times was even greater: non-game was 49% and game day was 86%.

Mount Baker

The Mount Baker station area showed a 4% increase in parking utilization between a game day and a non-game day for spaces located within ¼-mile radius of the station. There is limited on-street parking within 800 feet of the Mount Baker station and only a few block faces showed an increase in occupancy. On S Forest Street between 26th Avenue S and Rainier Avenue S on both the north side and south side of the street non-game day utilization was 0%, and game day utilization was 75%. This location is 400 feet from the light rail station and there are sidewalks providing accessibility to the station. There were five block faces approximately ¼-mile from the light rail station that showed an increase in parking utilization from 20% on a non-game Sunday to 91% on a game Sunday. The five block faces were:

- 30th Avenue S between S McClellan Street and S Mt Baker Boulevard, east side
- 30th Avenue S between S Mt Baker Boulevard and Wetmore Avenue S, east side
- S Byron Street between Rainier Avenue S and Wetmore Avenue S, northwest side
- S Hanford Street between MLK Jr Way S and S Rainier Ave S, southeast side
- S Horton Street between 27th Avenue S and MLK Jr Way S, south side

Columbia City

The parking utilization within ¼-mile radius of the Columbia City station was actually slightly less on a game day than a non-game day; however, closer to the station, the utilization on a game day was higher. There are 22 block faces within approximately 800 feet walking distance from the Columbia City light rail station. Within this area, the Sunday non-game utilization was 48% and the Sunday game utilization was 60%.

4. Business Permit Monitoring

On June 8, 2009, the Seattle City Council approved legislation directing SDOT to create a four-year pilot project to issue RPZ permits to employees of qualified businesses and institutions in the Central LINK light rail alignment. The purpose of the pilot is to determine if issuing RPZ permits to businesses and institution employees assists SDOT in reaching the following goals:

- Reduce neighborhood traffic impacts by large parking demand generators
- Support mixed-use neighborhoods and local business districts
- Continue to reduce overall energy use and vehicle emissions
- Keep demand by residents and businesses (including institutions) from exceeding available on-street parking spaces in residential areas
- Implement a customer-oriented permit program

SDOT reported to the City Council in 2011 on its evaluation of the program relative to the goals above. That report is presented in Appendix C. In 2013, SDOT will present a second evaluation to assist Council in determining whether to continue the program past the initial four-year time period, or make any other modifications to the program.

To keep demand by businesses from exceeding available on-street parking spaces in residential areas, the pilot program requires that SDOT not renew RPZ permits for businesses and institutions in the next RPZ cycle when annual monitoring indicates that 25% or more of streets in the zone meet the following conditions:

- At least 75% of the capacity of the street available for parking is generally occupied
- More than 35% of parked cars on the street are owned by non-residents of the designated area

Survey Methodology

The study area for RPZ permit data was defined by all block faces that were at 65% or greater utilization in the prior data collection. This would ensure that all block faces with greater than 75% utilization were captured even if there were day-to-day fluctuations in occupancy. Parking occupancy data were again recorded at the same time RPZ permit information was recorded and only those block faces with 75% or greater utilization were analyzed to determine the proportion of residential versus business RPZ permits.

RPZ Data Collection

RPZ permit numbers were recorded mid-week between 9:00 A.M. and 11:00 A.M. and between 1:00 P.M. and 3:00 P.M. Data collection occurred November 16 through November 18 and November 30 through December 2, 2011. Table 4 presents the block faces with greater than 75% parking utilization. There were no station areas where more than 25% of the block faces exceeded 75% utilization.

Table 4. Station Area RPZ Blockfaces with Greater than 75% Parking Utilization

Station Area	Number block faces with RPZ ¹	Time Period	Parking Utilization Greater than 75% ²		
			Number of block faces	Average	Percent of block faces
Beacon Hill	196	AM	4	6	3.1%
		PM	8		
Mount Baker	109	AM	6	6	5.5%
		PM	6		
Columbia City	93	AM	8	8	8.6%
		PM	8		
Othello	25	AM	4	5	20.0%
		PM	6		
Rainier Beach	38	AM	0	1	2.6%
		PM	2		

Note: This information reflects analysis in 2011. Changes have been made to RPZ designations in 2012.

1. Source: Seattle Department of Transportation, December, 2011. These blockface numbers reflect adjustments made in 2011.

2. Source: Heffron Transportation, Inc., December, 2011

5. Changes in the RPZs

In 2009, two permits and one guest pass were available to each household and business at no cost to ease the transition to new parking rules. Beginning in 2011, residents and businesses were responsible for permit costs. Table 5 shows the change in RPZ permits issued by SDOT in each light rail station area. Compared to 2009 when permits were free, the number of permits issued in 2011 decreased 43% for residential permits and 63% for business permits.

Table 5. RPZ Permits Issued

	2009		2011		% Change	
	Residential	Business	Residential	Business	Residential	Business
Mount Baker	391	506	194	74	-50%	-85%
Beacon Hill	1,493	157	857	130	-43%	-17%
Columbia City	1,199	97	776	93	-35%	-4%
Othello	432	305	223	151	-48%	-50%
Rainier Beach	160	153	42	--	-74%	-100%
Total	3,675	1,218	2,092	448	-43%	-63%

Source: SDOT, March 2012.

In addition to changes in the number of permits issued, some residents petitioned for the removal of the RPZ designation from their block. RPZ restrictions have been removed from the following station areas:

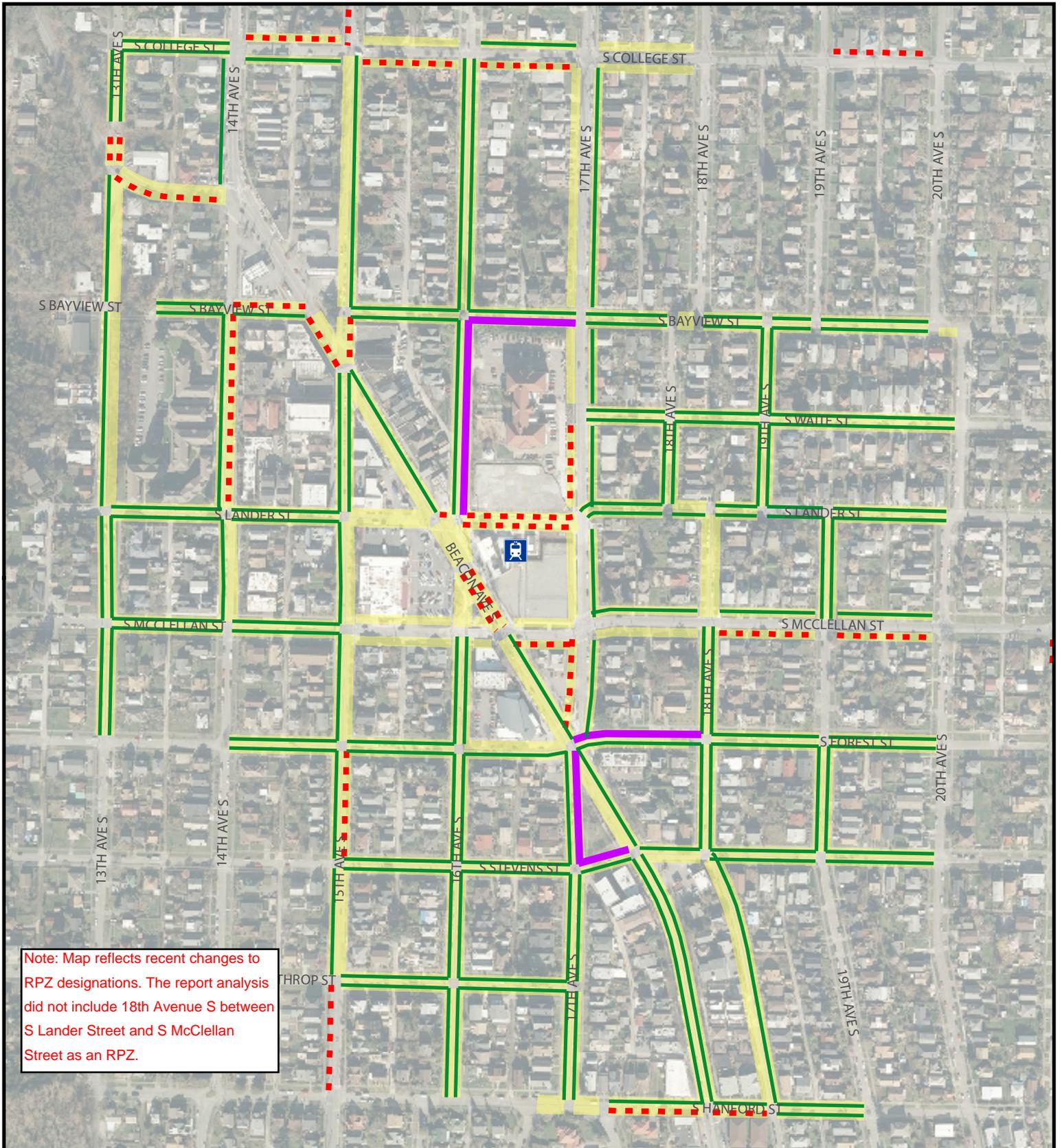
- Beacon Hill, 21 block faces removed from RPZ
- Mount Baker, 2 block faces removed from RPZ
- Columbia City, 2 block faces removed from RPZ

The RPZ restricted were removed in August and September 2011, prior to the fall 2011 parking utilization survey. The 2011 parking survey determined that there has not been a significant change in utilization on these block faces since 2009, when the RPZs were in effect.

6. Key findings

- Parking utilization surrounding the light rails stations has not changed substantially from 2008 to 2011.
- There has been an increase in utilization on some block faces near the Beacon Hill, Mount Baker, and Columbia City stations on a Seahawk game day.

APPENDIX A
STATION AREA MAPS



Note: Map reflects recent changes to RPZ designations. The report analysis did not include 18th Avenue S between S Lander Street and S McClellan Street as an RPZ.

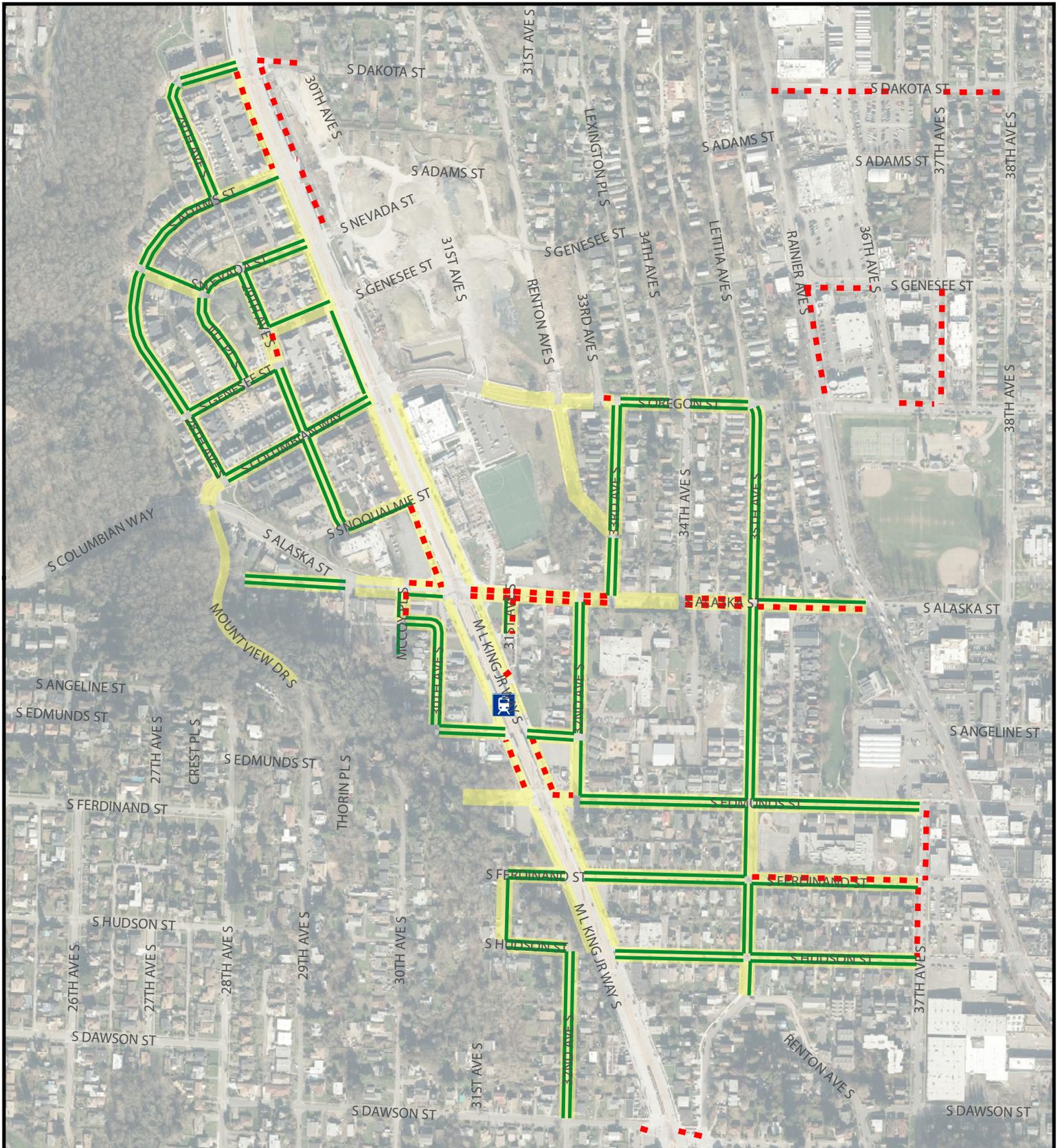
Legend

- | | | |
|---|--------------------|--|
|  | Light Rail Station | RPZ Time-limited Parking |
|  | No Parking Allowed |  1 Hour |
|  | RPZ Blocks |  2 Hour |
| | |  3 Hour |
| | |  4 Hour |

Beacon Hill Station RPZ Parking Regulations



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 Orthophoto Source: Pictometry 2007
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 AUTHOR : P&P GIS
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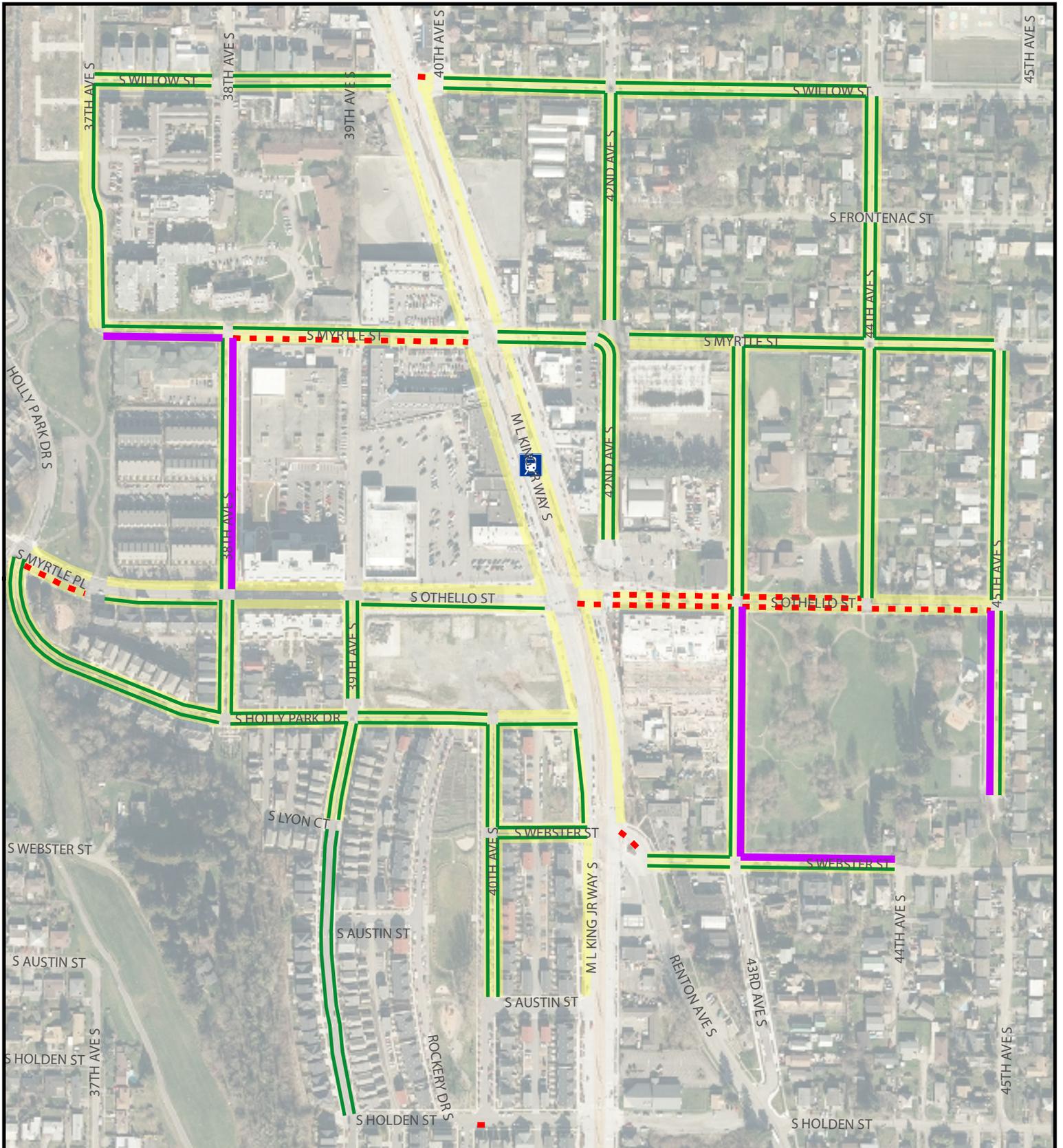
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-  Light Rail Station
-  No Parking Allowed
-  RPZ Blocks
- RPZ Time-limited Parking**
-  1 Hour
-  2 Hour
-  3 Hour
-  4 Hour



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Columbia City Station RPZ Parking Regulations



Legend

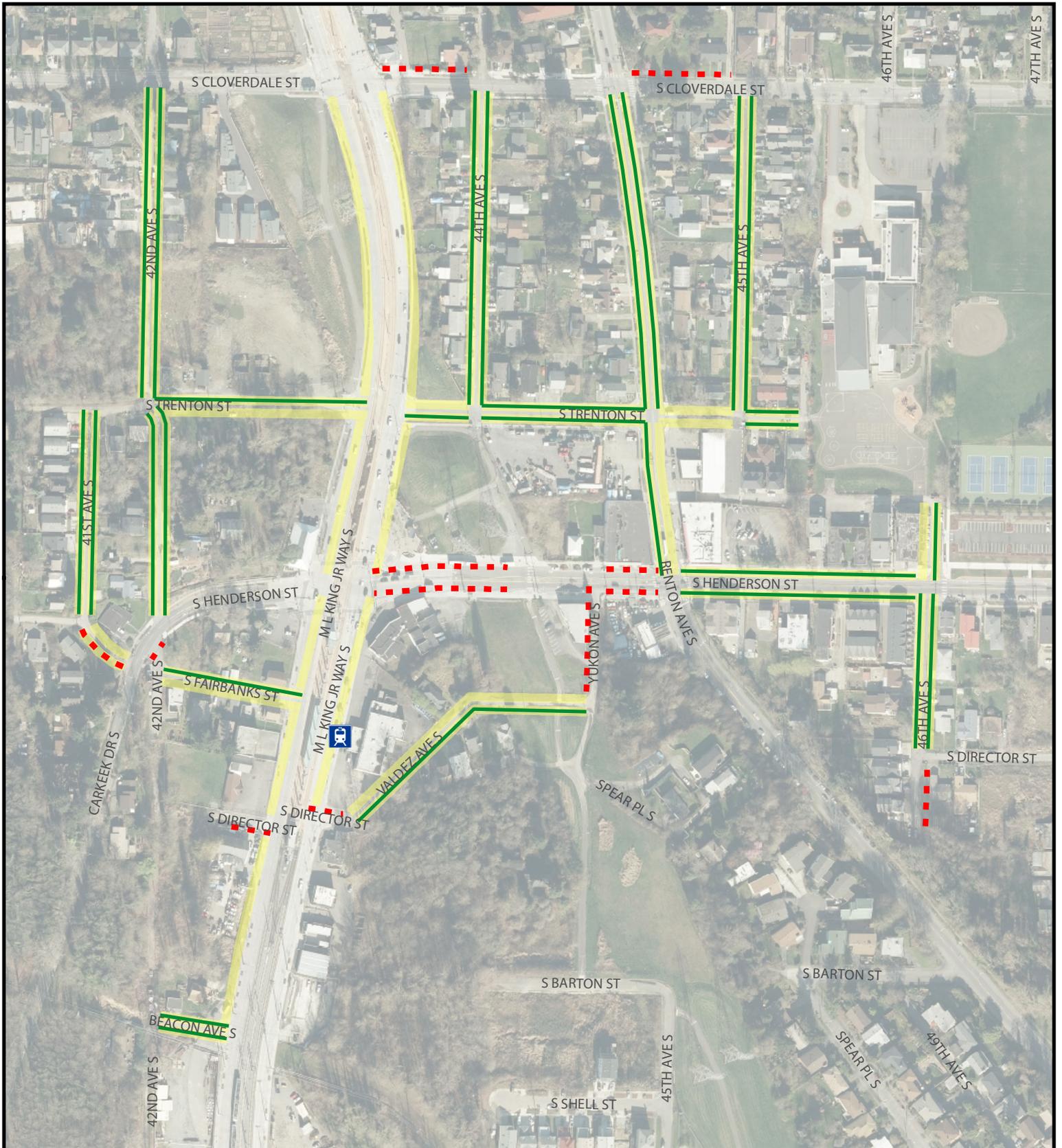
-  Light Rail Station
-  No Parking Allowed
-  RPZ Blocks
-  1 Hour
-  2 Hour
-  3 Hour
-  4 Hour

- RPZ Time-limited Parking**
-  1 Hour
 -  2 Hour
 -  3 Hour
 -  4 Hour

Othello Station RPZ Parking Regulations

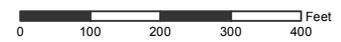


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Legend

-  Light Rail Station
-  No Parking Allowed
-  RPZ Blocks
- RPZ Time-limited Parking**
-  1 Hour
-  2 Hour
-  3 Hour
-  4 Hour



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Rainier Beach Station RPZ Parking Regulations