

TECHNICAL REPORT

**LIGHT RAIL STATION AREA
PARKING MONITORING FOR 2012**

Prepared for:
Seattle Department of Transportation

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Appendix B – Parking Data (Under Separate Cover)

Appendix C – SDOT Report to Council, 2011 (Under Separate Cover)

1. Introduction

This report presents the results of the fourth year of the LINK light rail parking monitoring program. Monitoring began in the fall of 2008 prior to the opening of the light rail line through Southeast Seattle. At that time, the Seattle Department of Transportation (SDOT) commissioned a study to establish a baseline inventory of existing parking supply and parking occupancy in the proximity of seven light rail stations: Stadium, SODO, Mount 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 baseline study and intensive community engagement in 2009, 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. The RPZs 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.

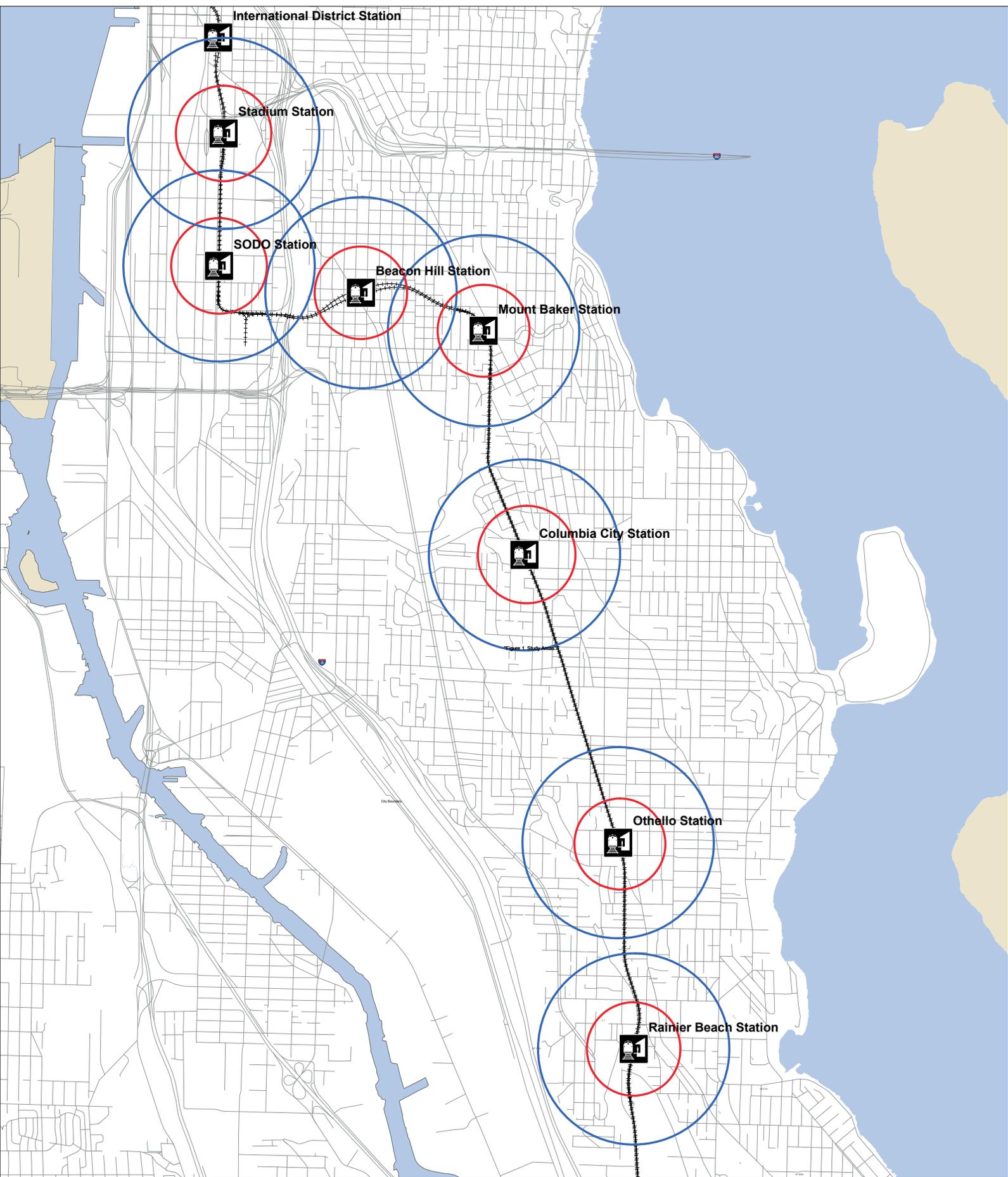
Light rail operations began in July 2009. In fall 2010, the first post-operation monitoring study was performed to determine how parking had been affected in the station area.¹ This 2012 report presents the third round of post-implementation monitoring in the station areas.

As in all previous years, data collection for monitoring the Link light rail 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 business permit numbers were also collected to determine if occupancies and usage were within ranges stipulated by the pilot business permit program.

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.



Key:

- 1/4 Mile Area
- 1/2 Mile Area

Figure 1. Study Areas

The number of parking spaces within a ¼-mile and ½-mile radius of each station was originally inventoried in 2008. Certain streets within the radius area were excluded from each station's study area 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 updated during both the 2011 and 2012 surveys, which accounts for additional changes to both the supply and parking restrictions.² Maps of each station area are included in Appendix A.

The number of vehicles parked in each of the seven study areas was surveyed mid-week (Tuesday, Wednesday and/or Thursday) during the second and third week in October 2012. The counts were performed from 9:00 A.M. to 11:00 A.M. and from 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 blockface are provided in Appendix B (under separate cover).

As shown in the tables, the highest increase in parking utilization in the past three years has occurred near the Stadium station, but utilization is still lower than before LINK service began. At SODO, there was a slight increase (2%) in utilization rates this year in the PM period. Neither of these stations has an RPZ. At the other stations with an RPZ—Beacon Hill, Mount Baker, Columbia City, Othello, and Rainier—the utilization rates have remained fairly consistent over the past three years. Overall, parking utilization at the stations with RPZs has remained below 45%.

² It is noted that since the last monitoring report in 2011, many new streets have been constructed in the vicinity of the Columbia City station area east of Martin Luther King Jr. Way S between S Dakota Street to S Oregon Street, and many new residences are occupied. However, because these new streets are not included in the RPZ, these new streets were not added to the monitoring area for that station area.

Table 1. Morning Parking Utilization Comparison (9:00 – 11:00 AM)

Station Areas	2008 Utilization ¹			2010 Utilization ²			2011 Utilization ²			2012 Utilization ²		
	Quarter-Mile	Half-Mile ³	Total Area									
Stadium	81%	61%	67%	66%	58%	61%	70%	60%	63%	77%	66%	69%
SODO	71%	70%	70%	66%	72%	70%	66%	69%	68%	68%	72%	71%
Beacon Hill	40%	35%	38%	31%	30%	31%	29%	34%	32%	30%	31%	31%
Mount Baker	45%	49%	47%	39%	49%	45%	34%	43%	40%	34%	45%	40%
Columbia City	34%	43%	39%	28%	37%	34%	27%	41%	35%	27%	42%	36%
Othello	35%	27%	29%	23%	27%	26%	26%	26%	26%	23%	24%	24%
Rainier	18%	23%	23%	25%	20%	22%	20%	23%	22%	21%	24%	23%

Table 2. Afternoon Parking Utilization Comparison (1:00 – 3:00 PM)

Station Areas	2008 Utilization ¹			2010 Utilization ²			2011 Utilization ²			2012 Utilization ²		
	Quarter-Mile	Half-Mile ³	Total Area									
Stadium	85%	72%	76%	68%	62%	64%	72%	71%	71%	77%	69%	71%
SODO	68%	76%	73%	66%	77%	73%	61%	73%	69%	70%	74%	73%
Beacon Hill	37%	28%	33%	32%	29%	31%	27%	30%	29%	28%	30%	29%
Mount Baker	28%	39%	34%	39%	49%	45%	30%	41%	37%	32%	48%	41%
Columbia City	35%	41%	38%	28%	39%	35%	29%	40%	35%	28%	43%	37%
Othello	32%	24%	26%	27%	25%	26%	26%	23%	24%	24%	25%	25%
Rainier	14%	21%	20%	23%	20%	21%	21%	22%	22%	19%	23%	22%

Table 1 and 2 notes: Utilization is the number of vehicles parked as a percentage of the number of legal parking spaces.

1. Data collected in October and December 2008, and reflect a condition before light rail operations began.
2. For the 2010 study, data were collected in October and November. For the 2011 and 2012 study, data were collected in October.
3. Located within ¼ to ½-mile radius of the station.

3. Weekend Utilization

Weekend parking utilization data were collected to evaluate the impact of a Seahawks game at Century Link Field. Parking data were collected at Beacon Hill, Mt Baker and Columbia City based on community input received by SDOT. Those who use light rail to travel to the game are likely to park as close as possible to the station, thus blockfaces within ¼-mile radius of the stations were evaluated for each station.

Parking data were collected on a Seahawks Sunday game day and a non-game Sunday. The 2012 surveyed game day was Sunday, November 4, 2012 (the opponent was the Minnesota Vikings) and the non-game day was Sunday, November 18, 2012. 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 for all four study years. Parking utilization by blockface for these Sunday conditions is presented in Appendix B. The results are discussed below.

Beacon Hill

Parking utilization within ¼-mile of the Beacon Hill station increased by 6% between a non-game Sunday and a Seahawks Sunday in 2012. However, the increase was more substantial close to the station. Within approximately 800-foot walking distance of the station (about 62 blockfaces), non-game Sunday utilization was 43% and the game Sunday utilization was 68%. 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 57% and game day was 92%.

Mount Baker

The parking utilization within the entire ¼-mile radius of the Mount Baker station area was lower on a game day than a non-game day. 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. The most significant increase in utilization between the two Sundays was on S Forest Street between 26th Avenue S and Rainier Avenue; non-game day utilization was 38% and game day utilization was 125%. (Utilization rates over 100% occur due to vehicles that are either illegally parked or squeezed into spaces). This location is 400 feet from the station and there are sidewalks providing accessibility to the light rail station. For all three years following the opening of the light rail stations, the difference in utilization rates at this location between a game day and a non-game day has been 50% or greater. In 2008, the non-game day utilization rate was 0% on these block faces.

Columbia City

The parking utilization within ¼-mile radius of the Columbia City station showed a 7% increase between a game day and a non-game day for spaces located within ¼ mile radius of the station. 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 47% and the Sunday game utilization was 50%.

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)		2012 Utilization (within ¼ mile)	
	Game Day ¹	Non-Game Day ¹	Game Day ²	Non-Game Day ²	Game Day ³	Non-Game Day ³	Game Day ⁴	Non-Game Day ⁴
Beacon Hill	39%	42%	41%	39%	39%	37%	41%	35%
Mount Baker	31%	43%	43%	44%	37%	33%	30%	34%
Columbia City	32%	34%	31%	29%	34%	35%	38%	31%

1. Game Day data collection on Sunday, October 26, 2008; Non-Game Day data collection on Saturday, October 25, 2008
2. Game Day data collection on Sunday, November 7, 2010; Non-Game Day data collection on Sundays November 14, 2010 and January 9 2011
3. Game Day data collection on Sunday, November 13, 2011; Non-Game Day data collection on Sunday, November 6, 2011
4. Game Day data collection on Sunday, November 4, 2012; Non-Game Day data collection on Sunday, November 18, 2012

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 located in RPZs along 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 RPZ 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 blockfaces that were at 65% or greater utilization during the prior data collection. This would ensure that all blockfaces with greater than 75% utilization were captured even if there were day-to-day fluctuations in occupancy. Parking occupancy data were recorded at the same time RPZ permit information was recorded, and only those blockfaces 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 on weekdays in late October and early November, 2012. Table 4 presents the blockfaces with greater than 75% parking utilization. There were no station areas where more than 25% of the blockfaces exceeded 75% utilization.

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

Station Area	Number of blockfaces with RPZ ¹	Time Period	Parking Utilization Greater than 75% ²	
			Number of affected blockfaces	Percent of affected blockfaces
Beacon Hill	196	AM	4	2.0%
		PM	8	4.1%
Mount Baker	109	AM	2	1.8%
		PM	3	2.8%
Columbia City	93	AM	8	8.5%
		PM	7	7.5%
Othello	56	AM	5	8.9%
		PM	6	10.7%
Rainier Beach	38	AM	1	2.6%
		PM	1	2.6%

Note: This information reflects analysis in 2012.

1. Source: Seattle Department of Transportation, December, 2012. These blockface numbers reflect adjustments made in 2012.
2. Source: Heffron Transportation, Inc., December, 2012

5. Changes in the RPZs

In 2009 and 2010, 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. In 2011, each RPZ permit cost \$65 and permits for households that demonstrated a financial burden were available for \$10. Table 5 shows the two years when permits were issued for free, 2009 and 2010, and compares them to the two subsequent years, 2011 and 2012, when permit fees were charged. The comparison shows that the number of permits issued since 2011 decreased 36% for residential permits and 62% for business permits.

Table 5. RPZ Permits Issued

	2009 & 2010		2011 & 2012		% Change (2009-2012)	
	Residents	Business	Residents	Business	Residents	Business
Mount Baker	437	537	322	106	-26%	-80%
Beacon Hill	1,776	175	1,042	145	-41%	-17%
Columbia City	1,375	215	995	119	-28%	-45%
Othello	521	377	330	182	-37%	-52%
Rainier Beach	181	153	59	0	-67%	-100%
Total	4,290	1,457	2,748	552	-36%	-62%

Source: SDOT, December 2012

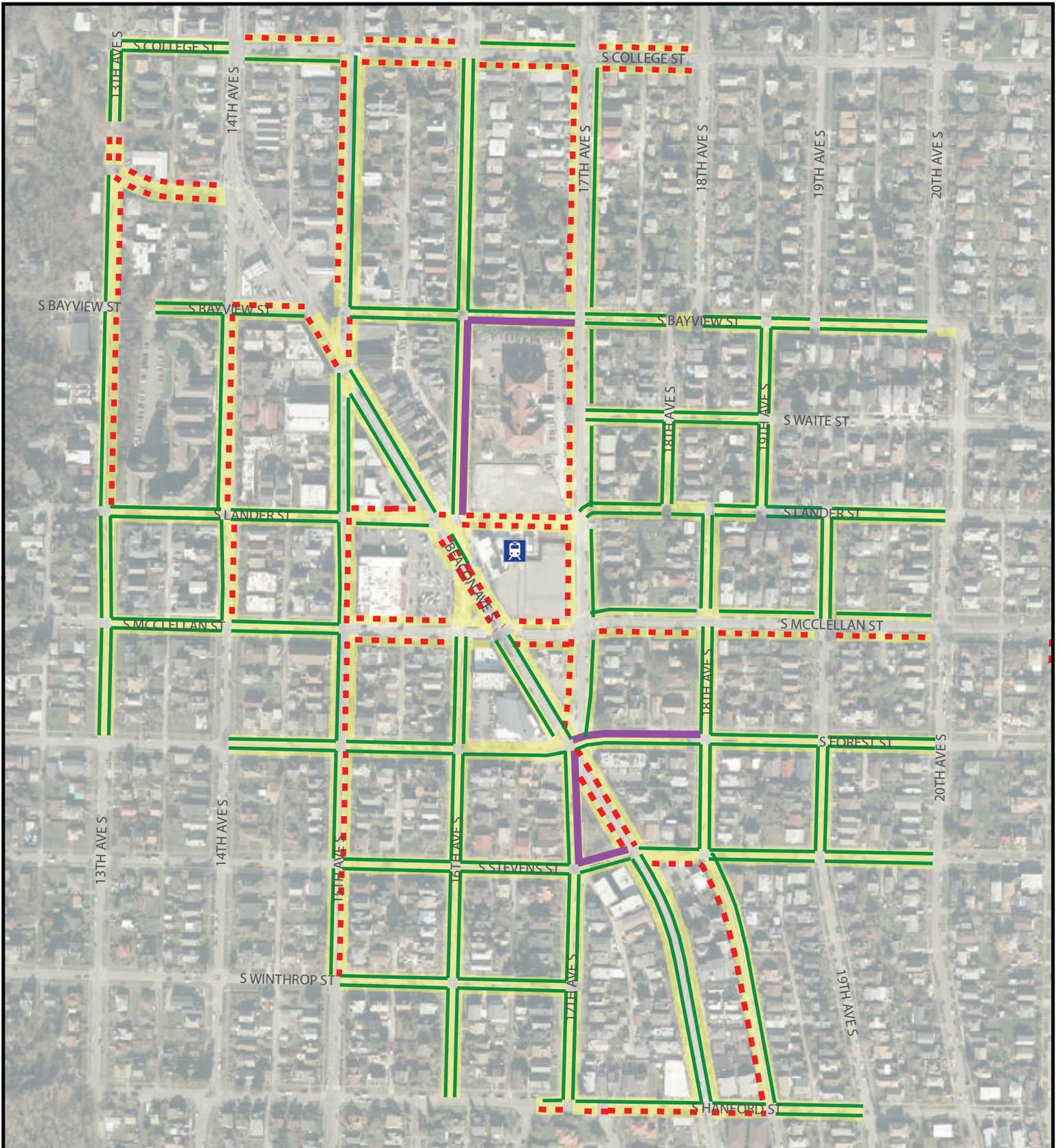
In addition to changes in the number of permits issued, in 2011, some residents from the Beacon Hill, Mount Baker and Columbia City RPZs petitioned for the removal of the RPZ designation from their

block. In 2012, residents from two of the blockfaces that were previously removed from the Beacon Hill RPZ requested to be reinstated to the program.

6. Key findings

- Parking utilization surrounding the light rail stations has not changed substantially between 2008, before light rail service began, and 2012.
- None of the station areas where RPZs exist have exceeded the occupancy thresholds established by the City Council that would cause the City to cease the issuance of permits to businesses.
- Parking occupancy very near the Beacon Hill, Mount Baker, and Columbia City stations increases substantially during Seahawks games. Parking restrictions are not in effect on Sundays near these stations.
- The number of permits issued to residents and businesses has decreased since the program started. In 2009 and 2010 the permits were issued for free. A permit fee has been charged for since 2011. Also since 2011, the number of residential permits issued has decreased by 36% and the number of business permits has decreased by 62%. The reduction in permits issued has not changed parking utilization in the neighborhoods.

APPENDIX A STATION AREA MAPS



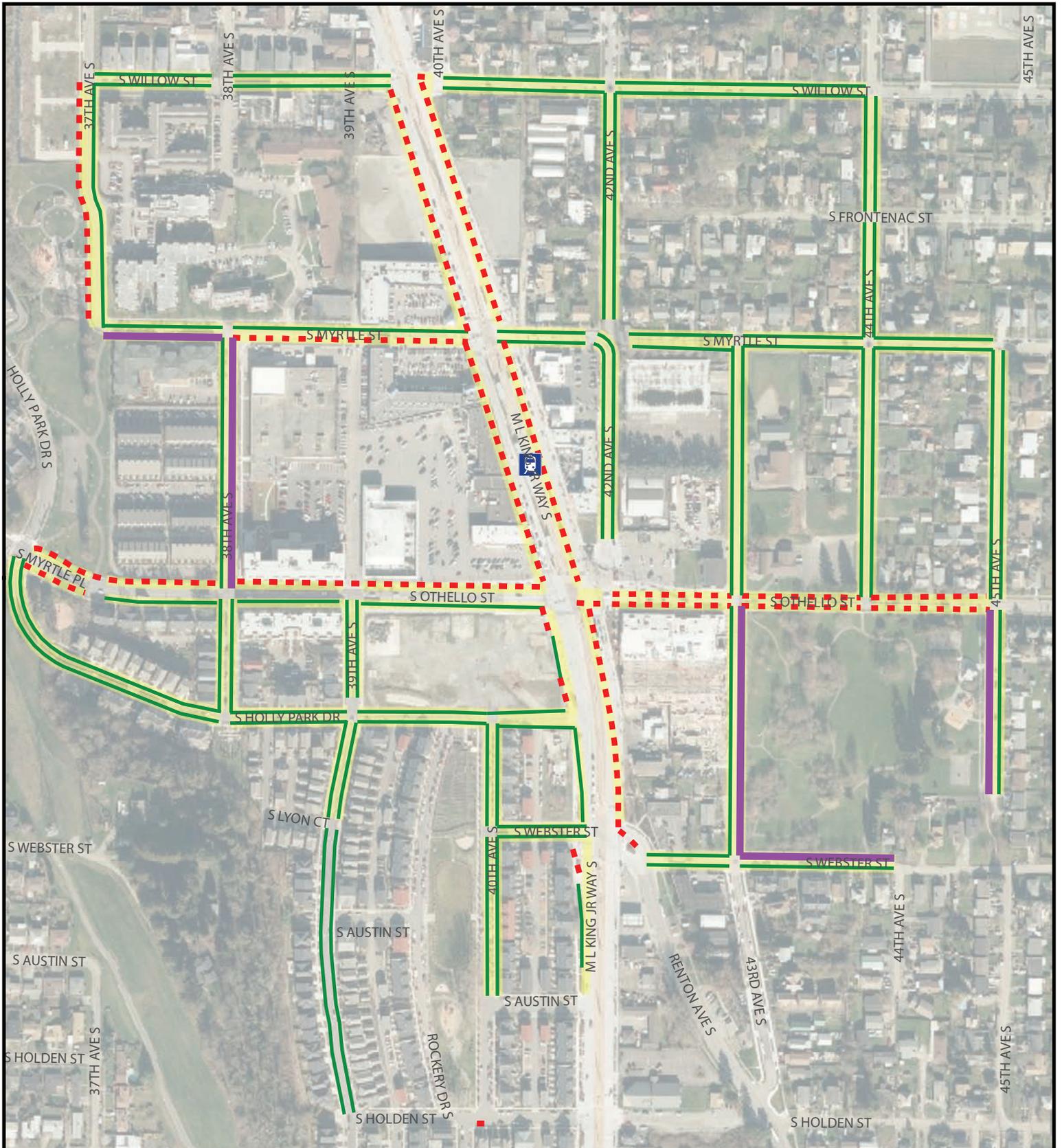
Legend

- | | | |
|---|--------------------|--|
|  | 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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 or merchantability, accompany this product.
 Coordinate System: State Plane,
 NAD83-91, Washington, North Zone
 Orthophoto Source: Pictometry 2007
 PLOT DATE : 3/22/12
 AUTHOR : P&P GIS
 <Map Location>



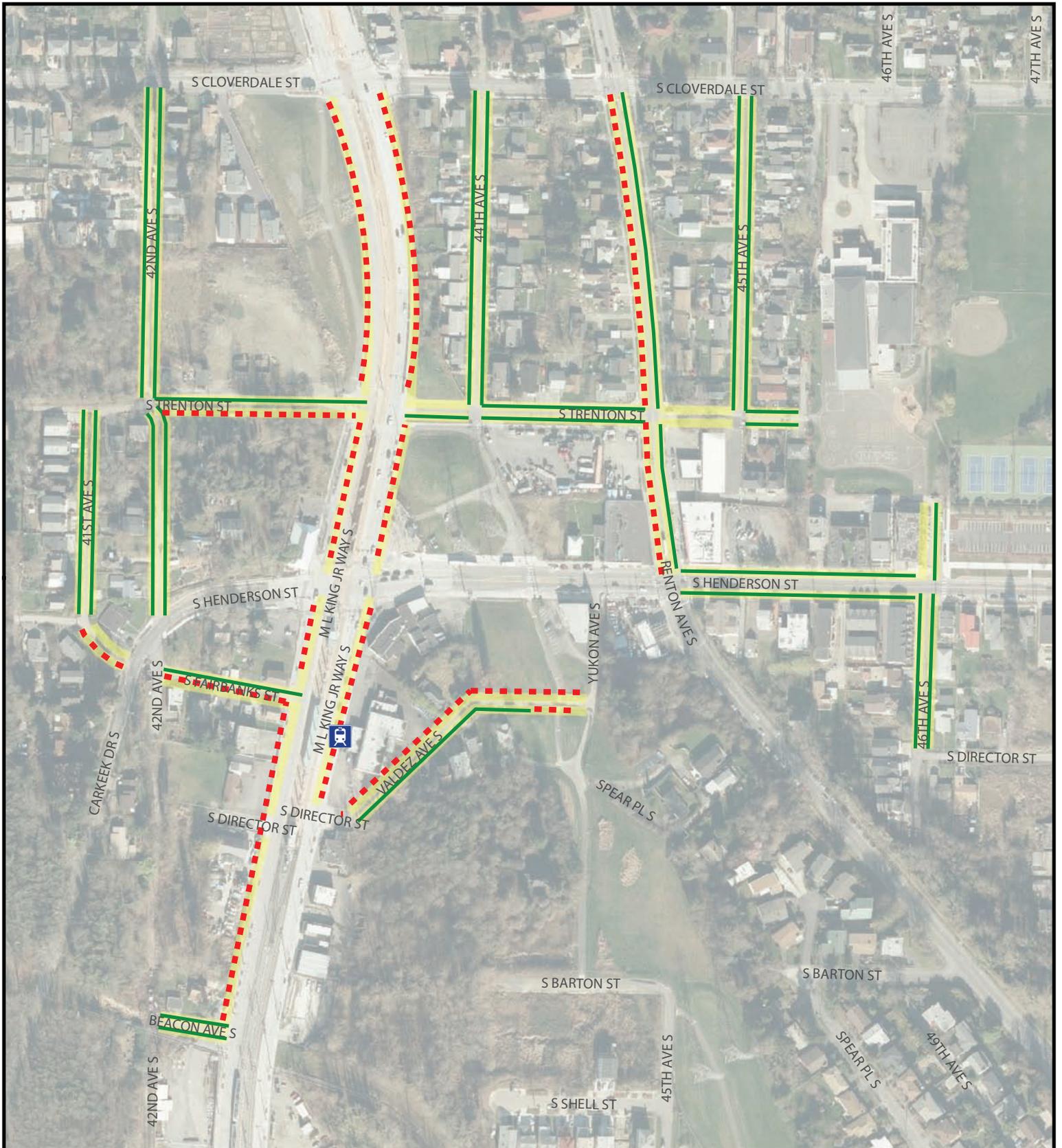
Legend

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

Othello Station RPZ Parking Regulations



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 Orthophoto Source: Pictometry 2007
 PLOT DATE : 3/22/12
 AUTHOR : P&P GIS
 <Map Location>



Legend

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



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 PLOT DATE : 3/22/12
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Rainier Beach Station RPZ Parking Regulations