

DRAFT SUBMITTAL

March 21, 2017

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MADISON STREET BUS RAPID TRANSIT (BRT) PARKING STUDY



CM DESIGN GROUP

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1 PROJECT OVERVIEW

1.1 PROJECT DESCRIPTION AND LOCATION

The Madison Street Bus Rapid Transit (BRT) Project proposes to improve transit in the east-west Madison corridor between First Avenue and the Madison Valley by providing high-frequency, fast, reliable and safe public transportation. Madison Street BRT will include 14 new bus stations and roadway improvements with convenient connections to the First Avenue Streetcar, Coleman Dock Ferries, the LINK light rail, and Broadway Avenue Streetcar.

Along the corridor the bus will either share a lane with other traffic, have a dedicated center bus lane, or use a curb-side bus only lane.

Figure 2 depicts the different lane types and locations where those configurations will be along the corridor. To accommodate the bus lanes and stations, on-street parking on the corridor will be removed in some areas.

This study will identify parking impacts on Madison Street and mitigation options for parking loss. The study area for mitigation options is one block off Madison/Spring Street except on blocks with stations where the study area was extended to two blocks off Madison/Spring Street.

1.2 METHODOLOGY

Potential parking impacts were originally documented in the Madison Corridor BRT Study Parking and Loading Impacts (see Appendix A). This document further addresses parking along the corridor as the project moves through the design process. The following steps were taken in preparing this report.

To begin with the following documents were reviewed:

- City of Seattle parking policies
- Pike-Pine Parking Management Off-Street Parking Occupancy Survey
- Appendix C Parking Impacts
- City Center Connector Streetcar EA – Parking section



Figure 1 – Route Map and Station Locations

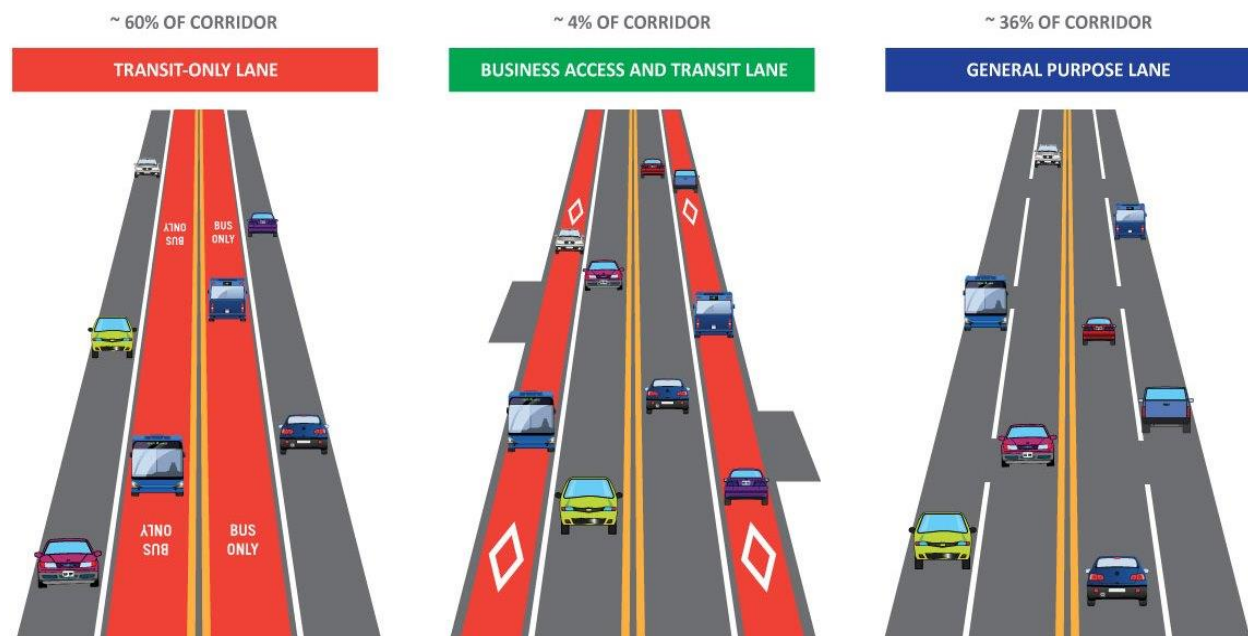


Figure 2 – Lane Configurations

The next step was to compare the 30% Madison BRT design plans to the earlier parking and loading impacts technical report to confirm and update the loss of parking stalls by type based on the latest design and current curb space management on Madison Street and Spring Street within the project limits.

One important goal of this report is to provide mitigation options for those losses, especially for commercial and pedestrian loading zones. Existing on-street parking was reviewed on adjacent side streets and private parking garages and surface lots to determine utilization and identify options for parking loss on Madison Street.

1.3 SEATTLE PARKING POLICIES

Curb space is part of the public street system, and as such it is a public good available for all users. The Seattle Department of Transportation regulates the use of curb space to address competing needs, to assist in moving people and goods more efficiently, to support the vitality of business districts, and to create livable neighborhoods. The Department prioritizes the uses for curb space as follows:

In residential areas the priorities for curb space use are:

- Transit use (bus stops and spaces for bus layover)
- Passenger and commercial vehicle loading zones
- Parking for local residents and for shared vehicles
- Travel lanes for vehicular capacity

In business or commercial areas, including blocks with mixed-use buildings containing

residential units, the priorities for curb space use are:

- Transit use (bus stops and spaces for bus layover)
- Passenger and commercial vehicle loading zones
- Short-term customer parking (time limit signs and paid parking typically for 1- or 2-hours)
- Parking for shared vehicles
- Travel lanes for vehicular capacity

The Department strives to balance the diverse and competing needs for curb spaces uses, and considers the adjacent land uses both in terms of each specific block as well as the larger surrounding area. In general the City's priorities (as stated in the Comprehensive Plan and other similar documents) do not support the use of on-street parking for all-day (6 hours or more) commuter parking.

2 REVIEW OF EXISTING DOCUMENTS

2.1 PIKE-PINE PARKING MANAGEMENT OFF-STREET PARKING OCCUPANCY SURVEY

This study was prepared by Heffron Transportation, Inc. in December 2014. The boundaries of the report were

- North – E Olive St
- South – E Madison St
- West - I-5
- East – 15th Avenue

At the time of the study there were 31 off-street parking facilities that offered public parking in the study area and were classified as follows:

- Stand-alone Public Garage
- Private Residential Garages with some Public Spaces
- Public Surface Lots
- Private Weekday Surface Lot with Public Evening Spaces

Major findings of that report as they relate to parking impacts and demands for the Madison corridor are as follows:

- There were a total of 1,838 off-street parking spaces available for public parking in the Pike-Pine study area: 1,131 in garages and 707 in surface parking lots.
- Overall, the off-street parking was 74% utilized during the weekday afternoon and 38% utilized on a Friday evening.
- During the weekday afternoons, the stand-alone public garages had the highest occupancy with overall utilization rates of 81%. The utilization rates ranged from 57% to 89% for the standalone garages.
- The overall weekday utilization rate for public surface lots was 74% and the utilization rates
- Ranged from 11% to 94%. Ten of the fifteen public surface lots had weekday utilization rates over 85%.

2.2 MADISON CORRIDOR BRT PARKING AND LOADING IMPACTS TECHNICAL REPORT

The Parking and Loading Impacts report was prepared in February 2016 as part of the Madison Corridor BRT Study Final Report. This document describes on-street parking and loading impacts for the Locally Preferred Alternative (LPA). It also evaluates potential mitigation approaches to address the loss of on-street parking.

3 PARKING DATA AND IMPACTS

3.1 PARKING COUNT DATA

An updated summary of the proposed on-street parking counts on Spring Street and Madison Street along the project corridor is shown in Table 1. The format follows the counts originally provided in the initial Parking and Loading Impacts Technical Report, but the data has been updated to reflect current parking and proposed impacts based on the 60% design.

The category “All-Day Parking” means that parking is allowed all day, although there may be time limitations, and generally the on-street parking is metered. The category “Peak-Restricted Parking” means no parking is allowed during either Peak AM (7AM – 9AM) or Peak PM (4PM – 6PM) hours. Table 2 breaks this information down by segment, and Table 3 breaks the information down block by block.

Table 1 – Summary of Parking Impacts

Category	Existing	Projected	Change
All-Day Parking	263	175	-88
Peak-Restricted Parking	96	6	-90
Commercial Loading	12	7	-5
Passenger Loading	13	8	-5
Total	384	196	-188

Table 2 – Summary of Parking Impacts by Segment

Segment	Downtown (1 st Ave to 6 th Ave)			First Hill (6 th to Broadway)			Capitol Hill (Broadway to 26 th , north side of Madison)			Central Area (Broadway to 26 th , south side of Madison)			Madison Valley (26 th to MLK Jr Way)		
	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change
All-Day Parking	57	27	-30	68	54	-14	47	44	-3	44	21	-23	47	29	-18
Peak-Restricted Parking	15	0	-15	39	0	-39	21	3	-19	21	3	-18	0	0	0
Commercial Loading	1	0	-1	3	1	-2	1	1	0	1	0	-1	3	3	0
Passenger Loading	7	7	0	5	2	-3	1	1	0	3	2	-1	0	0	0
Total	80	34	-46	115	57	-58	70	49	-22	69	26	-43	50	32	-18

Downtown – In addition to the parking losses noted above, 10 police vehicle spaces are removed on Spring between 2nd Street and 3rd Street. It is assumed the agency will provide alternate parking. US Marshall vehicle spaces on the south side of Madison between 5th Avenue and 6th Avenue are will not be impacted.

Table 3 – Block by Block Parking Counts

Segment	Corner	All Day Peak		Parking Restricted		Commercial Loading		Passenger Loading	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
Spring St									
1 st Ave to 2 nd Ave	SE	0	0	0	0	0	0	0	0
1 st Ave to 2 nd Ave	NW	15	0	0	0	0	0	0	0
2 nd Ave to 3 rd Ave	SE	0	0	0	0	0	0	0	0
2 nd Ave to 3 rd Ave	NW	0	0	0	0	1	0	0	0
3 rd Ave to 4 th Ave	SE	0	0	0	0	0	0	0	0
3 rd Ave to 4 th Ave	NW	0	0	11	0	0	0	0	0
4 th Ave to 5 th Ave	SE	0	0	4	0	0	0	0	0
4 th Ave to 5 th Ave	NW	0	3	0	0	0	0	2	2
5 th Ave to 6 th Ave	SE	0	0	0	0	0	0	0	0
5 th Ave to 6 th Ave	NW	9	9	0	0	0	0	0	0
6 th Ave to 7 th Ave	SE	0	0	0	0	0	0	0	0
6 th Ave to 7 th Ave	NW	10	11	0	0	0	0	0	0
7 th Ave to 8 th Ave	SE	6	6	0	0	0	0	2	2
7 th Ave to 8 th Ave	NW	10	11	0	0	0	0	0	0
8 th Ave to 9 th Ave	SE	8	9	0	0	1	1	0	0
8 th Ave to 9 th Ave	NW	10	11	0	0	0	0	0	0
9th Ave									
Spring St to Madison St	SW	6	6	0	0	0	0	0	0
Spring St to Madison St	NE	7	0	0	0	0	0	0	0
Madison St									
1 st Ave to 2 nd Ave	SE	0	3	0	0	0	0	0	0
1 st Ave to 2 nd Ave	NW	0	0	0	0	0	0	0	0
2 nd Ave to 3 rd Ave	SE	11	4	0	0	0	0	0	0
2 nd Ave to 3 rd Ave	NW	0	0	0	0	0	0	0	0
3 rd Ave to 4 th Ave	SE	15	5	0	0	0	0	1	1
3 rd Ave to 4 th Ave	NW	0	0	0	0	0	0	0	0
4 th Ave to 5 th Ave	SE	7	3	0	0	0	0	2	2
4 th Ave to 5 th Ave	NW	0	0	0	0	0	0	0	0
5 th Ave to 6 th Ave	SE	0	0	0	0	0	0	2	2
5 th Ave to 6 th Ave	NW	0	0	0	0	0	0	0	0
6 th Ave to 7 th Ave	SE	11	0	0	0	0	0	0	0
6 th Ave to 7 th Ave	NW	0	0	0	0	0	0	0	0

Table 3 – Block by Block Parking Counts – Continued

Segment	Corner	All Day Peak		Parking Restricted		Commercial Loading		Passenger Loading	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
7 th Ave to 8 th Ave	SE	0	0	7	0	0	0	1	0
7 th Ave to 8 th Ave	NW	0	0	0	0	0	0	0	0
8 th Ave to 9 th Ave	SE	0	0	5	0	0	0	1	0
8 th Ave to 9 th Ave	NW	0	0	0	0	0	0	0	0
9 th Ave to Terry Ave	SE	0	0	6	0	1	0	0	0
9 th Ave to Terry Ave	NW	0	0	0	0	0	0	0	0
Terry Ave to Boren Ave	SE	0	0	7	0	0	0	0	0
Terry Ave to Boren Ave	NW	0	0	0	0	0	0	0	0
Boren Ave to Minor Ave	SE	0	0	8	0	0	0	0	0
Boren Ave to Minor Ave	NW	0	0	0	0	0	0	0	0
Minor Ave to Summit Ave	SE	0	0	0	0	0	0	0	0
Minor Ave to Summit Ave	NW	0	0	0	0	0	0	0	0
Summit Ave to Boylston Ave	SE	0	0	5	0	1	0	0	0
Summit Ave to Boylston Ave	NW	0	0	0	0	0	0	0	0
Boylston Ave to Broadway	SE	0	0	1	0	0	0	1	0
Boylston Ave to Broadway	NW	0	0	0	0	0	0	0	0
Broadway to Broadway Ct	SE	0	0	0	0	0	0	0	0
Broadway to Broadway Ct	NW	0	0	0	0	0	0	0	0
Broadway Ct to 10 th Ave	SE	0	0	3	0	0	0	0	0
Broadway Ct to 10 th Ave	NW	0	0	0	0	0	0	0	0
10 th Ave to E Seneca St	SE	0	0	4	0	1	0	0	0
10 th Ave to E Seneca St	NW	0	0	3	0	0	0	0	0
E Seneca St to 11 th Ave	SE	0	0	0	0	0	0	0	0
E Seneca St to 11 th Ave	NW	0	0	0	0	0	0	0	0
11 th Ave to 12 th Ave	SE	0	0	0	0	0	0	0	0
11 th Ave to 12 th Ave	NW	0	0	0	0	0	0	0	0
12 th Ave to 13 th Ave	SE	0	0	0	0	0	0	0	0
12 th Ave to 13 th Ave	NW	0	0	0	0	0	0	0	0
13 th Ave to 14 th Ave	SE	0	0	7	0	0	0	0	0
13 th Ave to 14 th Ave	NW	0	0	0	0	0	0	0	0
14 th Ave to E Pike St	SE	0	0	4	0	0	0	0	0
14 th Ave to E Pike St	NW	0	0	0	0	0	0	0	0
E Pike St to 15 th Ave	SE	0	0	0	0	0	0	0	0
E Pike St to 15 th Ave	NW	0	0	0	0	0	0	0	0

Table 3 – Block by Block Parking Counts – Continued

Segment	Corner	All Day Peak		Parking Restricted		Commercial Loading		Passenger Loading	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
15 th Ave to 16 th Ave	SE	0	0	0	0	0	0	0	0
15 th Ave to 16 th Ave	NW	0	0	0	0	0	0	0	0
16 th Ave to E Pine St	SE	0	0	0	0	0	0	0	0
16 th Ave to E Pine St	NW	0	0	0	0	0	0	0	0
E Pine St to 17 th Ave	SE	0	0	0	0	0	0	0	0
E Pine St to 17 th Ave	NW	0	0	0	0	0	0	0	0
17 th Ave to 18 th Ave	SE	0	0	0	0	0	0	0	0
17 th Ave to 18 th Ave	NW	0	0	0	0	0	0	0	0
18 th Ave to 19 th Ave	SE	0	0	0	0	0	0	0	0
18 th Ave to 19 th Ave	NW	0	0	0	0	0	0	0	0
19 th Ave to 20 th Ave	SE	0	0	0	0	0	0	0	0
19 th Ave to 20 th Ave	NW	0	0	0	0	0	0	0	0
20 th Ave to E Denny Way	SE	15	0	0	0	0	0	1	0
20 th Ave to E Denny Way	NW	0	0	15	0	0	0	0	0
E Denny Way to 22 nd Ave	SE	0	0	0	0	0	0	0	0
E Denny Way to 22 nd Ave	NW	0	4	0	0	0	0	1	1
22 nd Ave to 23rd Ave	SE	6	3	0	0	0	0	0	0
22 nd Ave to 23rd Ave	NW	13	6	0	0	0	0	0	0
23rd Ave to 24 th Ave	SE	1	1	3	3	0	0	2	2
23rd Ave to 24 th Ave	NW	10	10	3	3	0	0	0	0
24 th Ave to 25 th Ave	SE	8	3	0	0	0	0	0	0
24 th Ave to 25 th Ave	NW	4	4	0	0	1	1	0	0
25 th Ave to 26 th Ave	SE	14	14	0	0	0	0	0	0
25 th Ave to 26 th Ave	NW	20	20	0	0	0	0	0	0
26 th Ave to 27 th Ave	SE	6	6	0	0	0	0	0	0
26 th Ave to 27 th Ave	NW	10	5	0	0	1	1	0	0
27 th Ave to 27 th Ave	SE	1	1	0	0	1	1	0	0
27 th Ave to 27 th Ave	NW	2	2	0	0	0	0	0	0
27 th Ave to MLK Jr Way	SE	10	10	0	0	1	1	0	0
27 th Ave to MLK Jr Way	NW	11	5	0	0	0	0	0	0
Madison to Arthur Pl	E	0	0	0	0	0	0	0	0
Madison to Arthur Pl	W	0	0	0	0	0	0	0	0
At Arthur Pl/Harrison (Traffic Circle)	-	7	0	0	0	0	0	0	0

3.2 PUBLIC PARKING GARAGE AND SURFACE PARKING LOT DATA

As shown in Figure 3, there are numerous private parking facilities adjacent to the Madison corridor that can provide options for the loss of parking. In general, current utilization for the downtown garages is roughly 75%. Data for the garages is listed in Table 4.



Figure 3 – Parking Garage Locations

Table 4 – Parking Garage and Surface Lot Counts

Garage No.	Owner	Address	Number of Stalls	Used	Util.	Avail.
1	Diamond	1206 1 st Ave	28	21	75%	7
2	LAZ	1100 1 st Ave	161	121	75%	40
3	IPM	800 1 st Ave	289	217	75%	72
4	Diamond	1221 2 nd Ave	75	56	75%	19
5	Second & Seneca	1191 2 nd Ave	392	294	75%	98
6	Ace Parking	1100 2 nd Ave	69	52	75%	17
7	Diamond	1201 3rd Ave	808	606	75%	202
8	Ace Parking	1111 3rd Ave	366	275	75%	92
9	Expiditor	1015 3rd Ave	154	116	75%	39
10	Ace Parking	999 3rd Ave	676	507	75%	169
11	Cascade	823 3rd Ave	37	28	75%	9
12	IMPark	1218 3rd Ave	53	40	75%	13
13	Diamond	925 4 th Ave	500	375	75%	125
14	Diamond	1001 4 th Ave	584	438	75%	146
15	Jerry's Garage	801 4 th Ave	130	98	75%	33
16	ABM Parking	1000 4 th Ave	150	113	75%	38
17	Ace Parking	415 Seneca St	624	468	75%	156
18	SP Parking	901 5 th Ave	241	181	75%	60
19	IBM	1200 5 th Ave	158	119	75%	40
20	800	800 5 th Ave	496	372	75%	124
21	Ace Parking	1217 6 th Ave	85	64	75%	21
22	Crowne Plaza	1113 6 th Ave	98	74	75%	25
23	Renaissance Madison	515 Madison St	196	147	75%	49
24	The Polyclinic	904 7 th Ave	200	200	100%	0
25	Ace Parking	1200 6 th Ave	165	124	75%	41
26	Diamond	1013 8 th Ave	16	16	100%	0
27	The Polyclinic	751 Marion St	450	405	90%	45
28	Key Park NW	Madison & 8 th SW corner	60	56	93%	4
29	Virginia Mason	1123 9 th Ave	305	293	96%	12
30	U-Park	820 8 th Ave	52	49	94%	3
31	ImPark	811 9 th Ave	29	21	72%	8
32	Cabrini Tower	1010 Marion St	47	42	90%	5
33	Swedish	1101 Madison St	1025	923	90%	103
34	Republic Parking	1124 Columbia St	415	374	90%	42
35	Nordstrom Tower	1221 Madison St	430	387	90%	43
36	Swedish	747 Broadway	575	518	90%	58

Table 4 – Parking Garage and Surface Lot Counts – Continued

Garage No.	Owner	Address	Number of Stalls	Used	Util.	Avail.
37	First Hill Plaza	1300 Madison St	46	37	80%	9
38	U-Park (Lot #91)	1140 Boylston Ave	80	36	45%	44
39	Eye Care Center	1014 Boylston Ave	23	13	57%	10
40	U-Park	1020 Boylston Ave	16	14	88%	2
41	Swedish	1401 Madison St	53	42	79%	11
42	The Polyclinic	1145 Broadway	293	264	90%	29
43	Diamond	1120 Broadway	84	48	57%	36
44	Diamond	1161 11 th Ave	6	4	67%	2
45	Diamond	1412 12 th Ave E	29	22	76%	7
46	Bank of America	1300 E Madison St	21	8	38%	13
47	Diamond	1300 E Pike St	11	10	91%	1
48	United	1314 E Pike St	13	7	54%	6
49	REO	1515 14 th Ave	21	15	71%	6
50	Diamond	1401 E Madison St	48	39	81%	9
51	Diamond	1522 14 th Ave	11	0	0%	11
52	VOX	1527 15 th Ave	12	4	33%	8
53	Diamond	1634 19 th Ave	35	21	60%	14
54	Diamond	2100 E Madison St	12	12	100%	0
55	Diamond	2811 E Madison St	10	4	40%	6
					Total	2,179

Available Parking Spaces by Segment

Downtown	1,634
First Hill	427
Capitol Hill	90
Central Area	23
Madison Valley	6

3.3 SIDE STREET DATA

Table 5 summarizes the parking utilization for side streets within one to two blocks of the Madison Corridor. Complete block by block counts are available in Appendix C.

Table 5 – Side Street Parking Utilization

	Downtown (1 st Ave to 6 th Ave)			First Hill (6 th to Broadway)			Capitol Hill (Broadway to 26 th , north side of Madison)			Central Area (Broadway to 26 th , south side of Madison)			Madison Valley (26 th to MLK Jr Way)		
	Available	Used	% Utilized	Available	Used	% Utilized	Available	Used	% Utilized	Available	Used	% Utilized	Available	Used	% Utilized
All-Day Parking	0	0	100	161	144	89	290	220	76	227	196	86	100	51	51
Peak-Restricted Parking	29	23	79	0	0	N/A	0	0	N/A	0	0	N/A	0	0	N/A
Commercial Loading	6	3	50	3	1	33	2	0	0	0	0	N/A	0	0	N/A
Passenger Loading	8	8	100	23	13	57	21	4	19	15	3	20	2	1	50

4 RECOMMENDATIONS

4.1 MITIGATION OPTIONS

The following table lists mitigation options for locations where any passenger or commercial load zones are impacted, or where three or more parking spaces are removed. Where garages or surface lots are listed as an option, the address is provided along with the number of parking stalls. The current parking utilization is listed in parenthesis after the number of stalls. See Appendix D for additional information on existing and proposed load zones.

Table 6 – Parking Loss Mitigation Options

Block Face	Side of Street	Parking Loss Type	Mitigation/Options (Utilization)
SPRING STREET			
1 st to 2 nd	North	15 carpool	Garage 1101 1 st - 161 (75%); Garage 1191 2 nd – 392 (75%)
2 nd to 3 rd	North	1 commercial load zone	Remove - This commercial load zone was provided for a previous tenant that provided delivery service (flower shop). All commercial load is now provided by the building garage. No mitigation necessary.
2 nd to 3 rd	North	10 police vehicle	Agency will mitigate for any needed parking loss
3 rd to 4 th	North	11 restricted	Garage 1001 4 th – 584 (75%)
3 rd to 4 th	South	4 restricted	Garage 1001 4 th – 584 (75%)
7 th to 8 th	South	2 passenger load	Replaced with 2 school load zones 50' west on same block
MADISON STREET			
1 st to 2 nd	South	8 federal vehicles	Agency to provide mitigation for parking loss
2 nd to 3 rd	South	7 all day peak	Garage 999 3 rd – 676 (75%); Garage 1015 3 rd - 154 (75%)
4 th to 5 th	South	4 all day peak	Garage 901 5 th – 241 (75%)
6 th to 7 th	South	11 peak restricted	Garage 515 Madison St – 196 (75%)
7 th to 8 th	South	7 all day peak	Garage 904 7 th – 200 (90%)
7 th to 8 th	South	1 passenger load	Remove - 1 existing load within 100' on 7 th at Madison
8 th to 9 th	South	7 all day peak	Garage 910 8 th Ave – 210 (90%)
8 th to 9 th	South	1 passenger load	Convert parking on 9 th to passenger load
9 th to Terry	South	6 all day peak	Garage 1010 Marion St – 218 (90%) (2 blocks away)
9 th to Terry	South	1 commercial load	Convert parking on 9 th to commercial load
Terry to Boren	South	7 all day peak	Garage 1010 Marion St – 218 (90%)
Boren to Minor	South	8 all day peak	Garage 1101 Madison – 1025 (90%)
Boylston to Broadway	South	1 passenger load	Remove - 2 existing passenger load in at-grade parking lot of building
Broadway Ct to 10th	South	3 restricted parking	Garage 1120 Broadway – 140 stalls
10 th to Seneca	South	4 restricted parking	Garage 1120 Broadway – 140 stalls
10 th to Seneca	South	1 commercial load	Remove - Access provided within Seattle U campus
10 th to Seneca	North	3 restricted parking	Adjacent Seattle U parking lots
13 th to 14 th	South	7 restricted	Adjacent side street parking (73%)
14 th to Pike	South	4 restricted	Garage 1401 Pike – 44 stalls (not yet constructed)
20 th to E Denny	South	15 all day peak	Adjacent side street parking – 36 stalls (86%)
20 th to E Denny	South	1 passenger load	Convert parking on 22 nd to passenger load
20 th to E Denny	North	15 restricted parking	Surface Lot 1623 19 th – 34 stalls (60%)
22 nd to 23 rd	North	7 all day peak	Adjacent side street parking – 19 stalls (78%)
24 th to 25 th	South	5 all day peak	Adjacent side street parking – 143 stalls (76%)
26 th to 27 th	South	5 all day peak	Adjacent side street parking – 49 stalls (43%)
27 th to MLK Jr Way	South	6 all day peak	Adjacent side street parking – 51 stalls (59%)

5 CONCLUSION

Existing passenger and commercial loading zones that cannot remain on Madison Street will be accommodated as close to the existing location as possible on adjacent side streets. The loading zones will be accommodated at a one-to-one ratio.

Roughly 65% of existing on street parking between 1st Avenue and Denny Way will be removed. Enough close proximity parking is available in private garages and surface parking lots in Downtown (1634 stalls), First Hill (427 stalls) and Capitol Hill (90 stalls) areas to offset the loss of the 120 parking spaces on Madison Street and Spring Street.

Roughly 78% of existing on street parking stalls between Denny Way and Martin Luther King Jr Way will remain. There are fewer private garages and surface parking lots in the Central Area and Madison Valley to accommodate the loss of parking. However, private parking lots in combination with the underutilized parking on the adjacent side streets provides enough parking to offset the loss of parking on Madison Street. In the Central Area there are roughly 54 available parking stalls in parking lots and side streets to offset the loss of 41 parking stalls in this neighborhood. In Madison Valley, parking lots and side streets can provide roughly 55 parking stalls to offset the loss of 18 parking stalls in this neighborhood.

Appendix A – Technical Memorandum Pike-Pine Parking Management

TECHNICAL MEMORANDUM

Project: Pike-Pine Parking Management
Subject: Off-Street Parking Occupancy Survey
Date: December 22, 2014
Author: Marni C. Heffron, P.E., P.T.O.E.
Julie A. Bussing

This memorandum summarizes the findings of the Pike-Pine Off-Street Parking Survey performed for the Seattle Department of Transportation (SDOT) in Fall 2014. The purpose of the study was to collect parking occupancy data for off-street parking facilities to complement recently-collected on-street data. Together these datasets provide a comprehensive account of parking in the Pike-Pine neighborhood.

1. Parking Survey

1.1. Study Area and Off-Street Parking Supply

Figure 1 shows the study area for the Pike-Pine Off-Street Parking Survey. The boundaries are E Olive Street to the north, E Union Street and E Madison Street to the south, Interstate 5 (I-5) to the west, and 15th Avenue to the east. There are 31 off-street parking facilities that offer public parking in this area, which are identified on Figure 1. Facility identification numbers on the map are referenced to the survey database and results described later in this report.

Table 1 summarizes the off-street parking facilities information. Of the 31 facilities surveyed, 24 offer public parking at all times of day; however, seven are reserved for private business use during the day, and are only available in the evening. The hours of operation vary by lot.

Table 1. Summary of Off-Street Parking Types

Type of Facility	Number of Facilities	Total Number of Spaces
Stand-Alone Public Garage	4	998
Private Residential Garages with Public Spaces	5	133
Public Surface Lots	15	593
Private Weekday Surface Lot with Public Evening Spaces	7	114
Total	31	1,838

Source: Heffron Transportation, Inc., October 2014.



KEY

----- Study Area Boundary

Off-Street Parking Locations

PIKE-PINE NEIGHBORHOOD OFF-STREET PARKING

Figure 1
Off-Street Parking Locations

1.2. Methodology

Parking occupancy data were collected for two time periods: a mid-week afternoon survey was conducted between 12:00 and 3:00 P.M., and a Friday evening survey was conducted between 6:30 and 9:30 P.M. The afternoon surveys were conducted on Thursday October 16, 2014 and Tuesday October 28, 2014. The Friday evening survey was conducted on October 17, 2014.

In addition to collecting parking occupancy information, the parking supply of each off-street location was confirmed, and data were collected regarding hours of operation, rates, and parking space attributes. Detailed data collected for this study are available in external databases and the attached spreadsheets.

2. Parking Occupancy Survey Results

The parking survey data were compiled to show various metrics for each facility. The following tables are attached and show the following:

Table 2. Off-Street Parking Occupancy Survey Results – This table summarizes parking utilization for each subarea during the weekday periods. Parking utilization is defined as the number of parked vehicles divided by the number of available parking spaces.

Table 3. Daytime Hours and Rates by Facility – In this table, the daytime rates are broken down into the costs for the first four hours, the all-day costs, and the early bird rates. The all-day costs were generally defined as the rate for a 10-hour parking time limit. All-day costs are provided for those off-street facilities that specifically identify those rates. Surface lots that are reserved during the day are not included in this table.

Table 4. Evening and Weekend Hours and Rates by Facility – This table summarizes the evening and weekend hours and rates and includes all facilities.

Table 5. Comparison of On-Street and Off-Street Rates – This table summarizes the average rates by type of facility and compares those rates to on-street rates.

3. Findings

- There are a total of 1,838 off-street parking spaces that are available for public parking in the Pike-Pine study area: 1,131 in garages and 707 in surface parking lots.
- Overall, the off-street parking is 74% utilized during the weekday afternoon and 38% utilized on a Friday evening.
- During the weekday afternoons, the stand-alone garages have the highest occupancy with overall utilization rates of 81%. The utilization rates ranged from 57% to 89% for the stand-alone garages.
- The overall weekday utilization rate for public surface lots was 74% and the utilization rates ranged from 11% to 94%. Ten of the fifteen public surface lots had weekday utilization rates over 85%.

- Of the 31 off-street facilities, nine post early bird rates and 16 post all day rates.
- It costs less to park on-street for less than four hours than to park in an off-street facility. The all day rates at all off-street facilities are lower than paying for a full 10 hours at applicable on-street pay stations that offer that length of stay.
- On Friday evenings, the highest occupancy occurred in the surface lots with an overall utilization rate of 48%. Lots in close vicinity to evening activities were 100% occupied, though some lots just over a block away had utilization rates under 40%. It is noted that some lots are not user-friendly in the evening due to inadequate lighting and undiscernible parking information.
- The Friday evening utilization rate for all garages was under 40%. The utilization rate at garage spaces connected to private residences was 44%, which was slightly higher than the utilization for stand-alone public garages.

4. Recommendations

- Many of the surface parking lots in the commercial areas are fully utilized on Friday evenings, while parking supply is available in public and private garages. SDOT together with local businesses could develop low-cost parking programs to encourage employees (such as those at local restaurants and nightclubs) to utilize available parking away from the commercial areas instead of on-street or surface parking lots.
- Improved signage directing motorists to public parking in the neighborhood could help disperse parking to available space beyond the commercial core areas.
- The largest public garage in the neighborhood—the 527-space garage at Seattle Central Community College (SCCC)—had some space available during the afternoon and substantial space available in the evening. Real-time information about available supply, which is provided at other Seattle garages through the City’s e-Park program, could help attract users to this garage.
- Improved lighting and parking information could increase utilization at some surface parking lots in the evenings.

Table 2. Off-Street Parking Occupancy Survey Results

Map ID	Access to Facility	Cross-Streets	Total Parking Supply	Weekday Afternoon		Friday Evening	
				% Utiliz.	Unused Spaces ^a	% Utiliz.	Unused Spaces ^a
GARAGES							
Public Garages							
4	Summit Ave	E Pike St and E Pine St	115	76%	28	18%	94
6	Harvard Ave	E Olive St and E Pine St	527	82%	93	23%	406
10 ^b	Harvard Ave	E Pike St and E Union St	272	89%	31	49%	138
14	Broadway	E Union St and E Madison St	84	57%	36	24%	64
Sub-Total			998	81%	188	30%	702
Public Spaces in Private Garages							
11	Nagle Pl	E Pine St and E Olive St	49	55%	22	20%	39
21	13 th Ave	E Olive St and E Pine St	14	57%	6	64%	5
27	14 th Ave	E Pine St and E Pike St	26	27%	19	73%	7
28	E Pine St	14 th Ave and 15 th Ave	9	67%	3	89%	1
31	14 th Ave	E Madison St and E Union St	35	40%	21	34%	23
Sub-Total			133	47%	71	44%	75
Total for Garages			1,131	77%	259	31%	777
SURFACE LOTS							
Public Lots							
1	E Pine St	Melrose Ave and Minor Ave	52	94%	3	81%	10
2	Melrose Ave	E Pine St and Yale Ave	39	85%	6	82%	7
5	Belmont Ave	E Pine St and E Pike St	29	69%	9	41%	17
7	E Union St	Boylston Ave and Harvard Ave	15	80%	3	13%	13
8	Harvard Ave	E Pike St and E Union St	18	89%	2	44%	10
9	Harvard Ave	E Union St and E Pike St	59	92%	5	17%	49
12	Broadway	SE corner at E Pine St	51	65%	18	22%	40
13	Broadway	NE corner at E Union St	28	89%	3	29%	20
15	E Pine St & 10 th Ave	SE corner	52	92%	4	81%	10
16	E Pike St	NE corner at 10 th Ave	17	88%	2	100%	0
17	10 th Ave	E Pike St and E Union St	69	88%	8	35%	45
23	13 th Ave	E Pine St and E Pike St	11	91%	1	100%	0
25	14 th Ave	NW corner at E Pine St	43	91%	4	74%	11

Table 2. Off-Street Parking Occupancy Survey Results

Map ID	Access to Facility	Cross-Streets	Total Parking Supply	Weekday Afternoon		Friday Evening	
				% Utiliz.	Unused Spaces ^a	% Utiliz.	Unused Spaces ^a
29	E Madison St & 14 th Ave	NE corner	57	32%	39	30%	40
30	14 th Ave	SE corner at E Madison St	53	11%	47	23%	41
Sub-Total			593	74%	154	47%	313
Weekday Reserved; Evening/Weekend Public							
3	E Pike St	Boren Ave and Minor Ave	18	50%	9	100%	0
18	E Union St	10 th Ave and 11 th Ave	6	100%	0	33%	4
19	11 th Ave	SW corner at E Union St	9	56%	4	44%	5
20	E Madison St	NW corner at 11 th Ave	28	57%	12	4%	27
22 ^c	13 th Ave	E Pine St and E Pike St	7	29%	5	0%	7
24	E Madison St	E Pike St and 14 th Ave	34	41%	20	71%	10
26	13 th Ave	SE corner with E Pine St	12	42%	7	100%	0
Sub-Total			114	50%	57	54%	53
Total for Surface Lots			707	70%	211	48%	366
TOTAL ALL FACILITIES			1,838	74%	470	38%	1,143

Source: Heffron Transportation, Inc., October 2014.

a. Unused spaces represent the number of spaces where vehicles are not parked.

b. This off-street facility has both a surface lot and garage

c. This location is reserved Mon – Sun during the day and only available for public use after 7:30 P.M.

Table 3. Daytime Hours and Rates for Off-Street Parking

Map ID	Hours of Operation ^a	Daytime Parking Rate					Early-Bird Rate
		1-Hour	2-Hour	3 Hour	4 Hour	All Day ^b	
GARAGES							
<i>Public Garages</i>							
4	6:00 A.M. – 5:00 P.M.	\$7.00	\$7.00	\$15.00	\$15.00	\$15.00	--
6	24 Hours	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	--
10 ^c	24 Hours	\$6.56	\$9.02	\$17.21	\$17.21	\$17.21	--
14	4:00 A.M. – 5:00 P.M.	\$2.00	\$4.00	\$6.00	\$8.00	--	--
<i>Public Spaces in Private Garages</i>							
11	6:00 A.M. – 5:00 P.M.	\$4.00	\$6.00	\$10.00	\$12.00	\$14.00	\$10:00
21	4:00 A.M. – 8:00 P.M.	\$3.00	\$6.00	\$9.00	\$12.00	--	--
27	5:30 A.M. – 5:00 P.M.	\$3.00	\$6.00	\$9.00	\$12.00	--	\$10.00
28	4:00 A.M. – 5:00 P.M.	\$2.00	\$4.00	\$6.00	\$8.00	--	\$8.00
31	4:00 A.M. – 5:30 P.M.	\$3.00	\$6.00	\$9.00	\$10.00	\$10.00	--
SURFACE LOTS (<i>Public Only</i>)							
1	7:00 A.M. – 5:00 P.M.	\$6.00	\$6.00	\$15.00	\$15.00	--	\$12.00
2	4:00 A.M. – 5:00 P.M.	\$3.00	\$6.00	\$9.00	\$12.00	--	\$11.00
5	Not posted – 5:00 P.M.	\$7.00	\$7.00	\$15.00	\$15.00	\$15.00	\$9.84
7	7:00 A.M. – 5:00 P.M.	\$7.00	\$7.00	\$12.00	\$12.00	\$12.00	--
8	7:00 A.M. – 5:00 P.M.	\$5.00	\$5.00	\$9.00	\$9.00	\$9.00	--
9	7:00 A.M. – 5:00 P.M.	\$7.00	\$7.00	\$12.00	\$12.00	\$12.00	--
12	4:00 A.M. – 5:00 P.M.	\$2.00	\$4.00	\$6.00	\$8.00	\$19.00	--
13	--	\$2.00	\$4.00	\$6.00	\$8.00	\$10.00	\$11.00 ^e
15	4:00 A.M. – 8:00 P.M.	\$3.00	\$7.00	\$11.00	\$15.00	--	--
16	--	\$5.00	\$5.00	\$7.00	\$7.00	\$13.00	--
17	--	\$5.00	\$5.00	\$7.00	\$7.00	\$11.00	--
23	4:00 A.M. – 5:00 P.M.	\$3.00	\$6.00	\$9.00	\$12.00	--	--
25 ^d	--	--	--	--	--	--	--
29	4:00 A.M. – 5:00 P.M.	\$7.00	\$7.00	\$10.00	\$13.00	\$13.00	\$9.00
30	4:00 A.M. – 5:00 P.M.	\$3.00	\$6.00	\$9.00	\$12.00	\$15.00	\$9.00

Source: Heffron Transportation, Inc., October 2014.

a. Hours are not posted at all locations.

b. At many locations the All Day rate is defined as a maximum of 10 hours. The All Day rate is included only if it is detailed at the lot.

c. These rates are set for every ½ hour up to 3 hours. The per-hour rates are identified in this table.

d. No hours or rates posted at this location.

e. Early bird rate is higher than daily parking rate.

Table 4. Evening and Weekend Hours and Rates for Off-Street Parking

Map ID	Evening ^a	Weekend	Evening Parking Rates				Weekend Rates ^b
			Every Evening	Sun - Wed	Thurs - Sat	Over-night	
GARAGES							
<i>Public Garages</i>							
4	5:00 P.M. – 12:00 A.M.	6:00 A.M. – 2:00 A.M. ^b	\$7.00	--	--	--	same
6	24 Hours	same ^c	\$5.00	--	--	--	same
10 ^c	24 Hours	same	same	--	--	\$17.21	same
14	5:00 P.M. – 4:00 A.M.	same	--	\$10.00	\$12.00	\$15.00	same
<i>Public Spaces in Private Garages</i>							
11	5:00 P.M. – 2:30 A.M.	same	\$8.00	--	--	--	\$5.00
21	8:00 P.M. – 4:00 A.M.	same	\$10.00	--	--	--	same
27	5:00 P.M. – 12:00 A.M.	5:30 A.M. – 2:30 A.M. ^b	\$10.00	--	--	--	same
28	5:00 P.M. – 11:30 P.M.	4:00 A.M. – 12:30 A.M. ^b	\$8.00	--	--	--	same
31	5:30 P.M. – 2:00 A.M.	same	\$10.00	--	--	--	--\$10.00
SURFACE LOTS							
<i>Public Lots</i>							
1	5:00 P.M. – 7:00 A.M.	same		\$12.00	\$15.00	\$15.00	\$12.00
2	5:00 P.M. – 4:00 A.M.	same		\$1200	\$14.00		same
5	Not posted – 5:00 P.M.	same	\$8.00				\$5.00
7	5:00 P.M. – 7:00 A.M.	same	\$7.00				same
8	5:00 P.M. – 7:00 A.M.	same	\$7.00				\$7.00
9	5:00 P.M. – 7:00 A.M.	same	\$7.00				same
12	5:00 P.M. – 4:00 A.M.	same		\$10.00	\$12.00		same
13	--			\$10.00	\$12.00		same
15	8:00 P.M. – 4:00 A.M.	same	\$12.00				same
16	--	--	\$10.00				same
17	--	--	\$10.00				same
23	4:00 A.M. – 5:00 P.M.	same		\$9.00	\$11.00		same
25 ^d	--	--	--	--	--	--	--
29	5:00 P.M. – 4:00 A.M.	same	\$10.00				same
30	5:00 P.M. – 11:30 P.M..	4:00 A.M. 12:30 A.M. ^b	\$8.00				same

Weekday Reserved; Evening/Weekend Public

Table 4. Evening and Weekend Hours and Rates for Off-Street Parking

Map ID	Evening ^a	Weekend	Evening Parking Rates				Weekend Rates ^b
			Every Evening	Sun - Wed	Thurs - Sat	Over-night	
3	6:00 P.M. – 6:00 A.M.	24 hours	\$12.00				\$12.00
18		same	\$8.00				\$8.00
19	6:00 P.M. – 6:00 A.M.	24 hours	\$8.00				\$8.00
20	6:00 P.M. – 6:00 A.M.	24 hours	\$8.00				\$8.00
22	7:30 P.M. – 6:30 A.M.	same	\$10.00				\$10.00
24	6:00 P.M. – 9:00 A.M.	24 hours ^e	\$8.00				\$8.00
26	5:00 P.M. – 7:00 A.M.	24 hours		\$10.00	\$12.00		\$3.00/hr

Source: Heffron Transportation, Inc., October 2014

a. Hours are not posted at all locations.

b. The evening closing hours apply to Sunday through Thursday. The weekend closing hours apply to Friday and Saturday.

c. 'same' indicates that the hours and/or rates are the same as posted for the weekday day/evening .

d. No hours or rates posted at this location.

e. This location is reserved for private parking on Saturdays from 9:00 A.M. – 1:00 P.M.

Table 5. Comparison of On-Street and Off-Street Parking Rates

Type of Off-Street Facility	Average Daytime Parking Rate					Early-Bird Rate
	1-Hour	2-Hour	3 Hour	4 Hour	All Day ^b	
Public Garages	\$5.14	\$7.26	\$11.80	\$12.30	\$13.74	--
Public Spaces in Private Garages	\$3.00	\$5.60	\$8.60	\$10.80	\$12.00	\$9.33
Public Surface Lot	\$4.64	\$6.00	\$10.07	\$11.64	\$12.90	\$10:31
Weekday Reserved/Weekend Public Lot	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Overall Average for Off-Street Parking	\$4.32	\$5.96	\$9.84	\$11.43	\$12.83	\$9.98
On-Street Parking Rates	\$2.50	\$5.00	\$7.50	\$10.00	\$20.00	N.A.

Source: Heffron Transportation, Inc., October 2014.

a. Hours are not posted at all locations.

b. At many locations the All Day rate is defined as a maximum of 10 hours. The All Day rate is included only if it is detailed at the lot.

Appendix B – Madison Corridor BRT Parking and Loading Impacts

PARKING AND LOADING IMPACTS



INTRODUCTION

This report describes on-street parking and loading impacts of the Madison Corridor BRT Locally Preferred Alternative (LPA) and of the previous project alternatives used to develop it. It also evaluates potential mitigation approaches to address the loss of on-street parking.

METHODOLOGY

This chapter describes the methodology used to assess impacts to on-street parking and passenger and commercial loading supply from the Madison BRT project.

Counts of existing numbers of spaces in different regulatory categories (parking, peak period-restricted parking, commercial loading, passenger loading and carpool) on each block face along the project alignment were developed primarily using a database provided by SDOT. In some cases, the database was supplemented by manual field surveys, visual surveys using Google Street View, and with information from the SDOT Seattle Parking Map.

Future projections are based on the 10 percent plan-view drawings developed in support of the project alternatives and of the LPA. In assigning future spaces to different categories, loading spaces were replaced with loading spaces on the same block wherever possible.

Parking spaces include both paid (metered) and free spaces. Peak-restricted parking spaces are spaces in which parking is prohibited during the AM peak period, PM peak period, or both. In some cases, loading zones are available for general parking outside of designated hours. Carpool spaces were included in counts of all-day spaces.

Note that the analysis is limited to on-street parking and loading, and does not include off-street parking spaces in the corridor, public or private.

ALTERNATIVES IMPACTS

During alternatives analysis, both the primary project alternatives – Side and Center Running BRT – and terminal variants were evaluated.

Both the Side and Center Running alternatives were found to require the removal of all on-street parking from Madison between 8th and 20th Avenues, with both center transit-only lanes and side-running business, access and transit (BAT) lanes requiring replacement of existing lanes used for travel during peak periods and parking during off-peak periods. Each alternative was found to result in the removal of 94 on-street spaces between 8th and 20th Avenues, of which 57 would be peak period-restricted spaces (note that these figures were updated for the final analysis found in the following section).

Impacts of the terminal variants were also evaluated. The Madison westbound, Spring

eastbound alignment in the downtown was found, based on the design developed up to that point, to require the removal of 73 parking and loading spaces west of 8th Avenue, compared to just 36 for the Madison westbound and Marion eastbound variant (both assumed a turnaround at Western Avenue, with minor differences if it were 1st Avenue or Alaskan Way). The Martin Luther King, Jr. Way eastern terminal variant was found to require the removal of 32 spaces, while the 23rd Avenue variant was found to require the removal of just four spaces (if it used Olive Way to return to Madison).

LRA IMPACTS

Total existing parking and loading spaces and projected spaces along the LPA alignment are shown in Figure C-1. Note that First Avenue between Madison and Spring, part of the LPA alignment, has not been included in this analysis because changes to parking configuration on this street will be made as part of the Center City Connector streetcar project.

Figure C-2 shows existing and projected parking and loading spaces by segment and by designation of curb use including all-day parking, peak restricted parking, commercial load zones, and passenger load zones.

Figure C-3 shows existing and projected counts by block face and category.

FIGURE C-1 SUMMARY OF LPA PARKING IMPACTS

Category	Existing	Projected	Change
All-Day Parking	263	197	-66
Peak-Restricted Parking	102	6	-96
Commercial Loading	13	7	-6
Passenger Loading	12	7	-5

FIGURE C-2 LPA PARKING IMPACTS BY SEGMENT

Segment	All Day Parking		Peak Restricted		Comm. Loading		Passenger Loading	
	Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA
Downtown (1st Ave – 6th Ave)	58	43	15	0	1	0	6	4
First Hill (6th – Broadway)	69	48	43	0	3	1	5	2
Capitol Hill/Central District (Broadway – 23rd Ave)	34	32	38	0	3	0	1	1
Madison Park (23rd Ave – MLK Jr. Way)	102	74	6	6	6	6	0	0

FIGURE C-3 LPA PARKING IMPACTS BY BLOCK FACE

Segment		All Day Parking		Peak Restricted		Comm. Loading		Passenger Loading	
		Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA
Spring St									
1ST AVE to 2ND AVE	SE	0	0	0	0	0	0	0	0
1ST AVE to 2ND AVE	NW	15	0	0	0	0	0	0	0
2ND AVE to 3RD AVE	SE	0	0	0	0	0	0	0	0
2ND AVE to 3RD AVE	NW	0	0	0	0	1	0	0	0
3RD AVE to 4TH AVE	SE	0	0	0	0	0	0	0	0
3RD AVE to 4TH AVE	NW	0	0	11	0	0	0	0	0

Segment		All Day Parking		Peak Restricted		Comm. Loading		Passenger Loading	
		Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA
4TH AVE to 5TH AVE	SE	0	5	4	0	0	0	0	0
4TH AVE to 5TH AVE	NW	2	3	0	0	0	0	2	2
5TH AVE to 6TH AVE	SE	0	0	0	0	0	0	0	0
5TH AVE to 6TH AVE	NW	9	9	0	0	0	0	0	0
6TH AVE to 7TH AVE	SE	0	0	0	0	0	0	0	0
6TH AVE to 7TH AVE	NW	10	13	0	0	0	0	0	0
7TH AVE to 8TH AVE	SE	6	5	0	0	0	0	2	2
7TH AVE to 8TH AVE	NW	10	9	0	0	0	0	0	0
8TH AVE to 9TH AVE	SE	8	6	0	0	1	1	0	0
8TH AVE to 9TH AVE	NW	10	9	0	0	0	0	0	0
9th Ave									
SPRING ST to MADISON ST	SW	7	6	0	0	0	0	0	0
SPRING ST to MADISON ST	NE	7	0	0	0	0	0	0	0
Madison St									
1ST AVE to 2ND AVE	SE	0	7	0	0	0	0	0	0
1ST AVE to 2ND AVE	NW	0	0	0	0	0	0	0	0
2ND AVE to 3RD AVE	SE	11	8	0	0	0	0	0	0
2ND AVE to 3RD AVE	NW	0	0	0	0	0	0	0	0
3RD AVE to 4TH AVE	SE	14	6	0	0	0	0	1	1
3RD AVE to 4TH AVE	NW	0	0	0	0	0	0	0	0
4TH AVE to 5TH AVE	SE	7	5	0	0	0	0	1	1
4TH AVE to 5TH AVE	NW	0	0	0	0	0	0	0	0
5TH AVE to 6TH AVE	SE	0	0	0	0	0	0	2	0
5TH AVE to 6TH AVE	NW	0	0	0	0	0	0	0	0
6TH AVE to 7TH AVE	SE	11	0	0	0	0	0	0	0
6TH AVE to 7TH AVE	NW	0	0	0	0	0	0	0	0

Segment		All Day Parking		Peak Restricted		Comm. Loading		Passenger Loading	
		Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA
7TH AVE to 8TH AVE	SE	0	0	8	0	0	0	1	0
7TH AVE to 8TH AVE	NW	0	0	0	0	0	0	0	0
8TH AVE to 9TH AVE	SE	0	0	4	0	0	0	1	0
8TH AVE to 9TH AVE	NW	0	0	0	0	0	0	0	0
9TH AVE to TERRY AVE	SE	0	0	6	0	1	0	0	0
9TH AVE to TERRY AVE	NW	0	0	0	0	0	0	0	0
TERRY AVE to BOREN AVE	SE	0	0	9	0	0	0	0	0
TERRY AVE to BOREN AVE	NW	0	0	0	0	0	0	0	0
BOREN AVE to MINOR AVE	SE	0	0	8	0	0	0	0	0
BOREN AVE to MINOR AVE	NW	0	0	0	0	0	0	0	0
MINOR AVE to SUMMIT AVE	SE	0	0	0	0	0	0	0	0
MINOR AVE to SUMMIT AVE	NW	0	0	0	0	0	0	0	0
SUMMIT AVE to BOYLSTON AVE	SE	0	0	6	0	1	0	0	0
SUMMIT AVE to BOYLSTON AVE	NW	0	0	0	0	0	0	0	0
BOYLSTON AVE to BROADWAY	SE	0	0	2	0	0	0	1	0
BOYLSTON AVE to BROADWAY	NW	0	0	0	0	0	0	0	0
BROADWAY to BROADWAY CT	SE	0	0	0	0	0	0	0	0
BROADWAY to BROADWAY CT	NW	0	0	0	0	0	0	0	0
BROADWAY CT to 10TH AVE	SE	0	0	3	0	0	0	0	0
BROADWAY CT to 10TH AVE	NW	0	0	0	0	0	0	0	0
10TH AVE to E SENECA ST	SE	0	0	5	0	1	0	0	0
10TH AVE to E SENECA ST	NW	0	0	3	0	0	0	0	0
E SENECA ST to 11TH AVE	SE	0	0	0	0	0	0	0	0
E SENECA ST to 11TH AVE	NW	0	0	0	0	0	0	0	0
11TH AVE to 12TH AVE	SE	0	0	0	0	0	0	0	0
11TH AVE to 12TH AVE	NW	0	0	0	0	0	0	0	0

Segment		All Day Parking		Peak Restricted		Comm. Loading		Passenger Loading	
		Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA
12TH AVE to 13TH AVE	SE	0	0	0	0	0	0	0	0
12TH AVE to 13TH AVE	NW	0	0	0	0	0	0	0	0
13TH AVE to 14TH AVE	SE	0	0	7	0	1	0	0	0
13TH AVE to 14TH AVE	NW	0	0	0	0	0	0	0	0
14TH AVE to E PIKE ST	SE	0	0	4	0	0	0	0	0
14TH AVE to E PIKE ST	NW	0	0	0	0	0	0	0	0
E PIKE ST to 15TH AVE	SE	0	0	0	0	0	0	0	0
E PIKE ST to 15TH AVE	NW	0	0	0	0	0	0	0	0
15TH AVE to 16TH AVE	SE	0	0	0	0	0	0	0	0
15TH AVE to 16TH AVE	NW	0	0	0	0	0	0	0	0
16TH AVE to E PINE ST	SE	0	0	0	0	0	0	0	0
16TH AVE to E PINE ST	NW	0	0	0	0	0	0	0	0
E PINE ST to 17TH AVE	SE	0	0	0	0	0	0	0	0
E PINE ST to 17TH AVE	NW	0	0	0	0	0	0	0	0
17TH AVE to 18TH AVE	SE	0	0	0	0	0	0	0	0
17TH AVE to 18TH AVE	NW	0	0	0	0	0	0	0	0
18TH AVE to 19TH AVE	SE	0	0	0	0	0	0	0	0
18TH AVE to 19TH AVE	NW	0	0	0	0	0	0	0	0
19TH AVE to 20TH AVE	SE	0	0	0	0	0	0	0	0
19TH AVE to 20TH AVE	NW	0	0	0	0	0	0	0	0
20TH AVE to E DENNY WAY	SE	15	0	0	0	1	0	0	0
20TH AVE to E DENNY WAY	NW	0	0	15	0	0	0	0	0
E DENNY WAY to 22ND AVE	SE	0	0	0	0	0	0	0	0
E DENNY WAY to 22ND AVE	NW	0	6	0	0	0	0	1	1
22ND AVE to 23RD AVE	SE	6	13	0	0	0	0	0	0
22ND AVE to 23RD AVE	NW	13	13	0	0	0	0	0	0

Segment		All Day Parking		Peak Restricted		Comm. Loading		Passenger Loading	
		Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA	Existing	BRT LPA
23RD AVE to 24TH AVE	SE	1	1	3	3	2	2	0	0
23RD AVE to 24TH AVE	NW	10	10	3	3	0	0	0	0
24TH AVE to 25TH AVE	SE	8	3	0	0	0	0	0	0
24TH AVE to 25TH AVE	NW	2	2	0	0	1	1	0	0
25TH AVE to 26TH AVE	SE	14	14	0	0	0	0	0	0
25TH AVE to 26TH AVE	NW	20	20	0	0	0	0	0	0
26TH AVE to 27TH AVE	SE	6	6	0	0	0	0	0	0
26TH AVE to 27TH AVE	NW	10	5	0	0	1	1	0	0
27TH AVE to 27TH AVE	SE	1	1	0	0	1	1	0	0
27TH AVE to 27TH AVE	NW	2	2	0	0	0	0	0	0
27TH AVE to MLK JR WAY	SE	10	5	0	0	1	1	0	0
27TH AVE to MLK JR WAY	NW	11	5	0	0	0	0	0	0
Martin Luther King, JR. Way									
MADISON to ARTHUR PL	E	0	0	0	0	0	0	0	0
MADISON TO ARTHUR PL	W	0	0	0	0	0	0	0	0
AT ARTHUR PL/HARRISON (TRAFFIC CIRCLE)	-	7	0	0	0	0	0	0	0

Figures C-4 through C-7 on the following pages illustrate the before-and-after parking and loading counts by segment, and provide limited additional information on current

peak occupancy rates, as observed during existing conditions data collection for this project.

FIGURE C-4 MAP OF PARKING AND LOADING IMPACTS, LPA DOWNTOWN SEGMENT



FIGURE C-5 MAP OF PARKING AND LOADING IMPACTS, FIRST HILL SEGMENT

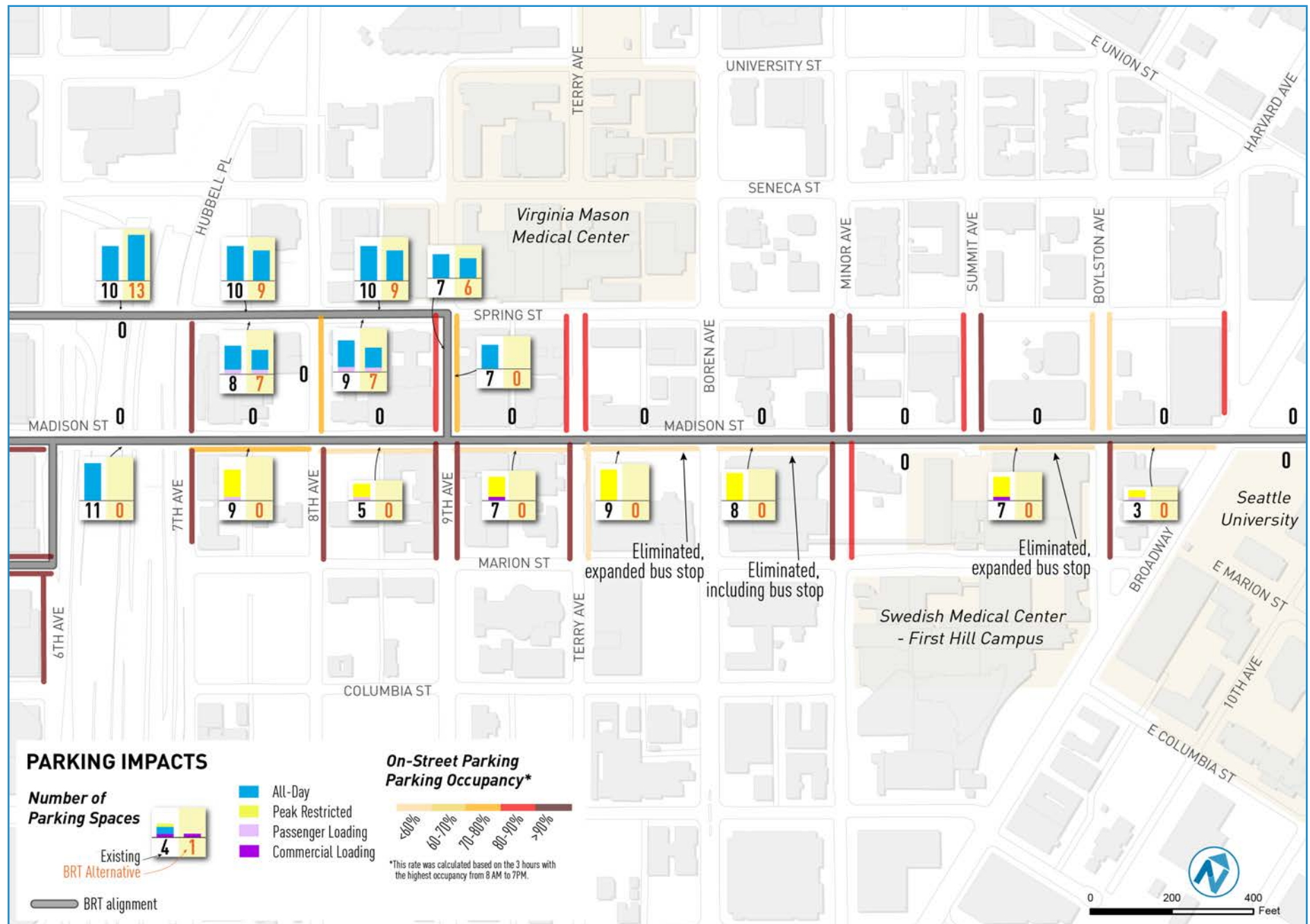


FIGURE C-6 MAP OF PARKING AND LOADING IMPACTS, CAPITOL HILL/CENTRAL DISTRICT SEGMENT

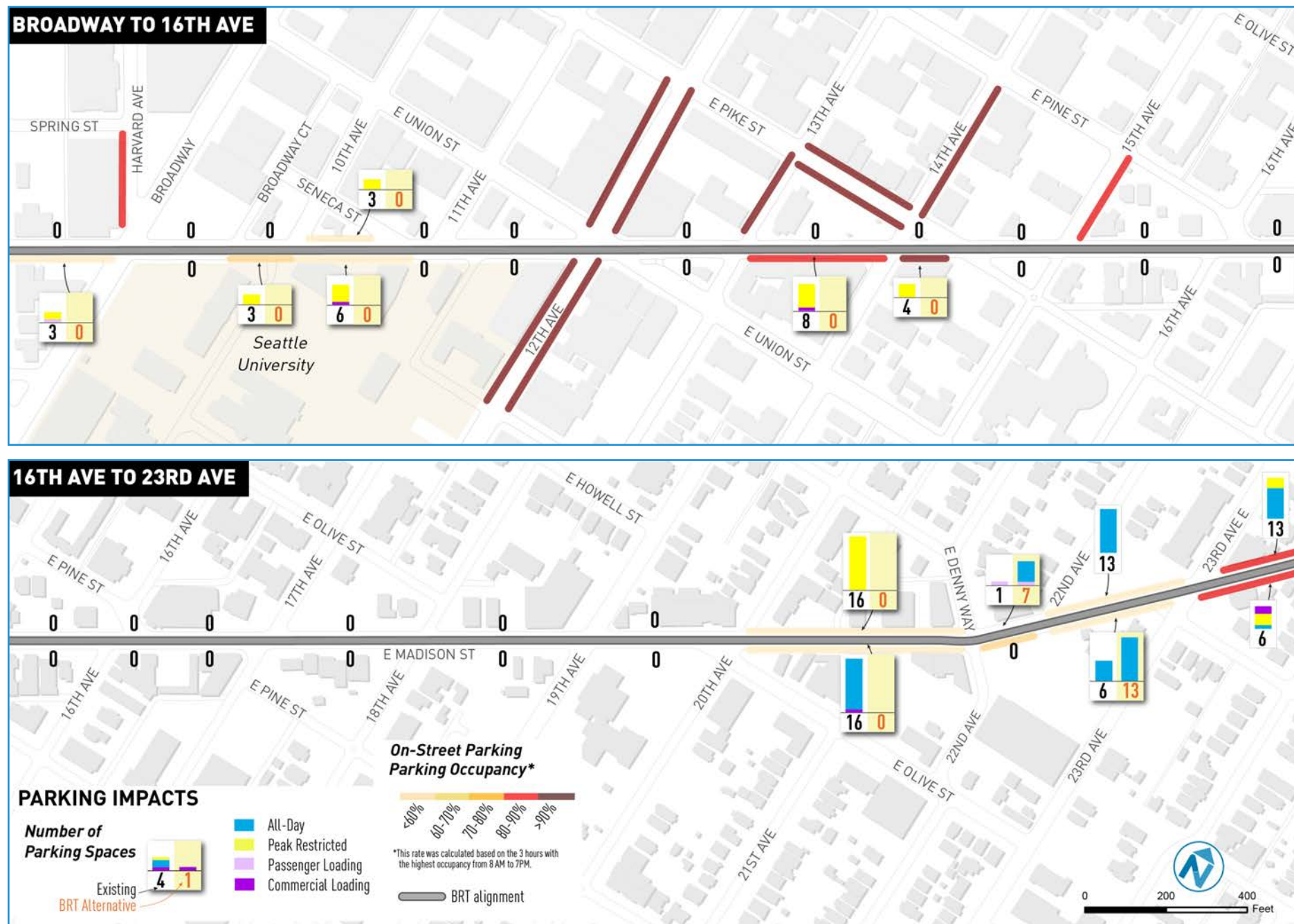
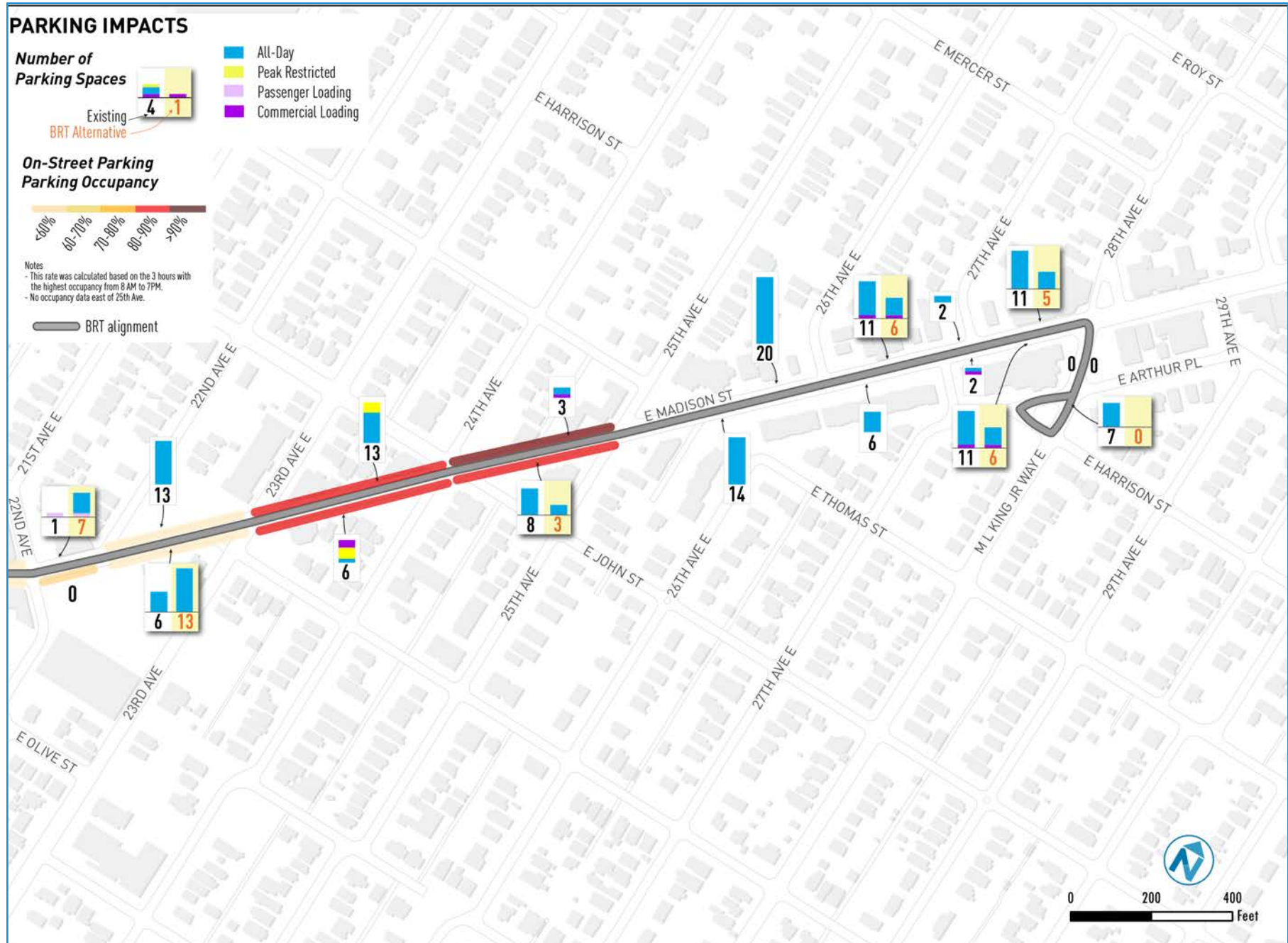


FIGURE C-7 MAP OF PARKING AND LOADING IMPACTS, MADISON VALLEY SEGMENT



PARKING MITIGATION

As part of the parking and loading impacts analysis, an evaluation of potential mitigation measures was conducted. Opportunities to add on-street parking supply on blocks adjacent to the Madison BRT alignment west of 23rd Avenue, where most of the impacts would occur, were evaluated.

Approach/Methodology

The analysis assessed the potential feasibility and impacts of two parking mitigation strategies: conversion of two-way streets to one-way operation in order to allow for angled parking; and closure of connecting streets at Madison in order to provide additional space for parking.

The evaluation was based on GIS mapping of street dimensions (with spot checks conducted using Google Earth) and automobile turning movements counts collected through previous traffic modeling efforts. Detailed analysis of impacts to traffic flow, business access, and transit operations was not conducted. Any changes to streets to optimize parking supply would require a more detailed traffic and parking study.

The following sections explain the approach used for each parking mitigation strategy, including basic parking design parameters used to calculate the net new parking supply on each street that could be eligible for mitigation.

One-way streets

Opportunities to convert two-way streets that intersect with the Madison corridor to one-way operation to allow for angled parking on one side of the street were identified. The assessment focused on streets east of I-5, since downtown Avenues already operate primarily as one-way for vehicular traffic. Exceptions such as 1st Avenue and 3rd Avenue have features, special designations, and planned transit projects that will preclude operational changes.

All streets intersecting Madison were evaluated for parking mitigation opportunities including at a minimum the street segment one block northwest and one block southwest of Madison. A review of each block was conducted using peak-hour turning counts to identify low-volume candidate streets. A field check of existing right-of-way and parking supply was conducted through Google Maps. Streets with relatively low volumes of cars traveling across Madison or turning on and off of Madison were analyzed in greater detail, including GIS-based measurement of the street length and width to determine whether angled parking would be feasible. The analysis found that very few, if any, streets could accommodate additional parking if converted to one-way operations. In most cases, parking is already available on one or both sides of the street and the additional depth of angled parking would restrict the travel lane to below a minimum threshold. The analysis assumed a minimum

width of 28-29' total for one way streets, based on a 10-11' travel lane and 18' of angled parking.

Street Closures

The same street blocks that were assessed as candidates for one-way street conversion were evaluated for possible street closure to accommodate additional parking. The street closure evaluation considered the following:

- Additional curb space that could be gained at the end of the intersecting street
- The number of spaces created along Madison Street by developing recessed parking bays (typically up to two spaces available depending on the width of the intersecting street)
- How this mitigation could potentially accommodate additional angled parking near the street end

The minimum street width used was the same as for one-way streets (28-29'), but with the additional need for a turnaround space at the end of the street.

FIGURE C-8. STREET CLOSURE



Street closures at intersections can provide the dual benefit of adding limited amounts of new parking stalls, while developing great pedestrian plaza spaces that enable people to enjoy the street environment. This pedestrian plaza in Philadelphia was developed to create a more pedestrian-friendly environment and optimize parking supply.

PARKING MITIGATION OPPORTUNITIES

Figure C-9 shows the findings of the parking mitigation evaluation. Opportunities for one-way street conversions or street closures are very limited in the corridor. In locations where both a one-way street conversion and a street closure would be feasible, it should be noted that the analysis assumes only one of these options could be pursued, so the net parking gain is not additive between the two options.

Using the methodology described previously, a number of blocks were identified for potential conversion to one-way streets. Of these, however, very few were wide enough to allow for conversion to angled parking, even if traffic was reduced to one-way only. Potential locations for one-way conversion locations included the following:

- **20th Avenue between Pine and Olive.** This location could accommodate 19-21 additional stalls.
- **Denny Way/22nd Avenue between Madison and Olive.** This location could accommodate 6-7 additional stalls south of Madison. This location is adjacent to a large private parking garage.
- **Seneca between Broadway and Madison.** This location could accommodate 6-7 additional stalls.

- **13th Avenue between Pike and Madison.** This location could accommodate 3-5 stalls.
- **Pike between 14th Avenue and Madison.** This location could accommodate 6-7 additional stalls by converting parallel parking to angled parking. No conversion to one-way operations would be necessary.

Opportunities for street closures were also extremely limited. As shown in Figure C-9, only one location would provide a net gain – and it is a location at which other changes are planned as part of the LPA.

- **Union between Madison and 13th Avenue.** This location could accommodate 10 additional stalls. However, the block is planned to be reconfigured as part of the BRT LPA. Additionally, Route 2 operates on this block.

Figure C-10 includes the full set of locations that were considered in the detailed feasibility analysis.

KEY FINDING AND CONSIDERATIONS

Based on the analysis above, an estimated 50-57 additional on-street parking spaces could be provided in the corridor using the proposed mitigation strategies. Further study would be needed to determine the

precise impact of these mitigations. Other key considerations should also be taken into account:

- **Curb management.** SDOT should study the need for passenger and commercial loading stalls in the blocks that can accommodate the parking mitigation strategies.
- **Pedestrian Benefits of Mitigation Measures.** While the proposed mitigation measures are designed to reduce the impact of parking supply reduction as a result of the Madison BRT project, other benefits may be realized, including enhanced walkability and placemaking. Narrow one-way side streets with greater buffering between pedestrians and motorists will serve as calmed environments. Likewise, street closures offer unique opportunities to connect BRT with new public spaces such as pocket parks and small plazas.
- **Potential traffic impacts.** Adding parking on a street can reduce vehicle lane capacity by 3-30 percent on the adjacent travel lane. Further study is needed to assess the potential level of impact on each affected street.

FIGURE B-9 PARKING MITIGATION OPPORTUNITIES

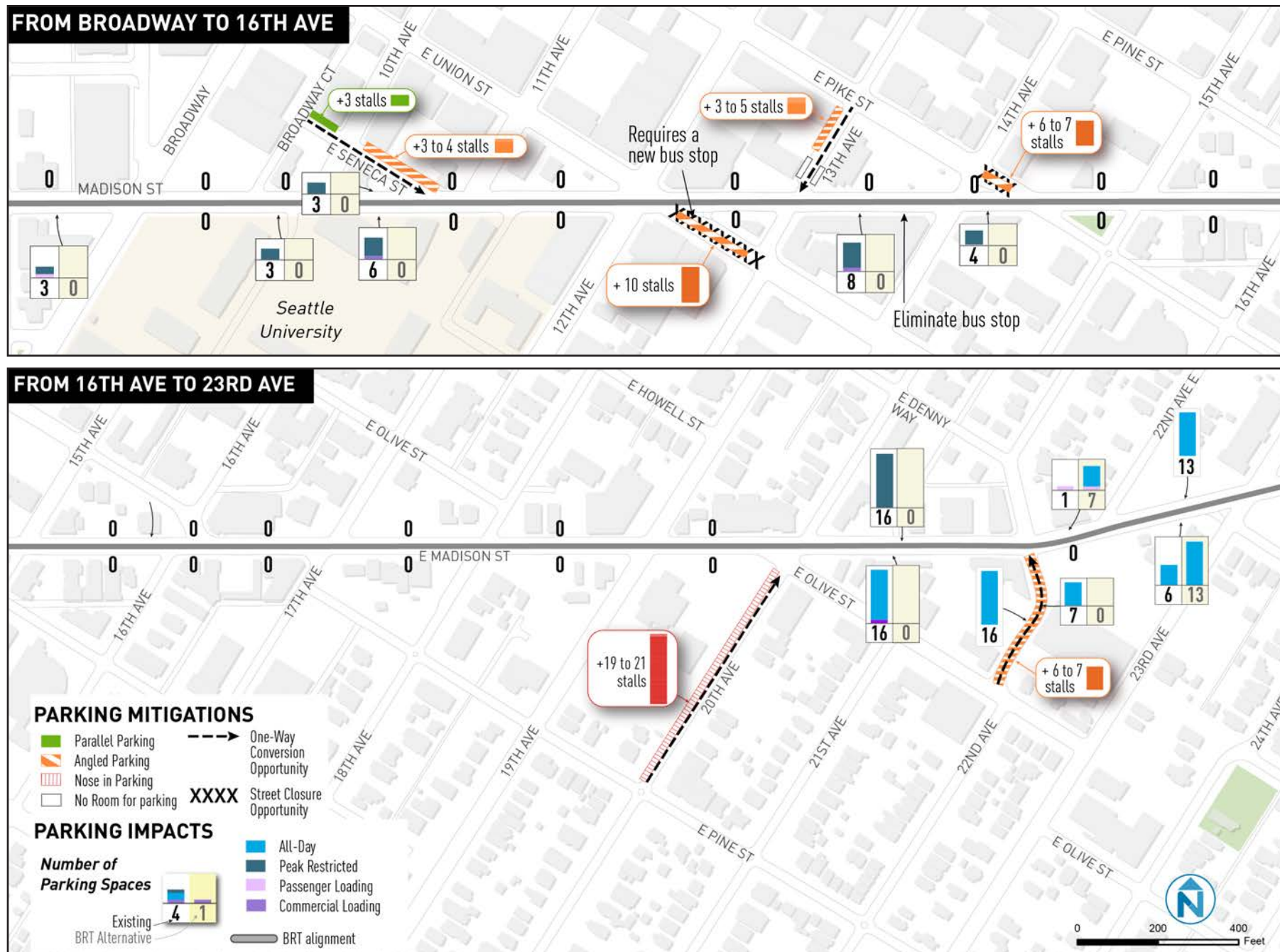


FIGURE C-10 PARKING MITIGATION EVALUATION DETAIL

Street Segment	Possible configuration	Comments	Net Parking Supply Added
Terry Ave b/w Marion St and Madison St	One-way (direction TBD)	Not feasible	None
Terry Ave b/w Madison and Spring	One-way (direction TBD)	Not feasible	None
Minor Ave b/w Madison and Spring	One-way NB	Not feasible	None
Summit Ave b/w Madison and Spring	One-way SB	Not feasible	None
Boylston Ave b/w Madison and Spring	One-way NB	Not feasible	None
Boylston Ave b/w Marion St and Madison St	One-way NB	Not feasible	None
E Seneca St b/w Madison and Broadway Ct	One-way WB	Angled spots could be added on the north side of street	6-7
10th Ave b/w E Seneca St and Madison St	One-way SB	Not feasible	None
E Union St b/w Madison and 13th Ave	Street closure	Would require reroute of Route 2	10
13th Ave b/w Madison and E Pine St	One-way SB	Angled parking for 6-7 spaces	3-5
E Pike St b/w Madison and 14th Ave	No change	Convert parallel parking to angled	6-7
E Pike St b/w Madison and 16th Ave	One-way EB		
	Not feasible	None	
16th Ave b/w Madison and E Pike St	One-way SB	Not feasible	None
17th Ave b/w Madison and E Pike St	One-way NB	Not feasible	None
E Pine St b/w 17th Ave and 18th Ave	One-way (direction TBD)	Not feasible	None
18th Ave b/w Madison and E Pine St	One-way SB	Not feasible	None
20th Ave b/w E Olive St and E Pine St	One-way NB	Keep existing angled parking and close north driveway	19-21 spaces, additional curb cut reduction could produce more
20th Ave b/w Madison and E Denny Way	One-way NB	Not feasible	None
E Denny Way/E 22nd Ave b/w 21st Ave E and E Olive St	One-way SB	Angled parking on west side of street	6-7

Appendix C – Side Street On-Street Parking Data

Madison BRT Parking Study

Side Street Parking Data

(On-Street Parking)

Segment	From	To	Side	All Day			Peak			Commercial			Passenger		
				Ex	Util.		Ex	Util.		Ex	Util.		Ex	Util.	
2nd Ave	Marion	Madison	East												
2nd Ave	Marion	Madison	West	0	0		3	3		0	0		0	0	
2nd Ave	Madison	Spring	East	0	0		0	0		0	0		0	0	
2nd Ave	Madison	Spring	West	0	0		8	8		1	0		0	0	
2nd Ave	Spring	Seneca	East	0	0		0	0		0	0		0	0	
2nd Ave	Spring	Seneca	West	0	0		4	3		1	0		0	0	
2nd Ave	Spring	Seneca	West	0	0		0	0		0	0		0	0	
3rd Ave	Marion	Madison	East	0	0		0	0		0	0		0	0	
3rd Ave	Marion	Madison	West	0	0		0	0		0	0		0	0	
3rd Ave	Madison	Spring	East	0	0		0	0		2	1		0	0	
3rd Ave	Madison	Spring	West	0	0		0	0		2	2		0	0	
3rd Ave	Spring	Seneca	East	0	0		0	0		0	0		0	0	
3rd Ave	Spring	Seneca	West	0	0		0	0		0	0		0	0	
4th Ave	Marion	Madison	East	0	0		0	0		0	0		0	0	
4th Ave	Marion	Madison	West	0	0		0	0		0	0		0	0	
4th Ave	Madison	Spring	East	0	0		4	4		0	0		0	0	
4th Ave	Madison	Spring	West	0	0		8	3		0	0		0	0	
4th Ave	Spring	Seneca	East	0	0		0	0		0	0		0	0	
4th Ave	Spring	Seneca	West	0	0		2	2		0	0		0	0	
5th Ave	Marion	Madison	East	0	0		0	0		0	0		0	0	
5th Ave	Marion	Madison	West	0	0		0	0		0	0		0	0	
5th Ave	Madison	Spring	East	0	0		0	0		0	0		0	0	
5th Ave	Madison	Spring	West	0	0		0	0		0	0		0	0	
5th Ave	Spring	Seneca	East	0	0		0	0		0	0		0	0	
5th Ave	Spring	Seneca	West	0	0		0	0		0	0		0	0	

Madison BRT Parking Study

Side Street Parking Data

(On-Street Parking)

Segment	From	To	Side	All Day				Peak				Commercial				Passenger			
				Ex	Util.	Ex	Util.	Ex	Util.	Ex	Util.	Ex	Util.	Ex	Util.	Ex	Util.	Ex	Util.
6th Ave	Marion	Madison	East	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6th Ave	Marion	Madison	West	0	0	0	0	0	0	0	0	0	0	6	6	0	0		
6th Ave	Madison	Spring	East	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6th Ave	Madison	Spring	West	0	0	0	0	0	0	0	0	0	0	2	2	0	0		
6th Ave	Spring	Seneca	East	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6th Ave	Spring	Seneca	West	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7th Ave	Marion	Madison	East	6	6	0	0	0	0	0	0	0	0	1	1	0	0		
7th Ave	Marion	Madison	West	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7th Ave	Madison	Spring	East	7	7	0	0	0	0	0	0	0	0	0	0	0	0		
7th Ave	Madison	Spring	West	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8th Ave	Marion	Madison	East	4	3	0	0	0	0	0	0	0	0	2	2	0	0		
8th Ave	Marion	Madison	West	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8th Ave	Madison	Spring	East	2	2	0	0	0	0	1	0	0	0	3	2	0	0		
8th Ave	Madison	Spring	West	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8th Ave	Spring	Seneca	East	5	5	0	0	0	0	0	0	0	0	0	0	0	0		
8th Ave	Spring	Seneca	West	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9th Ave	Marion	Madison	East	5	5	0	0	0	0	0	0	0	0	1	0	0	0		
9th Ave	Marion	Madison	West	5	5	0	0	0	0	2	1	0	0	0	0	0	0		
9th Ave	Madison	Spring	East	7	7	0	0	0	0	0	0	0	0	2	2	0	0		
9th Ave	Madison	Spring	West	7	7	0	0	0	0	0	0	0	0	2	0	0	0		
9th Ave	Spring	Seneca	East	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9th Ave	Spring	Seneca	West	6	5	0	0	0	0	0	0	0	0	0	0	0	0		
Terry Ave	Marion	Madison	East	3	1	0	0	0	0	0	0	0	0	3	1	0	0		

Madison BRT Parking Study

Side Street Parking Data

(On-Street Parking)

Segment	From	To	Side	All Day			Peak			Commercial		Passenger		
				Ex	Util.		Ex	Util.		Ex	Util.	Ex	Util.	
Broadway St	Marion	Madison	East	3	3		0	0		0	0	0	0	
Broadway St	Marion	Madison	West	0	0		0	0		0	0	0	0	
Broadway St	Madison	Union	East	8	4		0	0		0	0	3	1	
Broadway St	Madison	Union	West	0	0		0	0		0	0	0	0	
Broadway Ct	Madison	Seneca	East	6	2		0	0		0	0	0	0	
Broadway Ct	Madison	Seneca	West	0	0		0	0		0	0	0	0	
10th Ave	Madison	Seneca	East	2	2		0	0		0	0	0	0	
10th Ave	Madison	Seneca	West	5	3		0	0		0	0	0	0	
Seneca	Madison	10th Ave	North	5	3		0	0		0	0	0	0	
Seneca	Madison	10th Ave	South	4	4		0	0		0	0	0	0	
11th Ave	Madison	Union	East	7	7		0	0		0	0	0	0	
11th Ave	Madison	Union	West	3	1		0	0		0	0	0	0	
12th Ave	Spring	Madison	East	5	5		0	0		0	0	3	2	
12th Ave	Spring	Madison	West	4	4		0	0		0	0	3	0	
12th Ave	Madison	Pike	East	11	5		0	0		0	0	3	1	
12th Ave	Madison	Pike	West	8	7		0	0		0	0	2	1	
13th Ave	Spring	Union	East	18	15		0	0		0	0	1	0	
13th Ave	Spring	Union	West	19	19		0	0		0	0	2	0	
13th Ave	Union	Madison	East	0	0		0	0		0	0	0	0	
13th Ave	Union	Madison	West	0	0		0	0		0	0	0	0	
13th Ave	Madison	Pike	East	0	0		0	0		0	0	0	0	
13th Ave	Madison	Pike	West	5	2		0	0		0	0	2	0	

Madison BRT Parking Study

Side Street Parking Data

(On-Street Parking)

Segment	From	To	Side	All Day			Peak		Commercial		Passenger	
				Ex	Util.		Ex	Util.	Ex	Util.	Ex	Util.
14th Ave	Union	Madison	East	12	9		0	0	0	0	1	0
14th Ave	Union	Madison	West	6	5		0	0	0	0	0	0
14th Ave	Madison	Pike	East	0	0		0	0	0	0	0	0
14th Ave	Madison	Pike	West	0	0		0	0	0	0	0	0
14th Ave	Pike	Pine	East	13	7		0	0	0	0	0	0
14th Ave	Pike	Pine	West	7	4		0	0	2	0	2	0
15th Ave	Madison	Pine	East	7	7		0	0	0	0	1	1
15th Ave	Madison	Pine	West	0	0		0	0	0	0	0	0
16th Ave	Pike	Madison	East	0	0		0	0	0	0	0	0
16th Ave	Pike	Madison	West	9	9		0	0	0	0	0	0
16th Ave	Madison	Olive	East	0	0		0	0	0	0	0	0
16th Ave	Madison	Olive	West	11	9		0	0	0	0	0	0
17th Ave	Pike	Madison	East	0	0		0	0	0	0	0	0
17th Ave	Pike	Madison	West	15	15		0	0	0	0	2	0
17th Ave	Madison	Olive	East	5	5		0	0	0	0	0	0
17th Ave	Madison	Olive	West	11	11		0	0	0	0	3	0
18th Ave E	Pine	Madison	East	9	6		0	0	0	0	1	0
18th Ave E	Pine	Madison	West	10	8		0	0	0	0	0	0
18th Ave E	Madison	Howell	East	0	0		0	0	0	0	0	0
18th Ave E	Madison	Howell	West	19	17		0	0	0	0	0	0
19th Ave E	Pine	Madison	East	15	15		0	0	0	0	1	1
19th Ave E	Pine	Madison	West	17	11		0	0	0	0	1	0

Madison BRT Parking Study

Side Street Parking Data

(On-Street Parking)

Segment	From	To	Side	All Day			Peak			Commercial			Passenger		
				Ex	Util.		Ex	Util.		Ex	Util.		Ex	Util.	
19th Ave E	Madison	Howell	East	3	2		0	0		0	0		2	0	
19th Ave E	Madison	Howell	West	7	6		0	0		0	0		2	0	
20th Ave E	Pine	Madison	East	0	0		0	0		0	0		0	0	
20th Ave E	Pine	Madison	West	36	31		0	0		0	0		0	0	
20th Ave E	Madison	Denney	East	15	15		0	0		0	0		0	0	
20th Ave E	Madison	Denney	West	15	15		0	0		0	0		0	0	
22nd Ave E	Olive	Madison	East	5	4		0	0		0	0		0	0	
22nd Ave E	Olive	Madison	West												Under construction
22nd Ave E	Madison	Denney	East	7	5		0	0		0	0		0	0	
22nd Ave E	Madison	Denney	West	7	6		0	0		0	0		0	0	
23rd Ave E	Olive	Madison	East	0	0		0	0		0	0		0	0	
23rd Ave E	Olive	Madison	West	0	0		0	0		0	0		0	0	
23rd Ave E	Madison	John	East	0	0		0	0		0	0		0	0	
23rd Ave E	Madison	John	West	0	0		0	0		0	0		0	0	
24th Ave E	Denney	Madison	East	13	12		0	0		0	0		0	0	
24th Ave E	Denney	Madison	West	17	17		0	0		0	0		0	0	
24th Ave E	Madison	Thomas	East	17	14		0	0		0	0		0	0	
24th Ave E	Madison	Thomas	West	17	13		0	0		0	0		1	0	
25th Ave E	John	Madison	East	6	4		0	0		0	0		0	0	
25th Ave E	John	Madison	West	8	4		0	0		0	0		0	0	
25th Ave E	Madison	Mercer	East	29	20		0	0		0	0		0	0	
25th Ave E	Madison	Mercer	West	36	24		0	0		0	0		0	0	

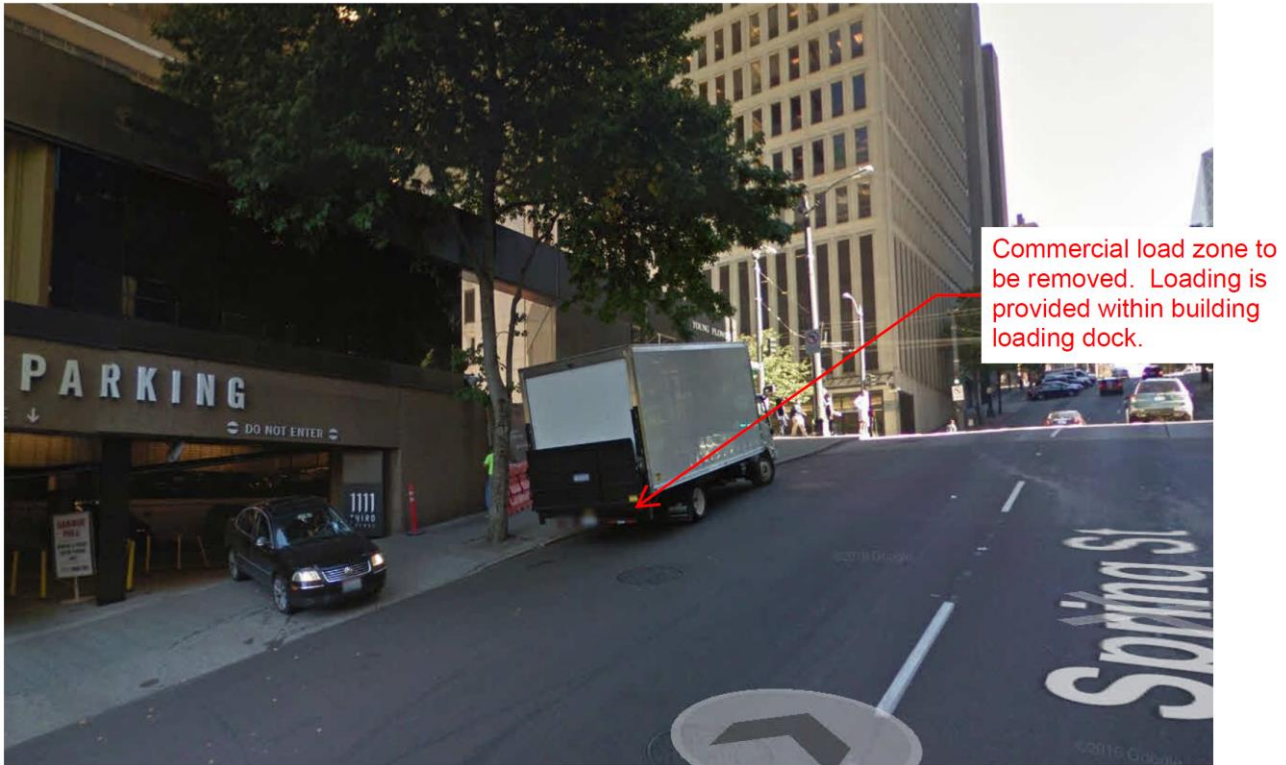
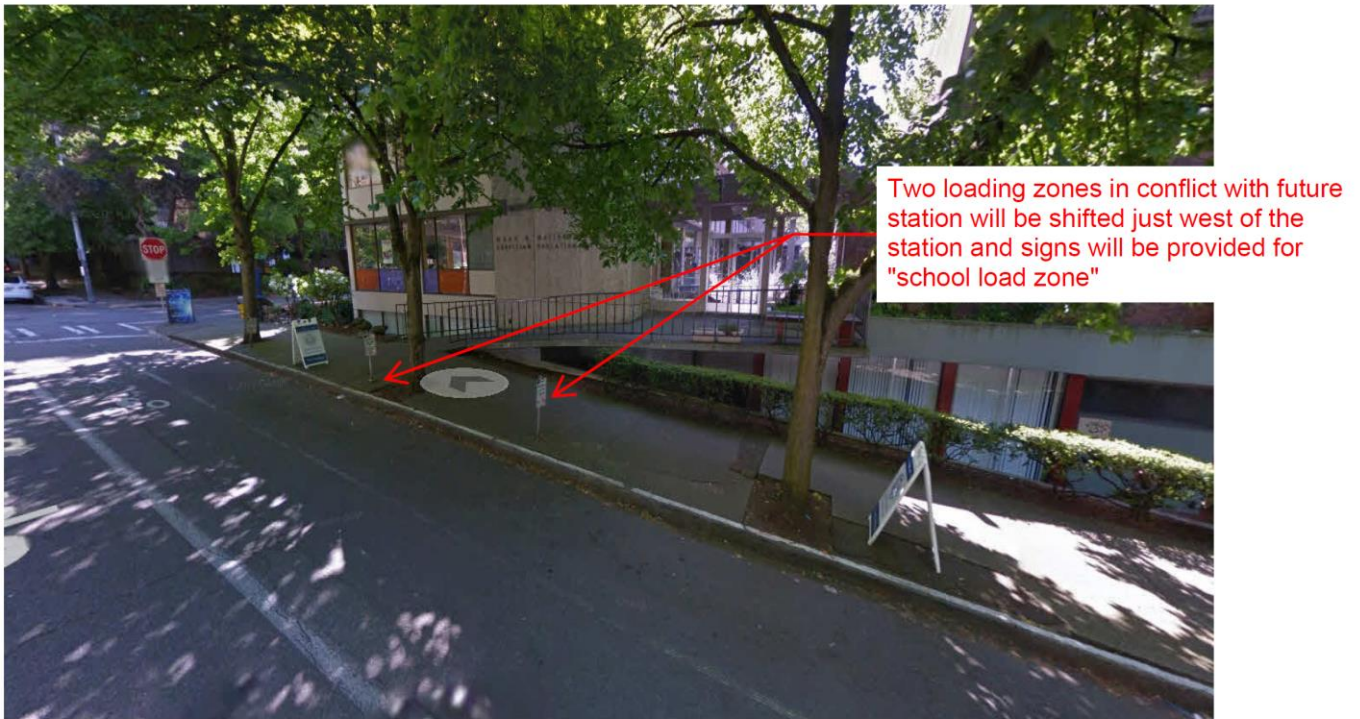
Madison BRT Parking Study

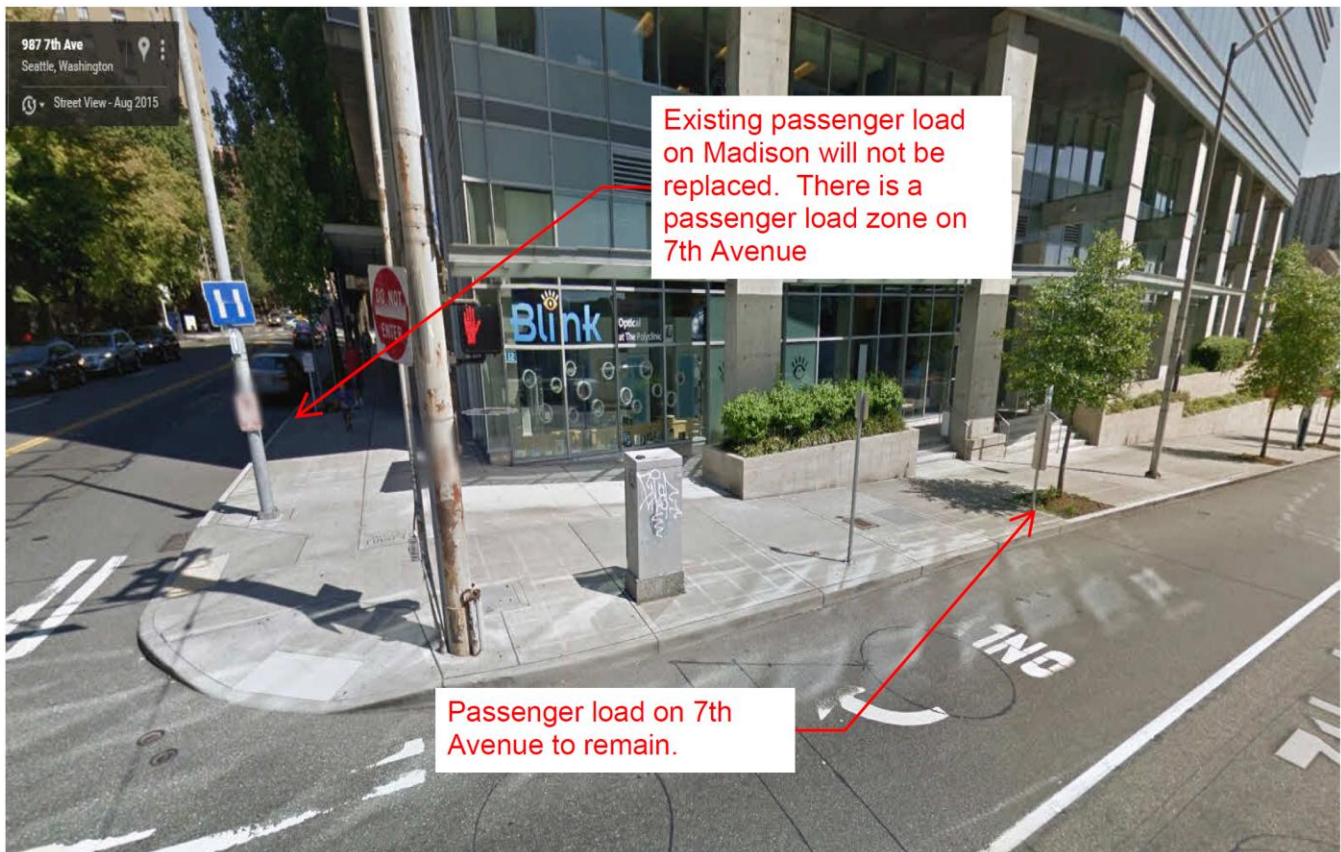
Side Street Parking Data

(On-Street Parking)

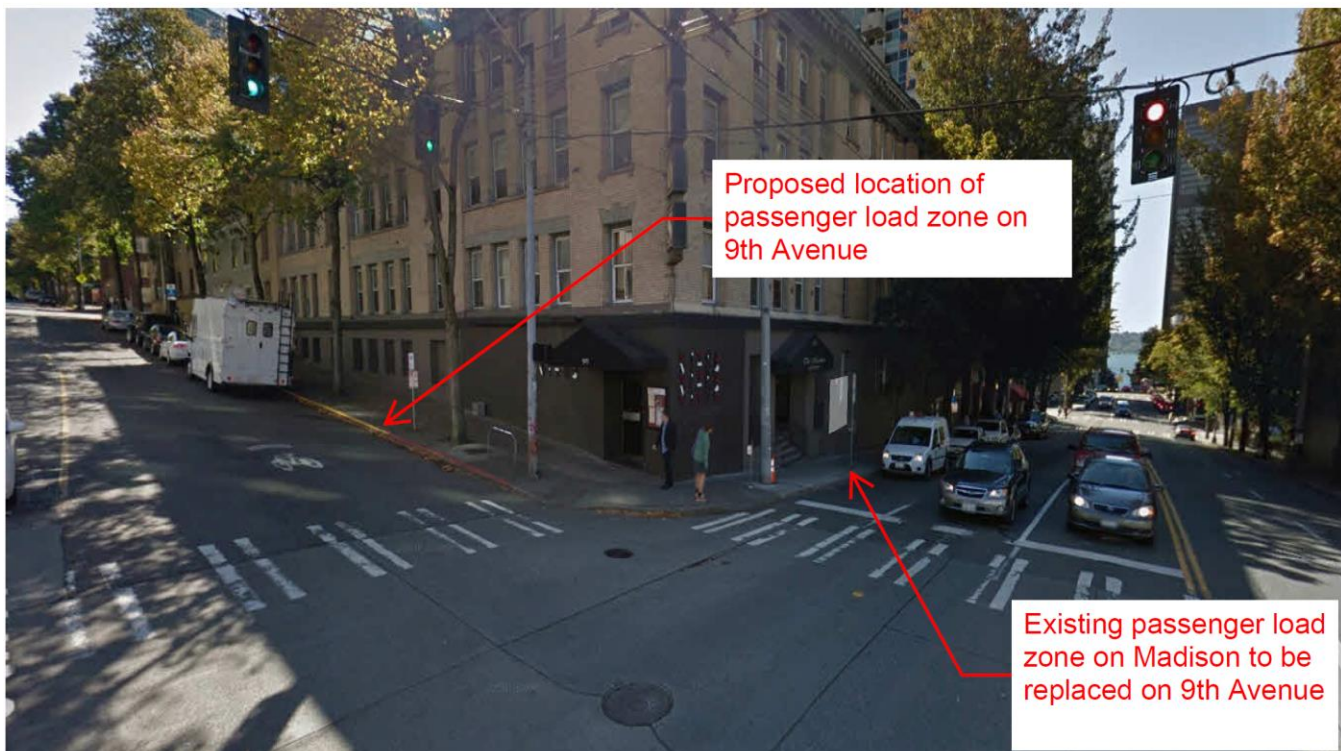
Segment	From	To	Side	All Day		Peak		Commercial		Passenger	
				Ex	Util.	Ex	Util.	Ex	Util.	Ex	Util.
26th Ave E	Madison	Mercer	East	20	9	0	0	0	0	1	1
26th Ave E	Madison	Mercer	West	29	12	0	0	0	0	0	0
27th Ave E	Arthur	Madison	East	4	2	0	0	0	0	0	0
27th Ave E	Arthur	Madison	West	3	3	0	0	0	0	0	0
27th Ave E	Madison	Mercer	East	13	4	0	0	0	0	0	0
27th Ave E	Madison	Mercer	West	17	11	0	0	0	0	0	0
MLK	Arthur	Madison	East	0	0	0	0	0	0	0	0
MLK	Arthur	Madison	West	6	4	0	0	0	0	0	0
MLK	Madison	Mercer	East	5	4	0	0	0	0	0	0
MLK	Madison	Mercer	West	3	2	0	0	0	0	1	0

Appendix D – Commercial and Passenger Load Zone Data

Spring & 3rd – Commercial LoadSpring & 8th – Passenger Load (2 spaces)



Madison & 7th – Passenger Load



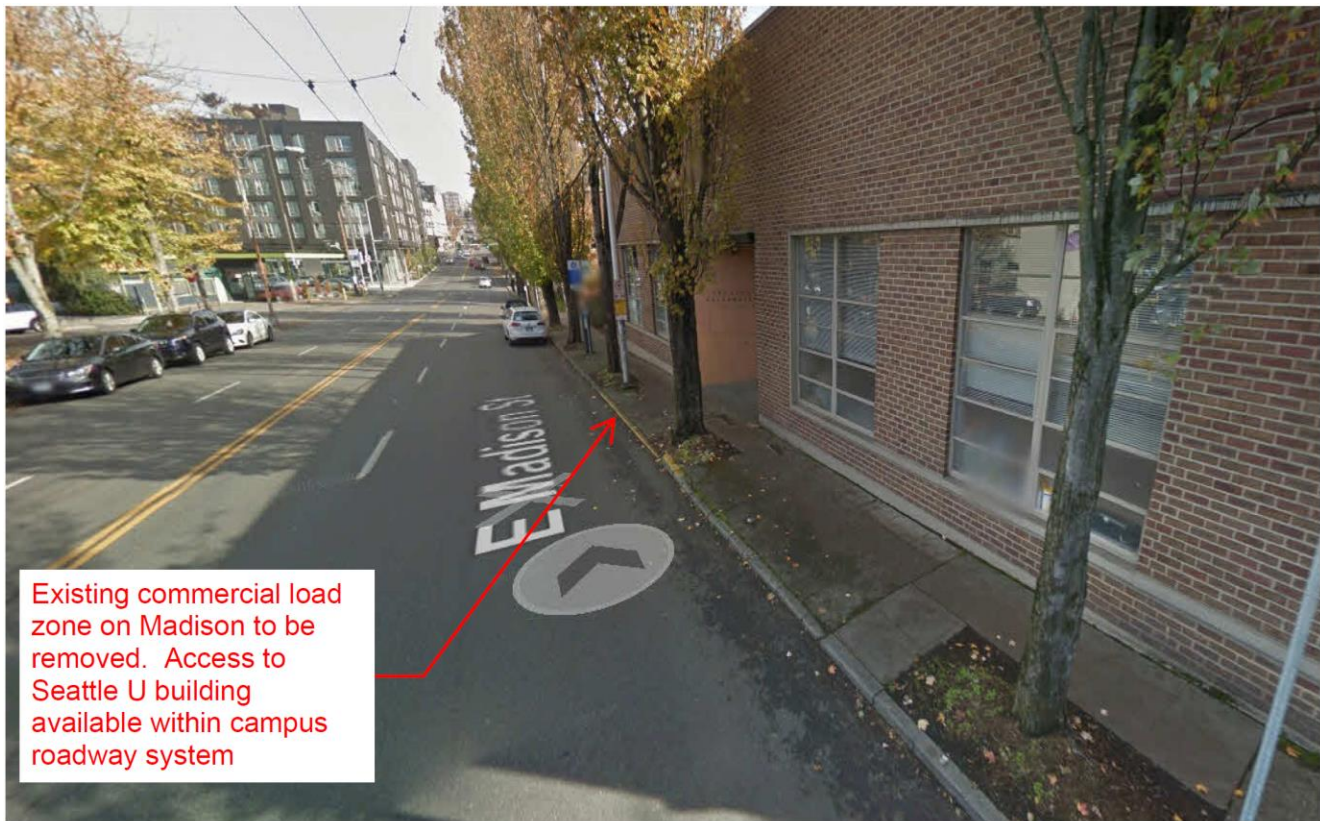
Madison & 8th - Passenger Load



Madison & 9th – Commercial Load



Madison & Boylston – Passenger Load



Madison & 10th – Commercial Load



Madison & 22nd – Passenger Load