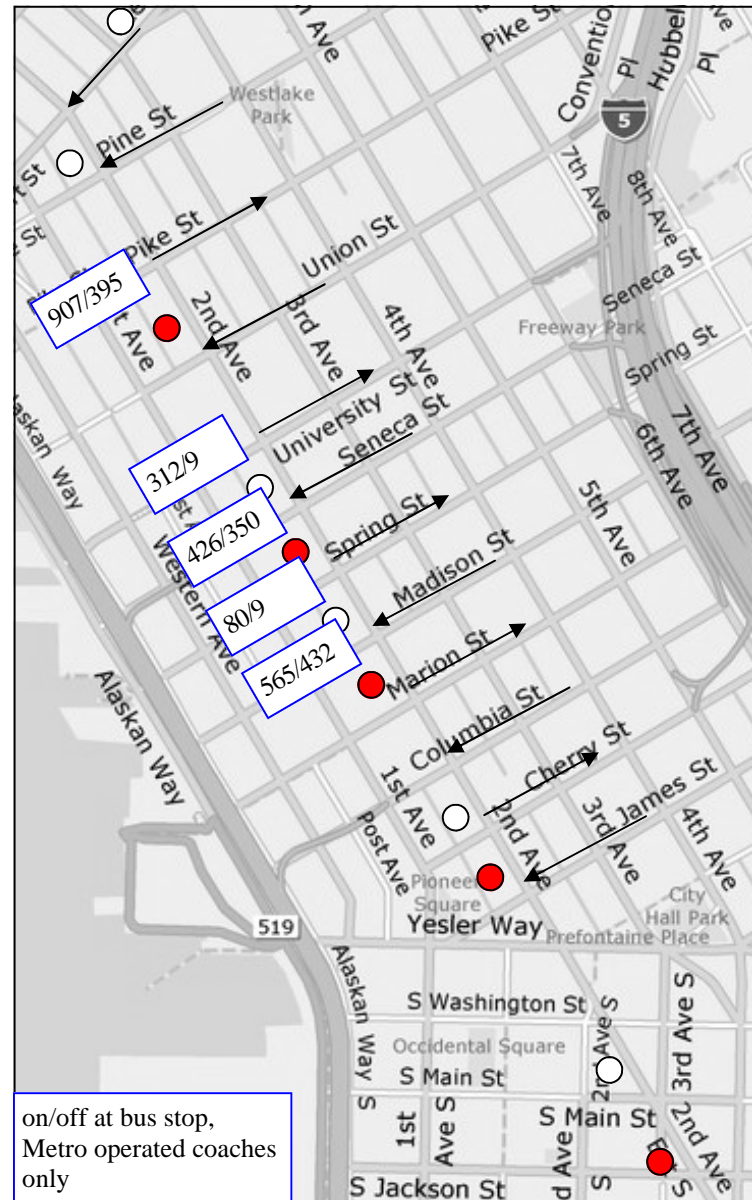


Second Avenue Bus Stop Spacing Improvement Alternatives

Background

With upcoming construction in the south of Downtown Seattle (SODO) Area, including Alaskan Way Viaduct (AWV) replacement project that will require lane restrictions on 1st Ave S and the AWV, overall downtown surface traffic demand and congestion on 2nd Ave are expected to increase. With increase of traffic congestion on 2nd Avenue, the transit skip-stop on 2nd Avenue between Stewart St and Jackson St is expected to become more difficult because traffic demand on adjacent curb lane will increase and this situation will reduce the ability for coaches to pass each other.

To help mitigate degradation in transit travel time and reliability on 2nd Avenue between Jackson St and Stewart St, the existing bus stop spacing on 2nd Ave, as shown below, was evaluated.

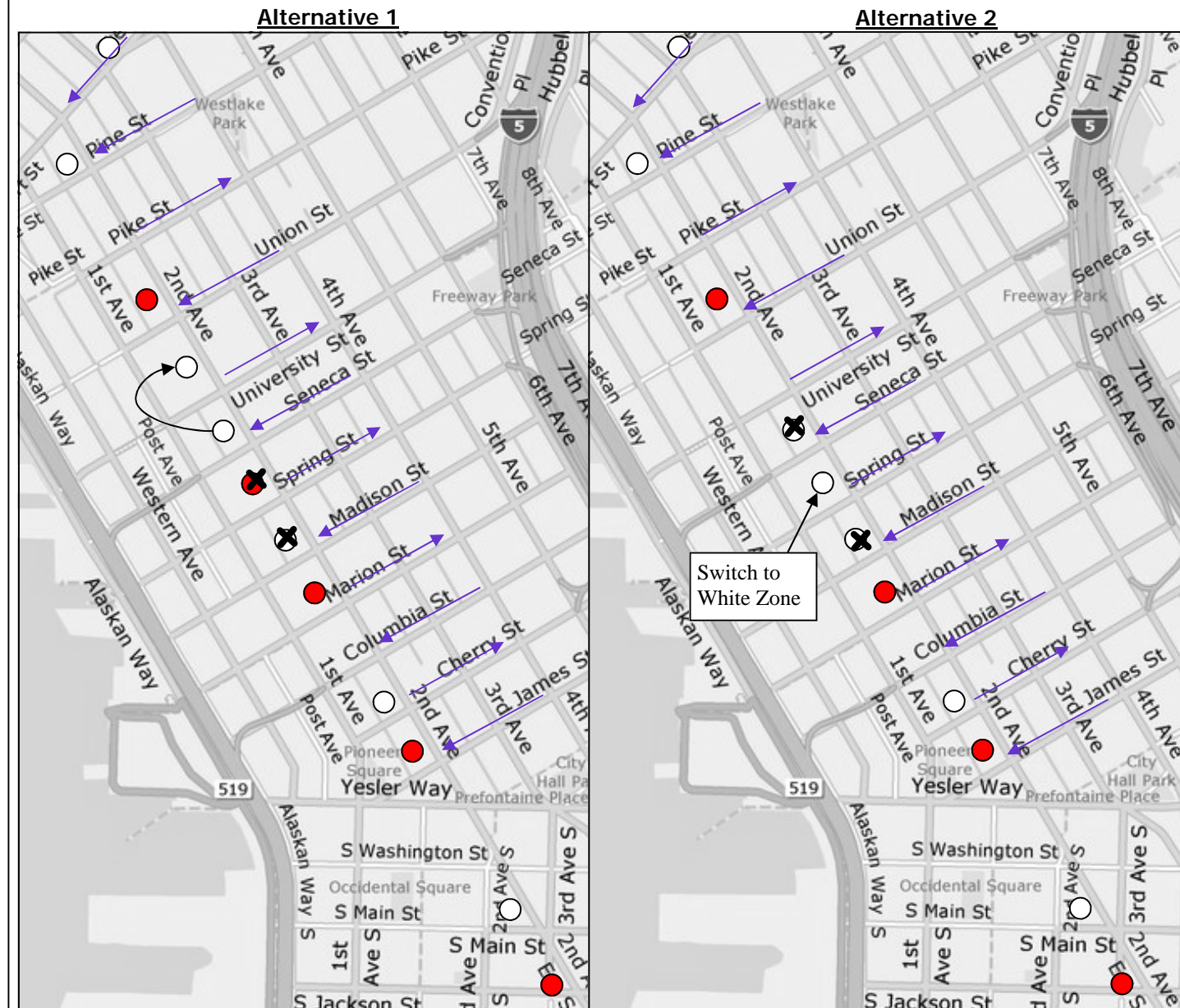


Analysis

There are four bus zones within four blocks between University St and Marion St; two "red" zones and two "white" zones. The close spacing of these bus stops makes passing maneuvers especially difficult; queues developing at one bus stop often interfere with operation of upstream bus stops. These problems will become worse with the expected increase in traffic volumes on 2nd Ave. The quick fix to improve this condition is to remove two of the four bus stops. There are two options considered in the evaluation as shown in the graphic below.

Alternative 1: Close two bus stops at FS Spring St and FS Madison St and relocate the FS University St stop to FS Union St
Advantages: Improve skip-stop operation, reduce bus weaving, improve travel time
Disadvantages: Resulting white stop spacing is six blocks apart, need to establish a new stop at FS Union St (adjacent property owner previously objected)

Alternative 2: Close FS Seneca St and FS Madison St stops and reassign FS Seneca St stop from red stop to white stop pattern.
Advantages: Improve skip-stop operation, reduce bus weaving, improve travel time, no need to establish a new stop, more even bus stop spacing.
Disadvantages: Switching of stop pattern from red to white stop at Spring St may take a while to get used to.



Potential Riders Impact

Alternative 1 would impact 506 ons and 359 off daily riders that currently use FS Seneca St and FS Spring St stops, and would impact 565 ons and 432 off daily riders relocated from FS University to FS Union St. Overall, this alternative would potentially impact 1071 ons and 791 off daily riders.

Alternative 2 would impact 392 ons and 18 offs daily riders currently use bus stops at FS University St and FS Spring St, and would impact 439 ons and 564 off daily riders when the FS Seneca St is changed from red to white stop pattern. Overall, this alternative would potentially impact 831 ons and 572 off daily riders. Note that these numbers reflect Metro operated coaches only.

In order to gauge customer acceptance of the proposed changes and to get a ballpark estimation of the travel time savings, a temporary bus stop closure at FS Seneca St and FS Spring St was conducted for five consecutive weekday from June 28 to July 2, 2010. Rider alerts were posted at the bus stops in early June (at least 3 weeks prior to bus stop closures). For the month of June, only two customers' feedback related to the bus stop closures were received.

Impacted Routes

- KC Metro**
19 21 24 25 37 131 132 134 143 152 158 159 161 162 175 177 179 190 192 196 202 210 214 215 306 312 522 554 577 600. (Plus inbound routes only 306,312,522 for Alternative 2)
- Community Transit**
401 402 404 405 406 408 410 411 412 413 414 415 416 417 421 422 424 425 435 477
- Pierce Transit**
578 590 592 593 594 595

Conclusion and Recommendation

Implement alternative 2 as part of the service change package in February 2011 and follow standard procedure for bus stop closure (post rider alert at least three weeks in advance and evaluate feedback from riders). Alternative 2 offers more advantages to the alternative 1. ST, CT and PT concur with this recommendation.

Based on the field observation of travel time between Union St and Marion St, closing two bus stops will yield almost a minute per trip savings during the afternoon peak hour as shown in the table below.

Average Travel Time [min:sec]	No Closure	Closure	Travel Time Savings
King County Metro	3:23	2:24	1:00
Community Transit	3:50	2:57	0:53
Pierce Transit	3:18	2:32	0:46
Combined Average	3:28	2:34	0:54