



November 24, 2008

Ms. Jennifer Charlebois
Washington State Department of Transportation
Urban Corridors Office
I-405 Project Office
401 2nd Avenue South, Suite 400
Seattle, WA 98104

**RE: Preliminary Traffic and Revenue Analysis –
Proposed I-405 Express Toll Lanes Improvements**

Dear Ms. Charlebois:

Wilbur Smith Associates is pleased to present this report summarizing the results of a preliminary analysis of express lanes on I-405, to be developed in phases from SR 167 to I-5 in Tukwila. The goal of this study was to develop preliminary-level traffic and revenue estimates for the I-405 improvements for use by WSDOT staff in their discussions with planners, stakeholders, and decision makers, and provide input to the financial planning process for the project.

The current work considered the following phasing plan:

- Phase 1 – SR 520 to I-5 North Express Toll Lanes (extended to NE 6th St.);
- Phase 2 – Phase 1 plus one additional lane in each direction (implemented as express toll lanes) between Renton and Bellevue and direct connector ramps at the SR 167 interchange; and
- Phase 3 – Phase 2 plus reconstruction of the SR 522 interchange and one additional lane in each direction between SR 522 and I-5.

Phases 1 and 2 were analyzed at 2014, 2020, 2030 levels while Phase 3 was analyzed at years 2020 and 2030 only. Traffic and revenue estimates were developed under two tolling conditions for all three phases: assuming tolls set as low as possible to maximum traffic usage while maintaining desired operating goals, and tolls set higher to optimize revenues.

MODELING ASSUMPTIONS

Where possible, WSA maintained consistency in assumptions and procedure between this preliminary study and the 2007 study for I-405 north. The micromodel developed for the previous I-405 study was used as the basis for this work and modified as needed to reflect the new project assumptions. Several key inputs or assumptions that were altered based on current plans include express lanes access points and other network configuration changes, definition of carpool for free travel from HOV-2+ to HOV-3+, and the tolling of the SR 520 bridge.

Network Configuration – The access points and toll zone definitions/limits for Phases 1, 2, and 3 are shown in Figures 1 through 3. Phase 1 is similar to the configuration studied in 2007 for the north section of I-405 but the extension to NE 6th Street has been added to the base configuration. Accordingly, the access assumptions in the vicinity of SR 520 have changed slightly. In Phase 1, the southbound segment



from SR 520 to NE 6th Street is a single lane and would be a potential bottleneck point in the express lanes that will need to be managed through the tolls set for that segment. This is less of an issue in the northbound direction since this segment will be two lanes wide. Other changes to the Phase 1 configuration include slight changes to the access points near NE 116th Street and the removal of braided ramps in the northbound direction between NE 160th Street and SR 522.

Trip Tables - For this analysis, WSA used the regional trip tables and networks that were developed for the northern I-5 to SR 520 study completed in 2007. While these may not have fully recognized recent events that affect the economic forecast for the region, the long-range outlook remains substantially similar to the forecasts earlier.

The improvements assumed for Phases 1 and 2 were coded into the highway network, as were current configurations for the SR 520 bridge improvements, which are now assumed to be in place by 2014. The tolls on SR 520 were assumed to be in place with no tolls assumed on I-90. This assumption altered the travel patterns that were extracted from the regional model to the I-405 micro-model. WSA reviewed the traffic forecasts that were developed for the environmental reports for the SR 520 project and used them as a guide for adjusting the growth in volumes at the external points in the I-405 model representing SR 520 and I-90.

During this process, the traffic volumes on SR 520 and I-90 in the base 2005 micromodel trip tables were reviewed and found to be higher than counts published in the WSDOT traffic reports on both sides of I-405. The traffic entering the micromodel trip tables in each corridor were reduced by about 15,000 vehicles per day.

Using a process originally developed for the 2007 study, the traffic traveling in the I-405 micromodel subarea was extracted from the regional model for both Phase 1 and Phase 2 for 2014, 2020, and 2030. The total growth estimated from the assignments from 2005 to the forecasted year was added to the base 2005 trip tables used in the micromodel.

Finally, given recent increases in gas prices and the change in minimum carpool occupancy of three-or-more occupants, WSA believes it is prudent to assume that HOV-3+ traffic would be a higher share of the total traffic stream than in previous scenarios. As such, the HOV-3+ share of traffic was increased by 50 percent in each time period from the base used in the previous study.

Travel Time Simulation (Vissim) – As part of this study, the Vissim microsimulation model developed by WSDOT was used to estimate the sensitivity of travel time and delay for the general purpose lanes for the Phase 2 project configuration. A series of Vissim model runs were made using differing assumptions about traffic shifts to the express toll lanes for each of the analysis periods. For each time period, for each general purpose roadway segment, a relationship was developed between the “traffic demand” on the segment and its modeled travel speed. This relationship was graphed to allow WSA to develop scenario-specific volume-delay curves for each mainline link on the general purpose lanes. This process allowed the traffic assignment model to recognize sections that breakdown due to weaving, merging, or queuing from downstream bottleneck points.



Value-of-time – The value-of-time assumptions developed for the I-405 north study were based on stated preference surveys conducted of travelers using I-405. These assumptions were re-used in this work effort.

Toll Rate Selection – A series of toll sensitivity runs were performed for a wide range of toll rates to identify the traffic that would be in each segment of the express lanes. In the base set of traffic and revenue estimates, it was assumed that the toll rates would be set to allow the maximum amount of traffic in the express lanes while maintaining desired speeds in the lanes. For a single-lane section, this limit was 1,500 vehicles per hour; for a two-lane section, the express lanes were limited to 1,600 vehicles per lane per hour. The traffic volumes on each mainline segment and selected ramp locations, as well as merging and weaving volumes at access points (particularly in the southern half of the corridor) were reviewed to ensure that the total volume would not exceed this operational limit. Ultimately, different combinations of per-mile toll rates and surcharges at selected ramps were selected for each toll zone section and a series of combination runs were conducted to manage demand at peak load locations while trying to maximize usage at other locations.

Hours of Operation – For the purposes of the base case revenues, it was assumed that the express lanes would be tolled from 5 a.m. to 7 p.m. Outside of these hours, the lanes would be free and open to all traffic. The revenue optimization scenarios that were performed after the base set of runs assumed an additional hour of operation, from 7-8 p.m.

ESTIMATED TRAFFIC AND REVENUE

For each phase, an initial set of runs were performed assuming maximum traffic usage of the express lanes. Then, another set of runs were performed to maximize revenues. These results of these analyses are reported in this section.

Phase 1 with Traffic Optimization - The per-mile toll rates selected to maximize traffic for Phase 1 are shown in Table 1, which also shows the ramps that may need surcharges to manage demand. Two of the most critical locations in terms of needing higher rates to manage demand were the single-lane section in the southbound direction between SR 520 and NE 6th Street and the entry ramp serving traffic from SR 522 in toll zone segment E. In general, most of the toll rates in Phase 1 are lower than the toll rates used for the 2007 study, due to the assumption that the HOV-2 traffic is assumed to be tolled in this study, although specific segments and specific time periods may have higher average tolls due to the need to manage demand in the single-lane section southbound to NE 6th Street.

The estimated traffic and revenue by time period and direction for Phase 1 at 2014, 2020, and 2030 levels are shown in Tables 2 through 4. Annual traffic and revenue for 2014 through 2030 are shown in Table 5. The average number of tolled transactions for Phase 1 is estimated to grow from 36,037 per weekday in 2014 (with ramp up effects) to 63,675 per weekday in 2030. Revenue is estimated to grow from \$16.4 million in 2014 to \$56.1 million in 2030, representing an average annual increase of 5.6 percent per year after the initial years of ramp up.

The traffic volumes in the express lanes for each period, by vehicle occupancy type, are shown in Figures 4 through 6 for the Phase 1 configuration. The tolling of HOV-2 traffic has caused a rebalancing of SOV and HOV-2 volumes, resulting in HOV-2 volumes that are similar in magnitude to HOV-3+ volumes. While the amount of HOV-2 traffic in the entire corridor is still substantially higher than HOV-3+, there



are now more HOV-2 vehicles in the general purpose lanes than in the previous study while almost all the HOV-3+ vehicles are in the express lanes.

Phase 2 with Traffic Optimization – Table 6 shows the toll rates selected to maximize traffic usage of the express lanes under the Phase 2 configuration for each analysis year. In the southern half of the project, the anticipated design of the access points would result in a slightly lower level of weaving capacity and toll rates in several sections are affected by the need to manage traffic demand at the access points. Another location that governs toll rates is the single-lane section through the NE 6th Street interchange.

The estimated traffic and revenue by time period and direction for Phase 2 is shown in Tables 7 through 9. Annual traffic and revenue for 2014 through 2030 are shown in Table 10. The average number of tolled transactions for Phase 2 is estimated to grow from 75,128 per weekday (with ramp up effects) in 2014 to 122,562 in 2030. Revenue is estimated to grow from \$44.3 million in 2014 to \$142.0 million in 2030.

Phase 3 with Traffic Optimization – Table 11 shows the toll rates selected to maximize traffic usage of the express lanes for the Phase 3 configuration each analysis year. The primary differences in toll rates between Phase 2 and 3 occur in the northern toll zones, since a lower toll is needed to manage demand in Toll Zone F due to the increased capacity.

The estimated traffic and revenue by time period and direction for Phase 3 is shown in Tables 12 and 13. Annual traffic and revenue for 2020 through 2030 are shown in Table 14. As shown, the estimated toll revenue for this scenario would be only very slightly higher than Phase 2 since lower tolls would be needed in the northernmost toll zone to manage demand, which would offset the additional traffic demand in the northernmost toll zone. In addition, increased surcharges may be required at selected congested downstream locations to discourage additional traffic at these access points.

REVENUE OPTIMIZATION SCENARIOS

Following submittal of the traffic optimization results for all three phases, WSA considered options to optimize revenues, focusing on the following assumptions/areas:

- Increased minimum tolls to \$1.00;
- Increases in per-mile toll rates (with corresponding adjustments to select entry/exit point surcharges) in different toll zones;
- Addition of one hour of toll operation (7-8 p.m.); and
- Testing of assumptions regarding HOV-3+ demand in the corridor similar to 2007 study.

Each of the potential methods to increase revenues listed above were tested sequentially, but cumulatively, beginning with the first on the list, increasing minimum tolls. With a higher minimum toll assumption, the per-mile rates for selected toll zones were raised. Then an hour of toll operation was added, and finally, a test was performed assuming the same share of total HOV-3+ demand on the freeway as in the I-405 north study. Since these tests were conducted sequentially, the net impact of each test could be determined.

Phase 1 with Revenue Optimization – The increase of minimum tolls to \$1.00 produced 3 percent additional revenue in 2014 for the Phase 1 configuration. Changes in per-mile rates and surcharges were



tested on top of the increased minimum toll assumption and resulted in approximately 17 percent additional revenue in 2014. Increasing the hours of operation by one hour in the evening brought 1.5 percent additional revenue annually. A final test was assuming a less aggressive assumption in carpooling by using the same HOV-3+ percentages as in the I-405 north study. This change in assumption increased the revenues by almost 5 percent, but this assumption is not summarized in the tables in this report. In total, the revenue optimization scenario for Phase 1 could potentially result in an increase of revenues of 22 percent in the early part of the forecast period, diminishing to about 15 percent by 2030, with a cumulative increase of 19 percent over the entire period from 2014 through 2030.

Tolled and free traffic by time period and direction are summarized in Tables 15 through 17 for 2014, 2020, and 2030, respectively, for the cumulative effects of all the revenue-enhancing strategies, but not including bringing the share of HOV-3+ traffic back to their original growth forecast, which was performed primarily as a sensitivity test. Table 18 shows the annual traffic and revenue for the forecast period with these assumptions. At 2014 levels, toll free traffic increased by just under 6 percent annually while tolled traffic decreased by almost 23 percent, for a net reduction in traffic of about 14 percent. The ability to raise tolls to enhance revenue during peak periods is diminished over time as tolls are raised to manage demand and already approach revenue-optimizing levels.

Phase 2 with Revenue Optimization – Tables 19 through 21 show the traffic and revenue by time period and direction for the Phase 2 project configuration for the three analysis years. Table 22 shows the annual traffic and revenue for the forecast period with the revenue optimization assumptions.

Minimum tolls accounted for a 4 percent increase in revenues at 2014 levels; increased per-mile rates increased revenue by an additional 22 percent; and increasing the hours of operation by one hour produced an additional 4 percent over and above the previous changes. In total, the impact of all four changes in assumptions resulted in revenues that were higher than the traffic optimization scenario by 32 percent in 2014, 29 percent in 2020, and 25 percent in 2030, with a cumulative increase over the entire period of 28 percent. The net traffic impacts of these revenue-enhancing assumptions are 7 percent more toll-free traffic and 16 percent less tolled traffic on a daily basis, with a net reduction of 11 percent in total traffic at 2014 levels.

Phase 3 with Revenue Optimization – Tables 23 and 24 show the traffic and revenue by time period and direction for the Phase 3 project configuration for 2020 and 2030 only. Table 25 shows the annual traffic and revenue for the forecast period with these revenue optimization assumptions.

At 2020 levels, minimum tolls accounted for 3 percent of the net increase in revenues, while increases in per-mile further increased revenues by 19 percent and the additional hour of operation added another 6 percent to revenues. The total increase in revenues from the revenue optimization strategies is estimated to be 31 percent at 2020 levels and 27 percent at 2030 levels, with an increase of 28 percent over the 11-year period. With the revenue optimization scenario, toll-free traffic increased by 8 percent on a daily basis while tolled traffic decreased by 14 percent, with a net reduction of 10 percent at 2020 levels.

SENSITIVITY TEST: PHASE 2 WITH HOV-2+ TRAFFIC FREE

A sensitivity test was performed on Phase 2 assuming that HOV-2 traffic was also allowed to use the express lanes for free. This test was performed for the traffic optimization scenario only. The toll rates needed to manage demand are shown in Table 18. As shown, by 2030, there would be sufficient HOV-2+



demand at the SR 522 access points during many time periods to reach the desired capacity of these access points. These locations were assumed to be closed to SOV traffic during these time periods.

Tables 26 shows the toll rates used for this scenario, and Tables 27 through 29 show the estimated traffic and revenue for this scenario for 2014, 2020, and 2030. Table 30 shows the annual traffic and revenue for the forecast period. The revenue for this option would be approximately 40 to 50 percent lower than the revenues forecasted if only HOV-3+ were allowed to use the express lanes for free.

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We trust that this summary of our work efforts is suited to your needs. Please do not hesitate to contact us should you require additional information.

Respectfully submitted,

WILBUR SMITH ASSOCIATES

A handwritten signature in black ink that reads 'Cissy Szeto'.

Cissy Szeto
Senior Associate

Table 1
Per-Mile Toll Rates and Ingress / Egress Surcharges
Phase 1 - Traffic Optimization
All Toll Rates are Shown in Current Dollars

2014 Northbound - Minimum Toll \$0.60					2014 Southbound - Minimum Toll \$0.60				
Time Period	Per-Mile Toll Rate			Ingress / Egress Egress 8 (1)	Per-Mile Toll Rate (\$)			Ingress / Egress Surcharge (\$)	
	By Toll Zone				By Toll Zone				
	South End	Middle	North End	North End	South End	South End	Ingress 19 (2)	Egress 28 (3)	
AM0	0.05	0.05	0.05		0.05	0.05	0.05		
AM1	0.05	0.05	0.05		0.05	0.05	0.05		
AM2	0.05	0.05	0.05		0.55	0.45	0.30	1.40	3.00
AM3	0.05	0.05	0.05		0.25	0.15	0.10	1.00	
Mid	0.05	0.05	0.05		0.05	0.05	0.05		
PM1	0.10	0.10	0.10	0.75	0.05	0.05	0.05		
PM2	0.10	0.50	0.45	2.00	0.05	0.05	0.05		0.40
PM3	0.05	0.25	0.30	1.75	0.10	0.05	0.05		0.45
PM4	0.05	0.15	0.20	1.00	0.05	0.05	0.05		0.85

2020 Northbound - Minimum Toll \$0.75					2020 Southbound - Minimum Toll \$0.75				
Time Period	Per-Mile Toll Rate			Ingress / Surcharge (\$)	Per-Mile Toll Rate (\$)			Ingress / Egress Surcharge (\$)	
	By Toll Zone				By Toll Zone				
	South End	Middle	North End	North End	South End	South End	Ingress 19 (2)	Egress 28 (3)	
AM0	0.05	0.05	0.05		0.05	0.05	0.05		
AM1	0.05	0.05	0.05		0.10	0.05	0.05		
AM2	0.05	0.05	0.05		0.55	0.45	0.30	2.00	3.00
AM3	0.05	0.05	0.05		0.40	0.15	0.20	1.45	1.00
Mid	0.05	0.05	0.05		0.05	0.05	0.05		
PM1	0.15	0.25	0.15	1.45	0.05	0.05	0.05		
PM2	0.25	0.70	0.45	2.55	0.10	0.05	0.20		1.10
PM3	0.30	0.30	0.45	2.70	0.25	0.05	0.35		1.50
PM4	0.15	0.15	0.35	2.00	0.05	0.05	0.40		2.00

2030 Northbound - Minimum Toll \$1.00					2030 Southbound - Minimum Toll \$1.00				
Time Period	Per-Mile Toll Rate			Ingress / Surcharge (\$)	Per-Mile Toll Rate (\$)			Ingress / Egress Surcharge (\$)	
	By Toll Zone				By Toll Zone				
	South End	Middle	North End	North End	South End	South End	Ingress 19 (2)	Egress 28 (3)	
AM0	0.05	0.05	0.05		0.05	0.05	0.05		
AM1	0.05	0.05	0.05		0.20	0.05	0.10	0.85	
AM2	0.05	0.05	0.05		0.85	0.55	0.50	2.50	5.75
AM3	0.05	0.05	0.05		0.65	0.40	0.50	2.30	1.90
Mid	0.05	0.05	0.05		0.05	0.05	0.05		
PM1	0.20	0.40	0.30	2.85	0.05	0.05	0.05		
PM2	0.35	0.75	0.65	3.70	0.10	0.10	0.60		2.10
PM3	0.60	0.35	0.65	5.00	0.35	0.05	1.10		2.30
PM4	0.45	0.30	0.55	3.10	0.15	0.05	0.90		2.15

- (1) Egress 8 is the northbound exit ramp from the express toll lanes between NE 128th Street and NE 160 Street.
(2) Ingress 19 is the southbound entry ramp to the express toll lanes between SR 522 and NE 160 Street.
(3) Egress 28 is the southbound southern terminus of the express toll lane. It represents the point where vehicles exit at NE 6 St., or leave the Express toll lane to the general purpose lanes.

NOTE: The time periods are defined as:

AM0 = 5:00-5:30 AM	AM2 = 6:30 - 8:30 AM	PM1 = 2:30 - 3:30 PM	PM3 = 5:30 - 6:30 PM
AM1 = 5:30 - 6:30 AM	AM3 = 8:30 - 9:30 AM	PM2 = 3:30 - 5:30 PM	PM4 = 6:30 - 7:00 PM
	Midday = 9:30 AM - 2:30 PM		

Table 2
2014 Estimated Traffic and Gross Toll Revenue
Phase 1 - Traffic Optimization
All Toll Revenues in Current Dollars

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	832	723			
AM Peak	1,132	1,946	3,078	0.69	1,340	338,100
Midday	2,916	6,310	9,226	0.67	4,250	1,072,300
PM Shoulder	1,601	4,947	6,548	1.34	6,606	1,666,700
PM Peak	3,993	10,112	14,105	2.99	30,205	7,620,700
Total	10,474	24,038	34,512	\$1.78	\$42,892	\$10,821,700

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	1,729	5,331			
AM Peak	2,491	4,790	7,281	5.88	28,154	7,103,300
Midday	2,957	5,833	8,790	0.66	3,828	965,800
PM Shoulder	916	2,776	3,692	0.86	2,393	603,800
PM Peak	2,167	8,713	10,880	0.90	7,873	1,986,400
Total	10,260	27,443	37,703	\$1.82	\$49,900	\$12,589,900

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	2,561	6,054			
AM Peak	3,623	6,736	10,359	4.38	29,494	7,441,300
Midday	5,873	12,143	18,016	0.67	8,078	2,038,100
PM Shoulder	2,517	7,723	10,240	1.17	8,999	2,270,400
PM Peak	6,160	18,825	24,985	2.02	38,078	9,607,100
Total	20,734	51,481	72,215	\$1.80	\$92,792	\$23,411,400

Note: The 2014 traffic and toll revenue in this table does not include the effects of ramp-up in demand.



Table 3
2020 Estimated Traffic and Gross Toll Revenue
Phase 1 - Traffic Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	872	1,046	1,918	\$0.79	\$825	\$208,100
AM Peak	1,201	2,559	3,760	0.78	1,984	500,600
Midday	3,201	8,042	11,243	0.77	6,221	1,569,600
PM Shoulder	1,686	5,055	6,741	2.31	11,683	2,947,600
PM Peak	4,113	9,086	13,199	4.72	42,928	10,830,700
Total	11,073	25,788	36,861	\$2.47	\$63,641	\$16,056,600

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,880	5,589	7,469	\$2.20	\$12,320	\$3,108,300
AM Peak	2,496	5,390	7,886	5.96	32,141	8,109,200
Midday	3,256	7,672	10,928	0.78	5,986	1,510,300
PM Shoulder	989	3,162	4,151	1.43	4,526	1,141,900
PM Peak	2,319	8,440	10,759	2.10	17,704	4,466,700
Total	10,940	30,253	41,193	\$2.40	\$72,677	\$18,336,400

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,752	6,635	9,387	\$1.98	\$13,145	\$3,316,500
AM Peak	3,697	7,949	11,646	4.29	34,125	8,609,700
Midday	6,457	15,714	22,171	0.78	12,207	3,079,800
PM Shoulder	2,675	8,217	10,892	1.97	16,209	4,089,500
PM Peak	6,432	17,526	23,958	3.46	60,632	15,297,500
Total	22,013	56,041	78,054	\$2.43	\$136,318	\$34,393,000

Table 4
2030 Estimated Traffic and Gross Toll Revenue
Phase 1 - Traffic Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,052	1,665	2,717	\$1.00	\$1,665	\$420,100
AM Peak	1,311	3,636	4,947	1.00	3,636	917,400
Midday	3,413	10,774	14,187	1.00	10,774	2,718,300
PM Shoulder	1,803	4,715	6,518	4.13	19,472	4,912,800
PM Peak	4,244	8,961	13,205	6.76	60,574	15,282,800
Total	11,823	29,751	41,574	\$3.23	\$96,121	\$24,251,400

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,113	5,506	7,619	\$4.31	\$23,755	\$5,993,400
AM Peak	2,497	5,076	7,573	9.34	47,416	11,963,100
Midday	3,502	11,260	14,762	1.00	11,260	2,840,900
PM Shoulder	1,111	3,919	5,030	2.16	8,460	2,134,500
PM Peak	2,532	8,163	10,695	4.32	35,253	8,894,300
Total	11,755	33,924	45,679	\$3.72	\$126,144	\$31,826,200

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	3,165	7,171	10,336	\$3.54	\$25,420	\$6,413,500
AM Peak	3,808	8,712	12,520	5.86	51,052	12,880,400
Midday	6,915	22,034	28,949	1.00	22,034	5,559,200
PM Shoulder	2,914	8,634	11,548	3.24	27,932	7,047,200
PM Peak	6,776	17,124	23,900	5.60	95,827	24,177,200
Total	23,578	63,675	87,253	\$3.49	\$222,265	\$56,077,500



Table 5
Annual Traffic and Toll Revenue
Phase 1 - Traffic Optimization

		<u>Average Weekday Trips</u>				
<u>Year</u>		<u>Toll Trips</u>	<u>Toll-Free Trips</u>	<u>Total Trips</u>	<u>Annual Toll Revenue (2)</u> <u>(000)</u>	<u>Average Toll</u>
2014	(1)	36,037	14,514	50,551	\$16,388	\$1.80
2015	(2)	46,993	18,848	65,841	22,465	1.89
2016		52,958	21,152	74,110	26,614	1.99
2017		53,713	21,364	75,077	28,376	2.09
2018		54,478	21,578	76,056	30,254	2.20
2019		55,254	21,794	77,048	32,257	2.31
2020		56,041	22,013	78,054	34,393	2.43
2021		56,761	22,165	78,926	36,116	2.52
2022		57,491	22,317	79,808	37,926	2.61
2023		58,230	22,471	80,701	39,826	2.71
2024		58,978	22,626	81,604	41,821	2.81
2025		59,736	22,782	82,518	43,917	2.91
2026		60,504	22,939	83,443	46,117	3.02
2027		61,282	23,097	84,379	48,428	3.13
2028		62,069	23,256	85,326	50,854	3.25
2029		62,867	23,417	86,284	53,402	3.37
2030		63,675	23,578	87,253	56,077	3.49
Cumulative Revenue					\$645,232	

(1) Ramp-up adjustment factors are applied to transactions and revenue for the first two years of operation. Adjustment factors for 2014 was 70% and 2015 was 90%.

(2) For the development of annual toll revenue, a nominal amount equal to 2 percent of average weekday toll revenue was added for each weekend day.

Note: All toll revenue is calculated in current dollars.

Table 6
Per-Mile Toll Rates and Ingress / Egress Surcharges
Phase 2 - Traffic Optimization
All Toll Rates are Shown in Current Dollars

2014 Northbound - Minimum Toll \$ 1.00						
Time Period	Per-Mile Toll Rate (\$)					
	A	B	C	D	E	F
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.05	0.50	0.35	0.05	0.05	0.05
AM3	0.05	0.15	0.05	0.05	0.05	0.05
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.15	0.50	0.10	0.15	0.20	0.15
PM2	0.10	0.65	0.20	0.30	0.55	0.30
PM3	0.05	0.55	0.15	0.20	0.40	0.15
PM4	0.05	0.05	0.05	0.05	0.15	0.15
Ingress / Egress (1) Surcharges (\$)						
						Egress 8 = 50
						Egress 18 = 75
						Egress 18 = 150
						Egress 18 = 150
						Egress 18 = 100

2014 Southbound - Minimum Toll \$ 1.00						
Time Period	Per-Mile Toll Rate (\$)					
	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.45	0.60	0.15	0.20	0.25	0.10
AM3	0.25	0.20	0.15	0.05	0.15	0.10
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.05	0.05	0.05	0.20	0.80	0.10
PM2	0.05	0.05	0.05	0.30	1.10	0.25
PM3	0.15	0.05	0.05	0.25	1.10	0.20
PM4	0.05	0.05	0.05	0.15	1.00	0.15
Ingress / Egress (1) Surcharges (\$)						
						Ingress 29 = 300
						Ingress 29 = 200
						Ingress 38 = 50
						Ingress 38 = 50

2020 Northbound - Minimum Toll \$ 1.25						
Time Period	Per-Mile Toll Rate (\$)					
	A	B	C	D	E	F
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.10	0.70	0.40	0.05	0.05	0.05
AM3	0.05	0.45	0.15	0.05	0.05	0.05
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.20	0.75	0.10	0.35	0.25	0.15
PM2	0.25	0.90	0.20	0.45	0.70	0.35
PM3	0.25	0.85	0.20	0.40	0.65	0.30
PM4	0.05	0.05	0.05	0.25	0.40	0.20
Ingress / Egress (1) Surcharges (\$)						
						Egress 18 = 125
						Egress 18 = 225
						Egress 18 = 190
						Egress 18 = 125

2020 Northbound - Minimum Toll \$ 1.65						
Time Period	Per-Mile Toll Rate (\$)					
	A	B	C	D	E	F
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.40	1.20	0.60	0.05	0.05	0.25
AM3	0.15	0.85	0.40	0.05	0.05	0.05
Mid	0.10	0.05	0.10	0.10	0.10	0.10
PM1	0.45	1.00	0.20	0.40	0.50	0.25
PM2	0.80	1.15	0.20	0.65	0.85	0.35
PM3	0.85	1.25	0.25	0.65	0.85	0.50
PM4	0.40	0.80	0.15	0.45	0.70	0.40
Ingress / Egress (1) Surcharges (\$)						
						Egress 18 = 450
						Egress 18 = 450
						Egress 18 = 300

2020 Southbound - Minimum Toll \$ 1.25						
Time Period	Per-Mile Toll Rate (\$)					
	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.45	0.60	0.35	0.20	0.25	0.30
AM3	0.40	0.35	0.15	0.05	0.25	0.25
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.05	0.05	0.05	0.25	0.95	0.20
PM2	0.20	0.10	0.05	0.40	1.35	0.25
PM3	0.30	0.10	0.05	0.40	1.30	0.20
PM4	0.05	0.05	0.05	0.35	1.25	0.20
Ingress / Egress (1) Surcharges (\$)						
						Ingress 29 = 300
						Ingress 29 = 250
						Ingress 38 = 75
						Ingress 38 = 50

2030 Southbound - Minimum Toll \$ 1.65						
Time Period	Per-Mile Toll Rate (\$)					
	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.20	0.05	0.05	0.05	0.05	0.05
AM2	0.60	0.75	0.45	0.20	0.70	0.60
AM3	0.60	0.60	0.40	0.20	0.60	0.55
Mid	0.05	0.05	0.10	0.10	0.10	0.30
PM1	0.05	0.05	0.05	0.35	1.60	0.40
PM2	0.20	0.20	0.25	0.50	1.85	0.85
PM3	0.55	0.20	0.20	0.45	1.85	0.60
PM4	0.20	0.10	0.15	0.35	1.60	0.60
Ingress / Egress (1) Surcharges (\$)						
						Ingress 29 = 100
						Ingress 29 = 100

NOTE: The time periods are defined as:

- AM0 = 5:00 - 5:30 AM
- AM1 = 5:30 - 6:30 AM
- AM2 = 6:30 - 8:30 AM
- AM3 = 8:30 - 9:30 AM
- MD1 = 9:30 - 14:30 PM
- PM1 = 14:30 - 15:30 PM
- PM2 = 15:30 - 17:30 PM
- PM3 = 17:30 - 18:30 PM
- PM4 = 18:30 - 19:00 PM

Egress 8 is the northbound exit ramp from the express toll lanes between I-90 and SE 8 Street.
Egress 18 is the northbound exit ramp from the express toll lanes between NE 128th Street and NE 160 Street.
Ingress 29 is the southbound entry ramp to the express toll lanes between SR 522 and NE 160 Street.

Table 7
2014 Estimated Traffic and Gross Toll Revenue
Phase 2 - Traffic Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll		Total			
	Free	Tolled				
AM Shoulder	1,471	5,093	6,564	\$1.14	\$5,786	\$1,459,800
AM Peak	2,238	7,389	9,627	2.57	18,978	4,788,100
Midday	4,133	15,743	19,876	0.77	12,075	3,046,500
PM Shoulder	2,025	7,888	9,913	2.13	16,823	4,244,400
PM Peak	4,798	16,253	21,051	3.85	62,596	15,793,000
Total	14,665	52,366	67,031	\$2.22	\$116,258	\$29,331,800

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll		Total			
	Free	Tolled				
AM Shoulder	2,070	7,765	9,835	\$1.64	\$12,696	\$3,203,200
AM Peak	3,032	9,901	12,933	3.68	36,465	9,200,100
Midday	4,590	15,330	19,920	0.72	10,986	2,771,800
PM Shoulder	1,840	6,732	8,572	3.03	20,404	5,147,900
PM Peak	4,381	15,232	19,613	3.57	54,305	13,701,200
Total	15,913	54,960	70,873	\$2.45	\$134,856	\$34,024,200

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll		Total			
	Free	Tolled				
AM Shoulder	3,541	12,858	16,399	\$1.44	\$18,482	\$4,663,000
AM Peak	5,270	17,290	22,560	3.21	55,443	13,988,300
Midday	8,723	31,073	39,796	0.74	23,061	5,818,300
PM Shoulder	3,865	14,620	18,485	2.55	37,227	9,392,400
PM Peak	9,179	31,485	40,664	3.71	116,901	29,494,100
Total	30,578	107,326	137,904	\$2.34	\$251,114	\$63,356,100

Note: The 2014 traffic and toll revenue in this table does not include the effects of ramp-up in demand.



Table 8
2020 Estimated Traffic and Gross Toll Revenue
Phase 2 - Traffic Optimization
All Toll Revenues in Current Dollars

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	1,531	5,541			
AM Peak	2,277	8,060	10,337	3.19	25,701	6,484,400
Midday	4,381	18,067	22,448	0.88	15,861	4,001,700
PM Shoulder	2,143	8,056	10,199	3.31	26,674	6,729,900
PM Peak	5,048	15,700	20,748	5.62	88,234	22,261,400
Total	15,380	55,424	70,804	\$2.99	\$165,686	\$41,802,600

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	2,226	8,440			
AM Peak	3,156	9,841	12,997	4.61	45,408	11,456,400
Midday	4,847	16,989	21,836	0.85	14,371	3,625,800
PM Shoulder	1,924	7,203	9,127	3.58	25,798	6,508,800
PM Peak	4,670	16,026	20,696	4.34	69,527	17,541,700
Total	16,823	58,499	75,322	\$2.98	\$174,570	\$44,044,000

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	3,757	13,981			
AM Peak	5,433	17,901	23,334	3.97	71,109	17,940,800
Midday	9,228	35,056	44,284	0.86	30,232	7,627,500
PM Shoulder	4,067	15,259	19,326	3.44	52,472	13,238,700
PM Peak	9,718	31,726	41,444	4.97	157,761	39,803,100
Total	32,203	113,923	146,126	\$2.99	\$340,256	\$85,846,600



Table 9
2030 Estimated Traffic and Gross Toll Revenue
Phase 2 - Traffic Optimization
All Toll Revenues in Current Dollars

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	1,823	6,307			
AM Peak	2,484	8,361	10,845	5.62	46,989	11,855,300
Midday	5,596	21,702	27,298	1.34	29,017	7,321,000
PM Shoulder	2,255	7,953	10,208	5.97	47,448	11,971,100
PM Peak	5,662	15,056	20,718	8.71	131,193	33,100,000
Total	17,820	59,379	77,199	\$4.59	\$272,390	\$68,724,000

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	2,656	8,731			
AM Peak	3,205	9,880	13,085	7.24	71,544	18,050,600
Midday	6,121	20,764	26,885	1.58	32,864	8,291,600
PM Shoulder	2,074	7,968	10,042	5.09	40,528	10,225,200
PM Peak	5,527	15,840	21,367	6.79	107,590	27,145,000
Total	19,583	63,183	82,766	\$4.60	\$290,664	\$73,334,600

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	4,479	15,038			
AM Peak	5,689	18,241	23,930	6.50	118,533	29,905,900
Midday	11,717	42,466	54,183	1.46	61,881	15,612,600
PM Shoulder	4,329	15,921	20,250	5.53	87,976	22,196,300
PM Peak	11,189	30,896	42,085	7.73	238,783	60,245,000
Total	37,403	122,562	159,965	\$4.59	\$563,054	\$142,058,600



Table 10
Annual Traffic and Toll Revenue
Phase 2 - Traffic Optimization

Year	Average Weekday Trips			Annual Toll Revenue (2) (000)	Average Toll
	Toll Trips	Toll-Free Trips	Total Trips		
2014 (1)	75,128	21,405	96,533	\$44,349	\$2.34
2015 (1)	97,559	27,759	125,317	59,982	2.44
2016	109,481	31,110	140,592	70,108	2.54
2017	110,575	31,380	141,955	73,749	2.64
2018	111,680	31,652	143,332	77,579	2.75
2019	112,796	31,926	144,722	81,608	2.87
2020	113,923	32,203	146,126	85,847	2.99
2021	114,759	32,689	147,447	90,281	3.12
2022	115,601	33,182	148,782	94,945	3.26
2023	116,449	33,682	150,131	99,850	3.40
2024	117,303	34,190	151,493	105,008	3.55
2025	118,164	34,706	152,869	110,432	3.70
2026	119,030	35,229	154,260	116,137	3.87
2027	119,904	35,760	155,664	122,136	4.04
2028	120,783	36,300	157,083	128,445	4.21
2029	121,669	36,847	158,517	135,081	4.40
2030	122,562	37,403	159,965	142,059	4.59
Cumulative Revenue				\$1,637,594	

(1) Ramp-up adjustment factors are applied to transactions and revenue for the first two years of operation. Adjustment factors for 2014 was 70% and 2015 was 90%.

(2) For the development of annual toll revenue, a nominal amount equal to 2 percent of average weekday toll revenue was added for each weekend day.

Note: All toll revenue is calculated in current dollars.

Table 11
Per-Mile Toll Rates and Ingress / Egress Surcharges
Phase 3 - Traffic Optimization
All Toll Rates are Shown in Current Dollars

2020 Northbound - Minimum Toll \$0.75							2020 Southbound - Minimum Toll \$0.75						
Per Mile Toll Rate (\$)							Per Mile Toll Rate (\$)						
By Toll Zone							By Toll Zone						
Time Period	A	B	C	D	E	F	Time Period	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05	AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05	AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.10	0.70	0.40	0.05	0.05	0.05	AM2	0.25	0.65	0.35	0.20	0.25	0.30
AM3	0.05	0.45	0.15	0.05	0.05	0.05	AM3	0.20	0.35	0.15	0.05	0.25	0.25
Mid	0.05	0.05	0.05	0.05	0.05	0.05	Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.20	0.75	0.10	0.35	0.25	0.10	PM1	0.05	0.05	0.05	0.25	0.95	0.20
PM2	0.25	0.90	0.20	0.45	0.70	0.20	PM2	0.10	0.10	0.05	0.40	1.35	0.25
PM3	0.25	0.85	0.20	0.40	0.65	0.20	PM3	0.20	0.10	0.05	0.40	1.30	0.20
PM4	0.05	0.05	0.05	0.25	0.40	0.15	PM4	0.05	0.05	0.05	0.35	1.25	0.20

2030 Northbound - Minimum Toll \$1.00							2030 Southbound - Minimum Toll \$1.00						
Per Mile Toll Rate (\$)							Per Mile Toll Rate (\$)						
By Toll Zone							By Toll Zone						
Time Period	A	B	C	D	E	F	Time Period	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05	AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05	AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.40	1.20	0.60	0.05	0.05	0.05	AM2	0.25	0.75	0.45	0.20	0.70	0.60
AM3	0.15	0.85	0.40	0.05	0.05	0.05	AM3	0.20	0.60	0.40	0.20	0.60	0.55
Mid	0.10	0.05	0.10	0.10	0.10	0.05	Mid	0.05	0.05	0.10	0.10	0.10	0.30
PM1	0.45	1.00	0.20	0.40	0.50	0.10	PM1	0.05	0.05	0.05	0.35	1.60	0.40
PM2	0.80	1.15	0.20	0.65	0.85	0.20	PM2	0.10	0.20	0.25	0.50	1.85	0.85
PM3	0.85	1.25	0.25	0.65	0.85	0.25	PM3	0.30	0.20	0.20	0.45	1.85	0.60
PM4	0.40	0.80	0.15	0.45	0.70	0.20	PM4	0.10	0.10	0.15	0.35	1.60	0.60

Note (1)

Egress 18 is the northbound exit ramp from the express toll lanes between NE 128th Street and NE 160 Street.
Egress 19 is the northbound exit ramp from the express toll lanes between NE 160 Street and SR 522.
Ingress 32 is the southbound entry ramp to the express toll lanes at SR 522.
Ingress 42 is the southbound entry ramp to the express toll lanes from NE 6th Street.

NOTE: The time periods are defined as:

AM0 = 5:00 - 5:30 AM
AM1 = 5:30 - 6:30 AM
AM2 = 6:30 - 8:30 AM
AM3 = 8:30 - 9:30 AM
MD1 = 9:30 - 14:30 PM
PM1 = 14:30 - 15:30 PM
PM2 = 15:30 - 17:30 PM
PM3 = 17:30 - 18:30 PM
PM4 = 18:30 - 19:00 PM

Table 12
2020 Estimated Traffic and Gross Toll Revenue
Phase 3 - Traffic Optimization
All Toll Revenues in Current Dollars

Period	Northbound Direction			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Weekday Traffic					
	Toll Free	Tolled	Total			
AM Shoulder	1,606	5,725	7,331	\$1.65	\$9,437	\$2,381,000
AM Peak	2,314	8,423	10,737	3.09	26,010	6,562,300
Midday	4,672	19,369	24,041	0.90	17,396	4,389,000
PM Shoulder	2,247	8,533	10,780	3.13	26,670	6,728,800
PM Peak	5,364	16,874	22,238	5.41	91,273	23,028,200
Total	16,203	58,924	75,127	\$2.90	\$170,786	\$43,089,300

Period	Southbound Direction			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Weekday Traffic					
	Toll Free	Tolled	Total			
AM Shoulder	2,273	8,346	10,619	\$2.33	\$19,417	\$4,898,900
AM Peak	3,220	10,430	13,650	4.20	43,847	11,062,600
Midday	4,891	17,079	21,970	0.88	15,107	3,811,500
PM Shoulder	1,944	7,308	9,252	3.54	25,901	6,534,800
PM Peak	4,631	17,117	21,748	4.02	68,882	17,378,900
Total	16,959	60,280	77,239	\$2.87	\$173,154	\$43,686,700

Period	Both Directions			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Weekday Traffic					
	Toll Free	Tolled	Total			
AM Shoulder	3,879	14,071	17,950	\$2.05	\$28,854	\$7,279,900
AM Peak	5,534	18,853	24,387	3.71	69,857	17,624,900
Midday	9,563	36,448	46,011	0.89	32,503	8,200,500
PM Shoulder	4,191	15,841	20,032	3.32	52,571	13,263,700
PM Peak	9,995	33,991	43,986	4.71	160,155	40,407,100
Total	33,162	119,204	152,366	\$2.89	\$343,940	\$86,776,100

Table 13
2030 Estimated Traffic and Gross Toll Revenue
Phase 3 - Traffic Optimization
All Toll Revenues in Current Dollars

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	1,900	6,632			
AM Peak	2,593	9,529	12,122	4.87	46,369	11,698,900
Midday	5,771	23,126	28,897	1.31	30,270	7,637,100
PM Shoulder	2,341	8,665	11,006	5.39	46,721	11,787,700
PM Peak	5,949	16,208	22,157	8.51	137,916	34,796,200
Total	18,554	64,160	82,714	\$4.36	\$279,506	\$70,519,300

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	2,684	8,924			
AM Peak	3,282	10,187	13,469	6.85	69,735	17,594,100
Midday	6,173	20,961	27,134	1.62	33,920	8,558,000
PM Shoulder	2,091	8,042	10,133	5.12	41,215	10,398,500
PM Peak	5,551	16,664	22,215	6.42	106,955	26,984,700
Total	19,781	64,778	84,559	\$4.45	\$288,281	\$72,733,100

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	4,584	15,556			
AM Peak	5,875	19,716	25,591	5.89	116,104	29,293,000
Midday	11,944	44,087	56,031	1.46	64,190	16,195,100
PM Shoulder	4,432	16,707	21,139	5.26	87,936	22,186,300
PM Peak	11,500	32,872	44,372	7.45	244,871	61,781,000
Total	38,335	128,938	167,273	\$4.40	\$567,787	\$143,252,700



Table 14
Annual Traffic and Toll Revenue
Phase 3 - Traffic Optimization

Year	Average Weekday Trips			Annual Toll Revenue (1) (000)	Average Toll
	Toll Trips	Toll-Free Trips	Total Trips		
2014	--	--	--	--	--
2015	--	--	--	--	--
2016	--	--	--	--	--
2017	--	--	--	--	--
2018	--	--	--	--	--
2019	--	--	--	--	--
2020	119,204	33,162	152,366	86,776	2.89
2021	120,143	33,646	153,790	91,237	3.01
2022	121,090	34,137	155,228	95,927	3.14
2023	122,044	34,636	156,680	100,858	3.28
2024	123,006	35,142	158,148	106,043	3.42
2025	123,976	35,655	159,630	111,494	3.56
2026	124,952	36,175	161,128	117,225	3.72
2027	125,937	36,704	162,641	123,251	3.88
2028	126,930	37,240	164,169	129,587	4.05
2029	127,930	37,783	165,713	136,249	4.22
2030	128,938	38,335	167,273	143,253	4.40
Cumulative Revenue				\$1,241,900	

(1) For the development of annual toll revenue, a nominal amount equal to 2 percent of average weekday toll revenue was added for each weekend day.

Note: All toll revenue is calculated in current dollars.

Table 15
2014 Estimated Traffic and Gross Toll Revenue
Phase 1 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll		Total			
	Free	Tolled				
AM Shoulder	832	578	1,410	\$1.08	\$622	\$156,900
AM Peak	1,138	1,129	2,267	1.54	1,744	440,000
Midday	3,008	3,633	6,641	1.55	5,615	1,416,700
PM Shoulder	1,623	3,694	5,317	2.69	9,921	2,503,100
PM Peak	3,953	8,007	11,960	4.30	34,439	8,689,000
Evening	698	753	1,451	1.79	1,347	339,800
Total	11,252	17,794	29,046	\$3.02	\$53,688	\$13,545,500

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll		Total			
	Free	Tolled				
AM Shoulder	1,744	4,243	5,987	\$2.46	\$10,445	\$2,635,300
AM Peak	2,501	4,729	7,230	6.33	29,913	7,547,000
Midday	2,974	3,659	6,633	1.31	4,777	1,205,200
PM Shoulder	921	2,124	3,045	1.52	3,225	813,700
PM Peak	2,201	7,133	9,334	1.58	11,274	2,844,400
Evening	345	212	557	1.04	221	55,800
Total	10,686	22,100	32,786	\$2.71	\$59,855	\$15,101,400

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll		Total			
	Free	Tolled				
AM Shoulder	2,576	4,821	7,397	\$2.30	\$11,067	\$2,792,200
AM Peak	3,639	5,858	9,497	5.40	31,657	7,987,100
Midday	5,982	7,292	13,274	1.43	10,392	2,621,900
PM Shoulder	2,544	5,818	8,362	2.26	13,146	3,316,700
PM Peak	6,154	15,140	21,294	3.02	45,713	11,533,400
Evening	1,043	965	2,008	1.62	1,568	395,600
Total	21,938	39,894	61,832	\$2.85	\$113,543	\$28,646,900

Note: The 2014 traffic and toll revenue in this table does not include the effects of ramp-up in demand.

Table 16
2020 Estimated Traffic and Gross Toll Revenue
Phase 1 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	875	658	1,533	\$1.64	\$1,081	\$272,700
AM Peak	1,217	1,724	2,941	1.71	2,949	744,000
Midday	3,272	5,811	9,083	1.55	9,029	2,278,000
PM Shoulder	1,709	4,177	5,886	3.41	14,245	3,594,000
PM Peak	4,144	7,791	11,935	6.09	47,415	11,962,800
Evening	784	1,260	2,044	2.34	2,949	744,000
Total	12,001	21,421	33,422	\$3.63	\$77,668	\$19,595,500

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,842	4,889	6,731	\$3.30	\$16,131	\$4,069,900
AM Peak	2,494	4,642	7,136	7.27	33,731	8,510,300
Midday	3,256	5,402	8,658	1.47	7,922	1,998,700
PM Shoulder	997	2,543	3,540	2.27	5,784	1,459,300
PM Peak	2,357	6,740	9,097	3.44	23,193	5,851,600
Evening	414	262	676	1.32	346	87,300
Total	11,360	24,478	35,838	\$3.56	\$87,107	\$21,977,100

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,717	5,547	8,264	\$3.10	\$17,212	\$4,342,600
AM Peak	3,711	6,366	10,077	5.76	36,680	9,254,400
Midday	6,528	11,213	17,741	1.51	16,951	4,276,700
PM Shoulder	2,706	6,720	9,426	2.98	20,029	5,053,300
PM Peak	6,501	14,531	21,032	4.86	70,608	17,814,400
Evening	1,198	1,522	2,720	2.16	3,295	831,300
Total	23,361	45,899	69,260	\$3.59	\$164,775	\$41,572,700

Table 17
2030 Estimated Traffic and Gross Toll Revenue
Phase 1 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,071	1,134	2,205	\$1.94	\$2,195	\$553,800
AM Peak	1,312	2,721	4,033	1.98	5,376	1,356,400
Midday	3,487	8,697	12,184	1.65	14,349	3,620,300
PM Shoulder	1,794	3,994	5,788	5.66	22,623	5,707,800
PM Peak	4,237	7,841	12,078	8.30	65,119	16,429,500
Evening	847	1,830	2,677	3.83	7,002	1,766,600
Total	12,748	26,217	38,965	\$4.45	\$116,664	\$29,434,400

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,113	4,968	7,081	\$5.21	\$25,879	\$6,529,300
AM Peak	2,495	4,769	7,264	9.87	47,087	11,880,100
Midday	3,488	9,274	12,762	1.65	15,302	3,860,700
PM Shoulder	1,113	3,282	4,395	3.13	10,289	2,595,900
PM Peak	2,552	6,765	9,317	5.90	39,916	10,070,800
Evening	490	408	898	2.29	936	236,200
Total	12,251	29,466	41,717	\$4.73	\$139,409	\$35,173,000

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	3,184	6,102	9,286	\$4.60	\$28,074	\$7,083,100
AM Peak	3,807	7,490	11,297	7.00	52,463	13,236,400
Midday	6,975	17,971	24,946	1.65	29,651	7,480,900
PM Shoulder	2,907	7,276	10,183	4.52	32,912	8,303,700
PM Peak	6,789	14,606	21,395	7.19	105,035	26,500,300
Evening	1,337	2,238	3,575	3.55	7,938	2,002,800
Total	24,999	55,683	80,682	\$4.60	\$256,073	\$64,607,200



Table 18
Annual Traffic and Revenue Estimates
Phase 1 - Revenue Optimization

Year	Traffic Optimization		Revenue Optimization		Percent Difference	
	Total Trips	Annual Toll Revenue(2) (000)	Total Trips	Annual Toll Revenue (2) (000)	Total Trips	Annual Toll Revenue
2014 (1)	50,551	\$16,388	43,282	\$20,053	-14%	22%
2015 (1)	65,841	22,465	56,706	27,433	-14%	22%
2016	74,110	26,614	64,205	32,433	-13%	22%
2017	75,077	28,376	65,430	34,510	-13%	22%
2018	76,056	30,254	66,680	36,720	-12%	21%
2019	77,048	32,257	67,956	39,071	-12%	21%
2020	78,054	34,393	69,260	41,573	-11%	21%
2021	78,926	36,116	70,314	43,447	-11%	20%
2022	79,808	37,926	71,387	45,405	-11%	20%
2023	80,701	39,826	72,479	47,452	-10%	19%
2024	81,604	41,821	73,590	49,590	-10%	19%
2025	82,518	43,917	74,721	51,826	-9%	18%
2026	83,443	46,117	75,872	54,162	-9%	17%
2027	84,379	48,428	77,043	56,603	-9%	17%
2028	85,326	50,854	78,235	59,154	-8%	16%
2029	86,284	53,402	79,448	61,821	-8%	16%
2030	87,253	56,077	80,682	64,607	-8%	15%
Cumulative Revenue		\$645,232		\$765,858		19%

(1) Ramp-up adjustment factors are applied to transactions and revenue for the first two years of operation. Adjustment factors for 2014 was 70% and 2015 was 90%.

(2) For the development of annual toll revenue, a nominal amount equal to 2 percent of average weekday toll revenue was added for each weekend day.

Note: All toll revenue is calculated in current dollars.

Table 19
2014 Estimated Traffic and Gross Toll Revenue
Phase 2 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll					
	Free	Tolled	Total			
AM Shoulder	1,512	3,943	5,455	\$2.38	\$9,397	\$2,370,900
AM Peak	2,280	5,703	7,983	3.95	22,547	5,688,600
Midday	4,176	12,308	16,484	1.85	22,713	5,730,500
PM Shoulder	2,073	6,271	8,344	3.68	23,074	5,821,600
PM Peak	4,813	13,160	17,973	5.45	71,668	18,081,800
Evening	878	2,688	3,566	1.80	4,848	1,223,200
Total	15,732	44,073	59,805	\$3.50	\$154,247	\$38,916,600

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll					
	Free	Tolled	Total			
AM Shoulder	2,105	5,874	7,979	\$3.13	\$18,361	\$4,632,500
AM Peak	3,070	8,128	11,198	5.31	43,192	10,897,300
Midday	4,594	12,613	17,207	1.72	21,749	5,487,300
PM Shoulder	1,868	5,285	7,153	4.47	23,632	5,962,400
PM Peak	4,495	12,259	16,754	4.95	60,630	15,296,900
Evening	872	2,200	3,072	4.69	10,320	2,603,700
Total	17,004	46,359	63,363	\$3.84	\$177,884	\$44,880,100

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll					
	Free	Tolled	Total			
AM Shoulder	3,617	9,817	13,434	\$2.83	\$27,758	\$7,003,300
AM Peak	5,350	13,831	19,181	4.75	65,739	16,585,900
Midday	8,770	24,921	33,691	1.78	44,462	11,217,800
PM Shoulder	3,941	11,556	15,497	4.04	46,706	11,783,900
PM Peak	9,308	25,419	34,727	5.20	132,298	33,378,800
Evening	1,750	4,888	6,638	3.10	15,168	3,826,900
Total	32,736	90,432	123,168	\$3.67	\$332,131	\$83,796,600

Note: The 2014 traffic and toll revenue in this table does not include the effects of ramp-up in demand.



Table 20
2020 Estimated Traffic and Gross Toll Revenue
Phase 2 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,541	4,380	5,921	\$2.98	\$13,047	\$3,291,800
AM Peak	2,299	6,484	8,783	4.67	30,302	7,645,200
Midday	4,577	14,792	19,369	1.94	28,671	7,233,700
PM Shoulder	2,204	6,696	8,900	4.87	32,595	8,223,700
PM Peak	5,096	13,448	18,544	7.29	97,977	24,719,600
Evening	975	3,171	4,146	3.06	9,691	2,445,000
Total	16,692	48,971	65,663	\$4.33	\$212,283	\$53,559,000

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,293	6,657	8,950	\$3.82	\$25,434	\$6,417,000
AM Peak	3,149	8,361	11,510	6.33	52,885	13,342,900
Midday	4,980	13,943	18,923	1.80	25,091	6,330,500
PM Shoulder	1,946	5,933	7,879	5.01	29,741	7,503,700
PM Peak	4,612	13,616	18,228	5.82	79,208	19,984,200
Evening	920	2,496	3,416	5.82	14,521	3,663,600
Total	17,900	51,006	68,906	\$4.45	\$226,880	\$57,241,900

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	3,834	11,037	14,871	\$3.49	\$38,481	\$9,708,800
AM Peak	5,448	14,845	20,293	5.60	83,187	20,988,100
Midday	9,557	28,735	38,292	1.87	53,762	13,564,200
PM Shoulder	4,150	12,629	16,779	4.94	62,336	15,727,400
PM Peak	9,708	27,064	36,772	6.55	177,185	44,703,800
Evening	1,895	5,667	7,562	4.27	24,212	6,108,700
Total	34,592	99,977	134,569	\$4.39	\$439,163	\$110,801,000



Table 21
2030 Estimated Traffic and Gross Toll Revenue
Phase 2 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,888	5,213	7,101	\$4.22	\$21,994	\$5,549,100
AM Peak	2,550	6,981	9,531	7.20	50,242	12,676,100
Midday	5,875	17,811	23,686	2.89	51,531	13,001,300
PM Shoulder	2,271	6,914	9,185	7.74	53,515	13,501,800
PM Peak	5,661	13,349	19,010	10.47	139,782	35,267,000
Evening	1,092	3,538	4,630	6.75	23,877	6,024,200
Total	19,337	53,806	73,143	\$6.34	\$340,941	\$86,019,500

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,665	7,454	10,119	\$6.04	\$45,024	\$11,359,600
AM Peak	3,189	8,749	11,938	8.89	77,758	19,618,300
Midday	6,228	16,930	23,158	3.11	52,736	13,305,300
PM Shoulder	2,100	6,894	8,994	6.67	45,960	11,595,700
PM Peak	5,518	13,701	19,219	8.47	116,064	29,282,900
Evening	1,037	3,027	4,064	7.86	23,788	6,001,700
Total	20,737	56,755	77,492	\$6.37	\$361,330	\$91,163,500

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	4,553	12,667	17,220	\$5.29	\$67,018	\$16,908,600
AM Peak	5,739	15,730	21,469	8.14	128,000	32,294,400
Midday	12,103	34,741	46,844	3.00	104,267	26,306,600
PM Shoulder	4,371	13,808	18,179	7.20	99,475	25,097,500
PM Peak	11,179	27,050	38,229	9.46	255,846	64,549,900
Evening	2,129	6,565	8,694	7.26	47,665	12,025,900
Total	40,074	110,561	150,635	\$6.35	\$702,271	\$177,182,900



Table 22
Annual Traffic and Revenue Estimates
Phase 2 - Revenue Optimization

Year	Traffic Optimization		Revenue Optimization		Percent Difference	
	Total Trips	Annual Toll Revenue (2) (000)	Total Trips	Annual Toll Revenue (2) (000)	Total Trips	Annual Toll Revenue
2014 (1)	96,533	\$44,349	86,218	\$58,658	-11%	32%
2015 (1)	125,317	59,982	112,496	79,011	-10%	32%
2016	140,592	70,108	126,851	91,974	-10%	31%
2017	141,955	73,749	128,736	96,357	-9%	31%
2018	143,332	77,579	130,650	100,950	-9%	30%
2019	144,722	81,608	132,594	105,761	-8%	30%
2020	146,126	85,847	134,569	110,801	-8%	29%
2021	147,447	90,281	136,093	116,126	-8%	29%
2022	148,782	94,945	137,634	121,708	-7%	28%
2023	150,131	99,850	139,194	127,558	-7%	28%
2024	151,493	105,008	140,772	133,689	-7%	27%
2025	152,869	110,432	142,368	140,114	-7%	27%
2026	154,260	116,137	143,983	146,849	-7%	26%
2027	155,664	122,136	145,617	153,907	-6%	26%
2028	157,083	128,445	147,270	161,304	-6%	26%
2029	158,517	135,081	148,943	169,057	-6%	25%
2030	159,965	142,059	150,635	177,183	-6%	25%
Cumulative Revenue		\$1,637,594		\$2,091,007		28%

(1) Ramp-up adjustment factors are applied to transactions and revenue for the first two years of operation. Adjustment factors for 2014 was 70% and 2015 was 90%.

(2) For the development of annual toll revenue, a nominal amount equal to 2 percent of average weekday toll revenue was added for each weekend day.

Note: All toll revenue is calculated in current dollars.

Table 23
2020 Estimated Traffic and Gross Toll Revenue
Phase 3 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,614	4,520	6,134	\$2.96	\$13,392	\$3,378,800
AM Peak	2,375	6,754	9,129	4.55	30,745	7,757,000
Midday	4,852	15,646	20,498	2.05	32,043	8,084,400
PM Shoulder	2,325	7,017	9,342	4.86	34,108	8,605,400
	5,412	13,739	19,151	7.25	99,614	25,132,600
PM Peak	1,056	3,318	4,374	3.11	10,334	2,607,300
Total	17,634	50,994	68,628	\$4.32	\$220,236	\$55,565,500

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,332	6,450	8,782	\$4.02	\$25,924	\$6,540,600
AM Peak	3,219	8,611	11,830	6.14	52,834	13,330,000
Midday	5,067	13,641	18,708	1.92	26,176	6,604,200
PM Shoulder	1,984	5,936	7,920	5.16	30,612	7,723,400
	4,633	13,852	18,485	5.68	78,731	19,863,800
PM Peak	920	2,521	3,441	5.82	14,673	3,702,000
Total	18,155	51,011	69,166	\$4.49	\$228,950	\$57,764,000

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	3,946	10,970	14,916	\$3.58	\$39,316	\$9,919,400
AM Peak	5,594	15,365	20,959	5.44	83,579	21,087,000
Midday	9,919	29,287	39,206	1.99	58,219	14,688,700
PM Shoulder	4,309	12,953	17,262	5.00	64,720	16,328,900
	10,045	27,591	37,636	6.46	178,345	44,996,400
PM Peak	1,976	5,839	7,815	4.28	25,007	6,309,300
Total	35,789	102,005	137,794	\$4.40	\$449,186	\$113,329,700



Table 24
2030 Estimated Traffic and Gross Toll Revenue
Phase 3 - Revenue Optimization
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	1,955	5,484	7,439	\$4.18	\$22,931	\$5,785,500
AM Peak	2,590	7,838	10,428	6.33	49,609	12,516,400
Midday	6,111	19,131	25,242	2.85	54,584	13,771,500
PM Shoulder	2,375	7,423	9,798	7.33	54,440	13,735,200
	5,948	13,903	19,851	10.54	146,603	36,987,900
PM Peak	1,192	4,031	5,223	6.46	26,045	6,571,200
Total	20,171	57,810	77,981	\$6.13	\$354,212	\$89,367,700

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	2,692	7,553	10,245	\$5.92	\$44,693	\$11,276,000
AM Peak	3,317	8,858	12,175	8.80	77,970	19,671,800
Midday	6,378	16,707	23,085	3.29	54,924	13,857,300
PM Shoulder	2,134	6,789	8,923	6.85	46,484	11,727,900
	5,634	14,057	19,691	8.31	116,858	29,483,300
PM Peak	1,038	3,095	4,133	7.91	24,471	6,174,000
Total	21,193	57,059	78,252	\$6.40	\$365,400	\$92,190,300

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	4,647	13,037	17,684	\$5.19	\$67,624	\$17,061,500
AM Peak	5,907	16,696	22,603	7.64	127,579	32,188,200
Midday	12,489	35,838	48,327	3.06	109,508	27,628,900
PM Shoulder	4,509	14,212	18,721	7.10	100,924	25,463,100
	11,582	27,960	39,542	9.42	263,461	66,471,200
PM Peak	2,230	7,126	9,356	7.09	50,516	12,745,200
Total	41,364	114,869	156,233	\$6.26	\$719,612	\$181,558,100



Table 25
Annual Traffic and Revenue Estimates
Phase 3 - Revenue Optimization

Year	Traffic Optimization		Revenue Optimization		Percent Difference	
	Total Trips	Annual Toll Revenue (1) (000)	Total Trips	Annual Toll Revenue (1) (000)	Total Trips	Annual Toll Revenue
2014	--	--	--	--	--	--
2015	--	--	--	--	--	--
2016	--	--	--	--	--	--
2017	--	--	--	--	--	--
2018	--	--	--	--	--	--
2019	--	--	--	--	--	--
2020	152,366	86,776	137,794	113,330	-10%	31%
2021	153,790	91,237	139,535	118,798	-9%	30%
2022	155,228	95,927	141,297	124,531	-9%	30%
2023	156,680	100,858	143,083	130,540	-9%	29%
2024	158,148	106,043	144,891	136,840	-8%	29%
2025	159,630	111,494	146,722	143,443	-8%	29%
2026	161,128	117,225	148,576	150,365	-8%	28%
2027	162,641	123,251	150,454	157,621	-7%	28%
2028	164,169	129,587	152,356	165,227	-7%	28%
2029	165,713	136,249	154,282	173,200	-7%	27%
2030	167,273	143,253	156,233	181,558	-7%	27%
Cumulative Revenue		\$1,241,900		\$1,595,454		28%

(1) For the development of annual toll revenue, a nominal amount equal to 2 percent of average weekday toll revenue was added for each weekend day.

Note: All toll revenue is calculated in current dollars.

Table 26
Per-Mile Toll Rates and Ingress / Egress Surcharges
Phase 2 - Traffic Optimization (HOV2+ Free)
All Toll Rates are Shown in Current Dollars

2014 Northbound - Minimum Toll \$0.60						
Time Period	Per Mile Toll Rate (\$) By Toll Zone					
	A	B	C	D	E	F
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.05	0.60	0.45	0.05	0.05	0.05
AM3	0.05	0.20	0.20	0.05	0.05	Egress 8 = 0.50
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.55	0.50	0.15	0.25	0.30	Egress 18 = 2.00
PM2	0.30	0.75	0.20	0.40	0.90	Egress 18 = 4.00
PM3	0.20	0.70	0.20	0.20	0.80	Egress 18 = 4.00
PM4	0.05	0.05	0.05	0.05	0.20	Egress 18 = 2.50

2014 Southbound - Minimum Toll \$0.60						
Time Period	Per Mile Toll Rate (\$) By Toll Zone					
	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	1.80	1.10	0.15	0.20	0.25	0.10
AM3	0.55	0.25	0.15	0.05	0.15	0.10
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.05	0.05	0.05	0.40	1.00	0.15
PM2	0.05	0.05	0.05	0.55	1.60	0.60
PM3	0.40	0.05	0.05	0.45	1.40	0.45
PM4	0.05	0.05	0.05	0.30	1.30	0.30

2020 Northbound - Minimum Toll \$0.75						
Time Period	Per Mile Toll Rate (\$) By Toll Zone					
	A	B	C	D	E	F
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.20	0.90	0.60	0.05	0.05	0.05
AM3	0.10	0.80	0.20	0.05	0.05	0.05
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.55	0.85	0.20	0.40	0.40	0.35
PM2	0.60	1.10	0.30	0.50	1.25	1.60
PM3	0.45	0.95	0.30	0.50	0.85	1.00
PM4	0.05	0.05	0.05	0.30	0.45	0.50

2020 Northbound - Minimum Toll \$1.00						
Time Period	Per Mile Toll Rate (\$) By Toll Zone					
	A	B	C	D	E	F
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.05	0.05	0.05	0.05	0.05	0.05
AM2	0.50	1.40	0.80	0.05	0.05	0.30
AM3	0.15	0.95	0.40	0.05	0.05	0.05
Mid	0.10	0.05	0.15	0.15	0.10	0.10
PM1	0.75	1.10	0.30	0.50	0.70	0.45
PM2	1.25	1.30	0.55	0.75	1.30	1.60
PM3	1.30	1.35	0.65	0.75	1.05	1.80
PM4	0.50	0.80	0.40	0.50	0.90	1.10

2020 Southbound - Minimum Toll \$0.75						
Time Period	Per Mile Toll Rate (\$) By Toll Zone					
	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.15	0.05	0.05	0.05	0.05	0.05
AM2	2.50	1.15	0.40	0.20	0.25	0.35
AM3	1.00	0.70	0.20	0.20	0.25	0.30
Mid	0.05	0.05	0.05	0.05	0.05	0.05
PM1	0.05	0.05	0.05	0.55	1.40	0.30
PM2	0.20	0.10	0.05	0.55	2.20	0.60
PM3	1.10	0.10	0.05	0.55	2.20	0.60
PM4	0.20	0.05	0.05	0.40	1.75	0.30

2030 Northbound - Minimum Toll \$1.00						
Time Period	Per Mile Toll Rate (\$) By Toll Zone					
	A	B	C	D	E	F
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.35	0.05	0.05	0.05	0.05	0.05
AM2	2.70	1.70	0.45	0.20	0.70	0.90
AM3	1.80	1.05	0.40	0.20	0.65	0.75
Mid	0.05	0.05	0.10	0.10	0.10	0.30
PM1	0.05	0.05	0.05	0.55	2.40	0.45
PM2	0.25	0.20	0.25	0.85	3.75	1.60
PM3	2.60	0.30	0.20	0.70	3.30	0.95
PM4	0.50	0.10	0.15	0.40	2.25	0.70

2030 Southbound - Minimum Toll \$1.00						
Time Period	Per Mile Toll Rate (\$) By Toll Zone					
	F	E	D	C	B	A
AM0	0.05	0.05	0.05	0.05	0.05	0.05
AM1	0.35	0.05	0.05	0.05	0.05	0.05
AM2	2.70	1.70	0.45	0.20	0.70	0.90
AM3	1.80	1.05	0.40	0.20	0.65	0.75
Mid	0.05	0.05	0.10	0.10	0.10	0.30
PM1	0.05	0.05	0.05	0.55	2.40	0.45
PM2	0.25	0.20	0.25	0.85	3.75	1.60
PM3	2.60	0.30	0.20	0.70	3.30	0.95
PM4	0.50	0.10	0.15	0.40	2.25	0.70

NOTE: The time periods are defined as:
 AM0 = 5:00 - 5:30 AM
 AM1 = 5:30 - 6:30 AM
 AM2 = 6:30 - 8:30 AM
 AM3 = 8:30 - 9:30 AM
 MD1 = 9:30 - 14:30 PM
 PM1 = 14:30 - 15:30 PM
 PM2 = 15:30 - 17:30 PM
 PM3 = 17:30 - 18:30 PM
 PM4 = 18:30 - 19:00 PM
 PM5 = 19:00 - 19:30 PM
 PM6 = 19:30 - 20:00 PM

Surcharge 9999: HOV2+ free traffic equals or exceeds available capacity, no additional capacity for SOVs available
 Egress 18 is the northbound exit ramp from the express toll lanes between NE 128th Street and NE 160 Street.
 Ingress 29 is the southbound entry ramp to the express toll lanes between SR 522 and NE 160 Street.
 Ingress 38 is the southbound entry ramp to the express toll lanes from NE 6th Street.

Table 27
2014 Estimated Traffic and Gross Toll Revenue
Phase 2 - Traffic Optimization (HOV2+ Free)
All Toll Revenues in Current Dollars

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	4,369	3,474			
AM Peak	6,649	4,337	10,986	2.98	12,926	3,261,200
Midday	13,518	9,499	23,017	0.74	7,030	1,773,700
PM Shoulder	6,759	3,576	10,335	3.12	11,158	2,815,200
PM Peak	15,257	7,126	22,383	5.56	39,651	10,003,900
Total	46,552	28,012	74,564	\$2.69	\$75,393	\$19,021,600

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	6,576	4,759			
AM Peak	9,502	5,032	14,534	3.38	17,026	4,295,700
Midday	14,785	9,670	24,455	0.71	6,909	1,743,100
PM Shoulder	6,288	3,157	9,445	4.15	13,106	3,306,600
PM Peak	13,912	6,779	20,691	4.88	33,081	8,346,300
Total	51,063	29,397	80,460	\$2.67	\$78,552	\$19,818,600

Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
	AM Shoulder	10,945	8,233			
AM Peak	16,151	9,369	25,520	3.20	29,952	7,556,900
Midday	28,303	19,169	47,472	0.73	13,939	3,516,800
PM Shoulder	13,047	6,733	19,780	3.60	24,264	6,121,800
PM Peak	29,169	13,905	43,074	5.23	72,732	18,350,300
Total	97,615	57,409	155,024	\$2.68	\$153,945	\$38,840,300

Note: The 2014 traffic and toll revenue in this table does not include the effects of ramp-up in demand.



Table 28
2020 Estimated Traffic and Gross Toll Revenue
Phase 2 - Traffic Optimization (HOV2+ Free)
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	4,661	3,493	8,154	\$2.33	\$8,124	\$2,049,700
AM Peak	7,196	4,203	11,399	4.00	16,803	4,239,400
Midday	14,856	11,108	25,964	0.87	9,688	2,444,300
PM Shoulder	7,163	3,500	10,663	4.42	15,467	3,902,300
PM Peak	16,892	5,830	22,722	7.16	41,746	10,532,500
Total	50,768	28,134	78,902	\$3.26	\$91,828	\$23,168,200

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	7,363	4,347	11,710	\$3.04	\$13,221	\$3,335,700
AM Peak	10,425	4,515	14,940	3.75	16,932	4,271,900
Midday	16,590	10,357	26,947	0.85	8,783	2,216,000
PM Shoulder	6,680	3,368	10,048	4.77	16,066	4,053,500
PM Peak	14,982	7,000	21,982	5.69	39,848	10,053,700
Total	56,040	29,587	85,627	\$3.21	\$94,850	\$23,930,800

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	12,024	7,840	19,864	\$2.72	\$21,345	\$5,385,300
AM Peak	17,621	8,718	26,339	3.87	33,735	8,511,300
Midday	31,446	21,465	52,911	0.86	18,471	4,660,200
PM Shoulder	13,843	6,868	20,711	4.59	31,533	7,955,800
PM Peak	31,874	12,830	44,704	6.36	81,594	20,586,200
Total	106,808	57,721	164,529	\$3.23	\$186,678	\$47,098,800



Table 29
2030 Estimated Traffic and Gross Toll Revenue
Phase 2 - Traffic Optimization (HOV2+ Free)
All Toll Revenues in Current Dollars

Northbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	5,576	4,074	9,650	\$2.96	\$12,052	\$3,040,700
AM Peak	8,125	4,019	12,144	6.92	27,806	7,015,500
Midday	17,507	12,782	30,289	1.49	19,023	4,799,500
PM Shoulder	7,968	3,210	11,178	6.87	22,053	5,564,000
PM Peak	18,535	5,275	23,810	10.76	56,777	14,324,800
Total	57,711	29,360	87,071	\$4.69	\$137,711	\$34,744,500

Southbound Direction						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	8,627	4,518	13,145	\$5.16	\$23,310	\$5,881,100
AM Peak	10,939	3,982	14,921	7.39	29,432	7,425,700
Midday	19,578	12,034	31,612	1.66	20,012	5,049,000
PM Shoulder	7,735	3,621	11,356	6.46	23,376	5,897,800
PM Peak	17,977	5,761	23,738	9.41	54,217	13,678,900
Total	64,856	29,916	94,772	\$5.03	\$150,347	\$37,932,500

Both Directions						
Period	Weekday Traffic			Average Toll Rate	Weekday Revenue	Estimated Annual Toll Revenue
	Toll Free	Tolled	Total			
AM Shoulder	14,203	8,592	22,795	\$4.12	\$35,362	\$8,921,800
AM Peak	19,064	8,001	27,065	7.15	57,238	14,441,100
Midday	37,085	24,816	61,901	1.57	39,035	9,848,500
PM Shoulder	15,703	6,831	22,534	6.65	45,429	11,461,700
PM Peak	36,512	11,036	47,548	10.06	110,994	28,003,800
Total	122,567	59,276	181,843	\$4.86	\$288,058	\$72,676,900



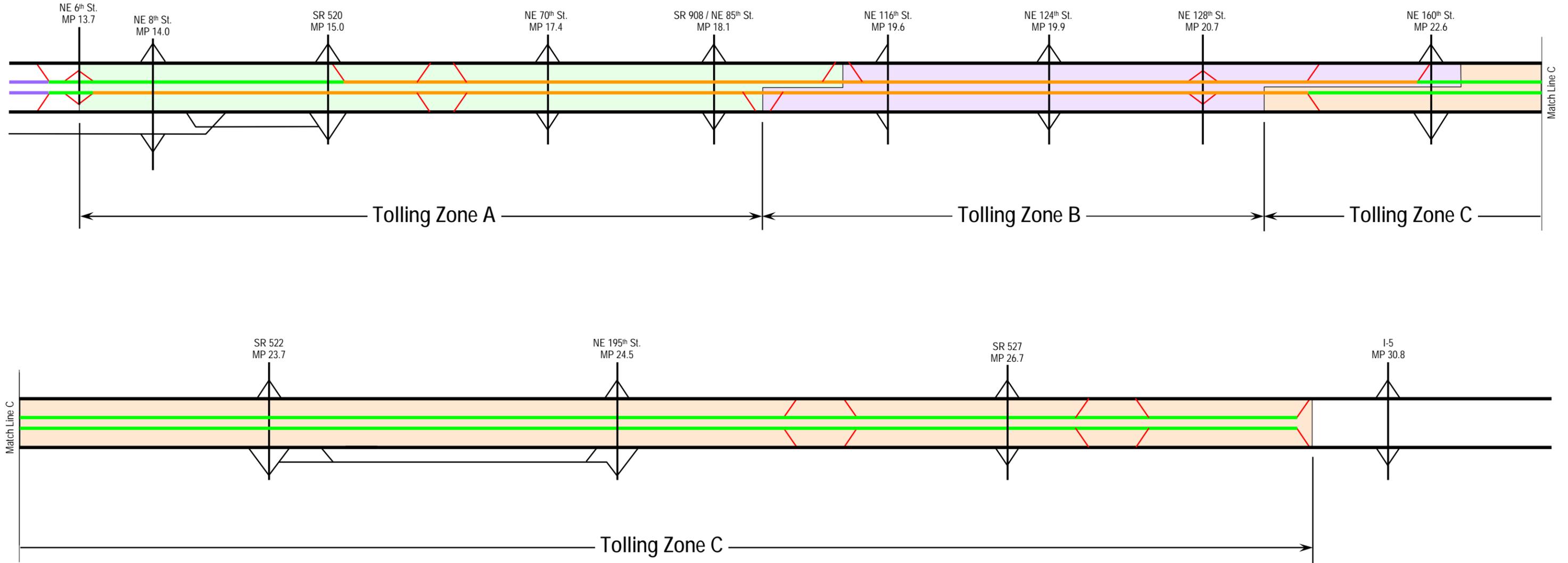
Table 30
Annual Traffic and Toll Revenue
Phase 2 - Traffic Optimization (HOV2+ Free)

Year	Average Weekday Trips			Annual Toll Revenue (2) (000)	Average Toll
	Toll Trips	Toll-Free Trips	Total Trips		
2014 (1)	40,186	68,331	108,517	\$27,188	\$2.68
2015 (1)	51,715	89,181	140,896	36,098	2.77
2016	57,513	100,588	158,101	41,418	2.85
2017	57,565	102,108	159,673	42,771	2.94
2018	57,617	103,651	161,268	44,167	3.04
2019	57,669	105,218	162,887	45,610	3.13
2020	57,721	106,808	164,529	47,099	3.23
2021	57,875	108,288	166,163	49,187	3.37
2022	58,029	109,789	167,817	51,367	3.51
2023	58,183	111,310	169,493	53,645	3.65
2024	58,338	112,853	171,191	56,023	3.81
2025	58,493	114,417	172,910	58,506	3.96
2026	58,649	116,002	174,651	61,100	4.13
2027	58,805	117,610	176,415	63,809	4.30
2028	58,962	119,239	178,201	66,638	4.48
2029	59,119	120,892	180,010	69,592	4.67
2030	59,276	122,567	181,843	72,677	4.86
Cumulative Revenue				\$886,895	

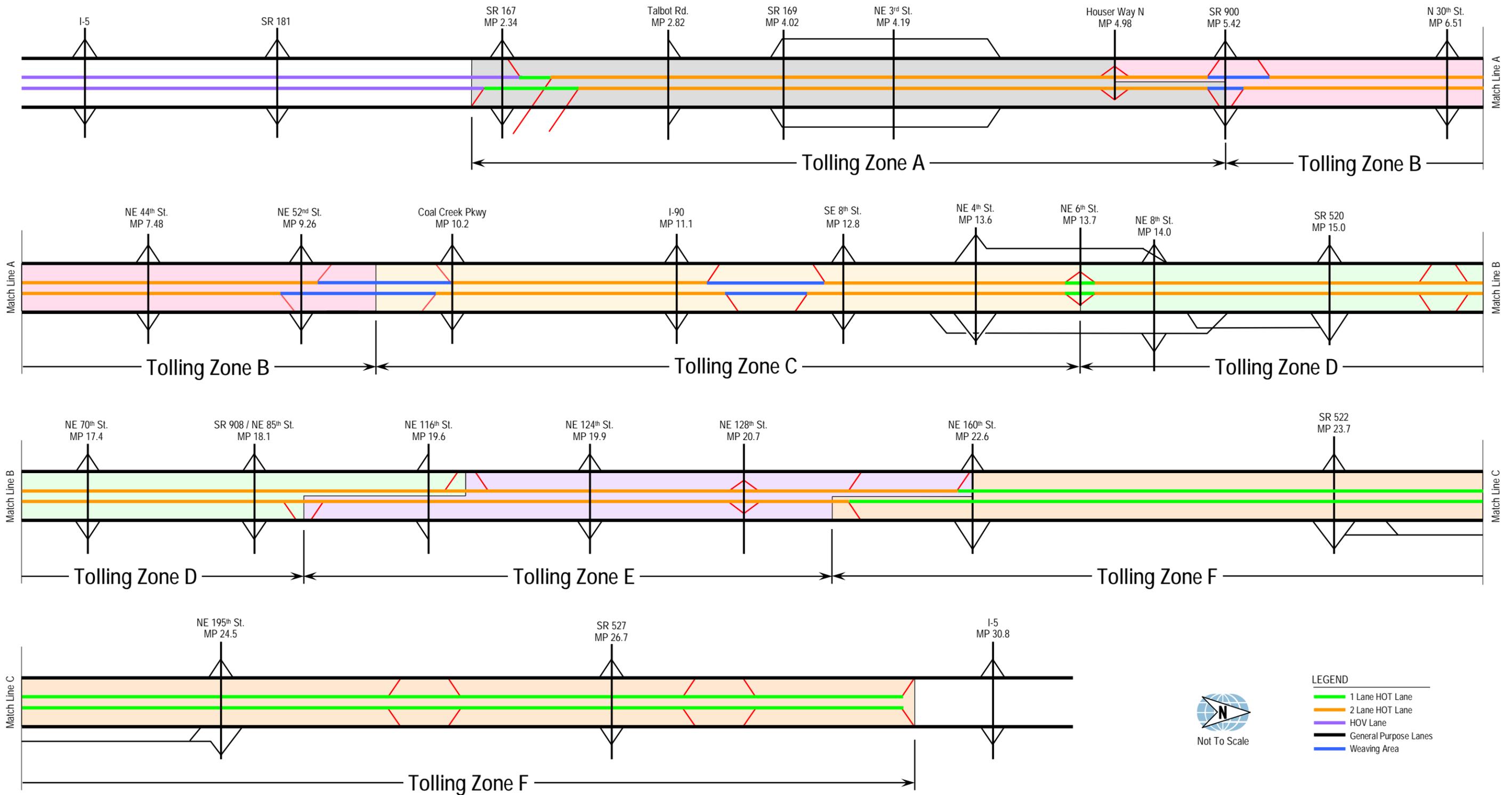
(1) Ramp-up adjustment factors are applied to transactions and revenue for the first two years of operation. Adjustment factors for 2014 was 70% and 2015 was 90%.

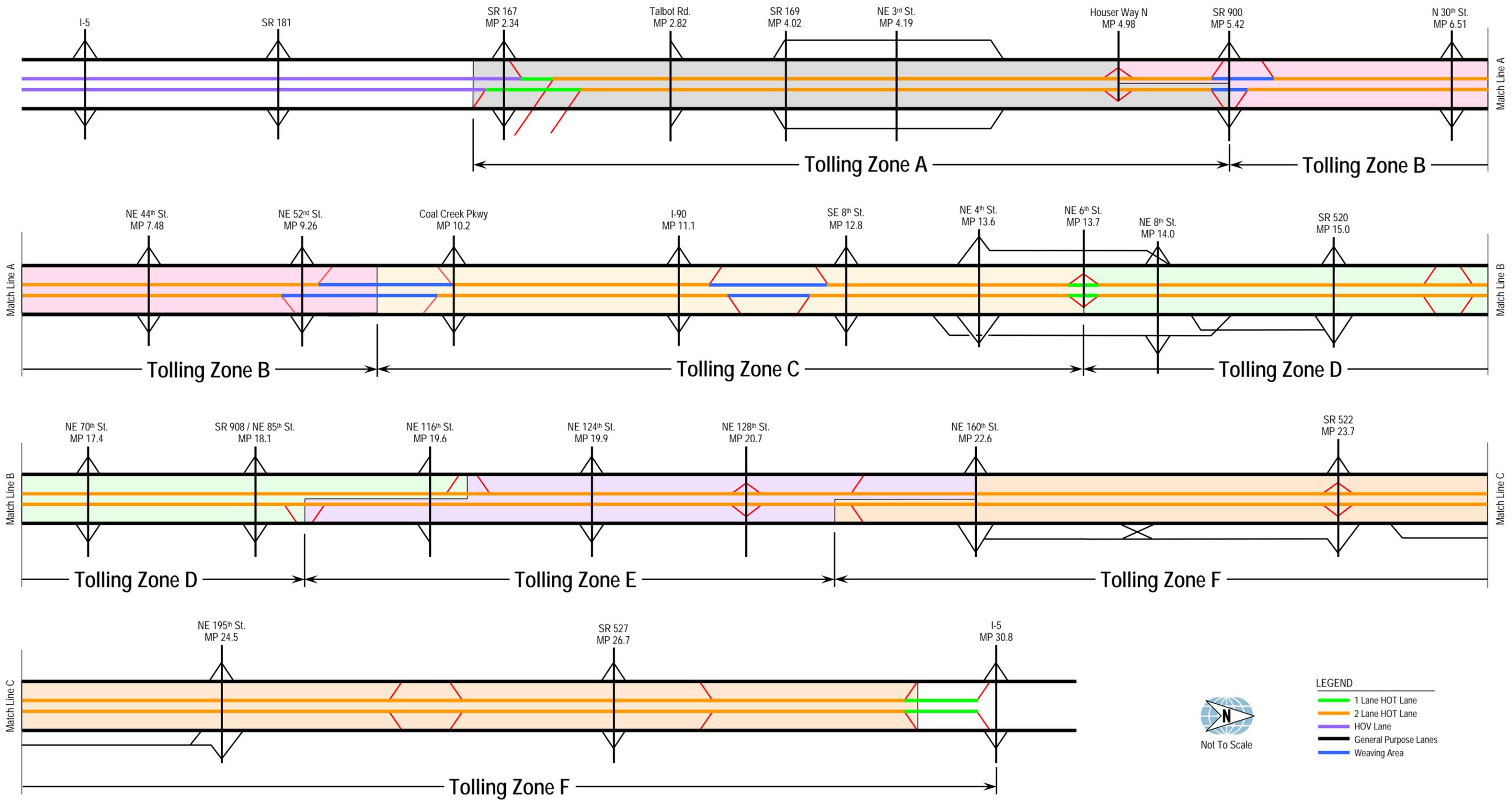
(2) For the development of annual toll revenue, a nominal amount equal to 2 percent of average weekday toll revenue was added for each weekend day.

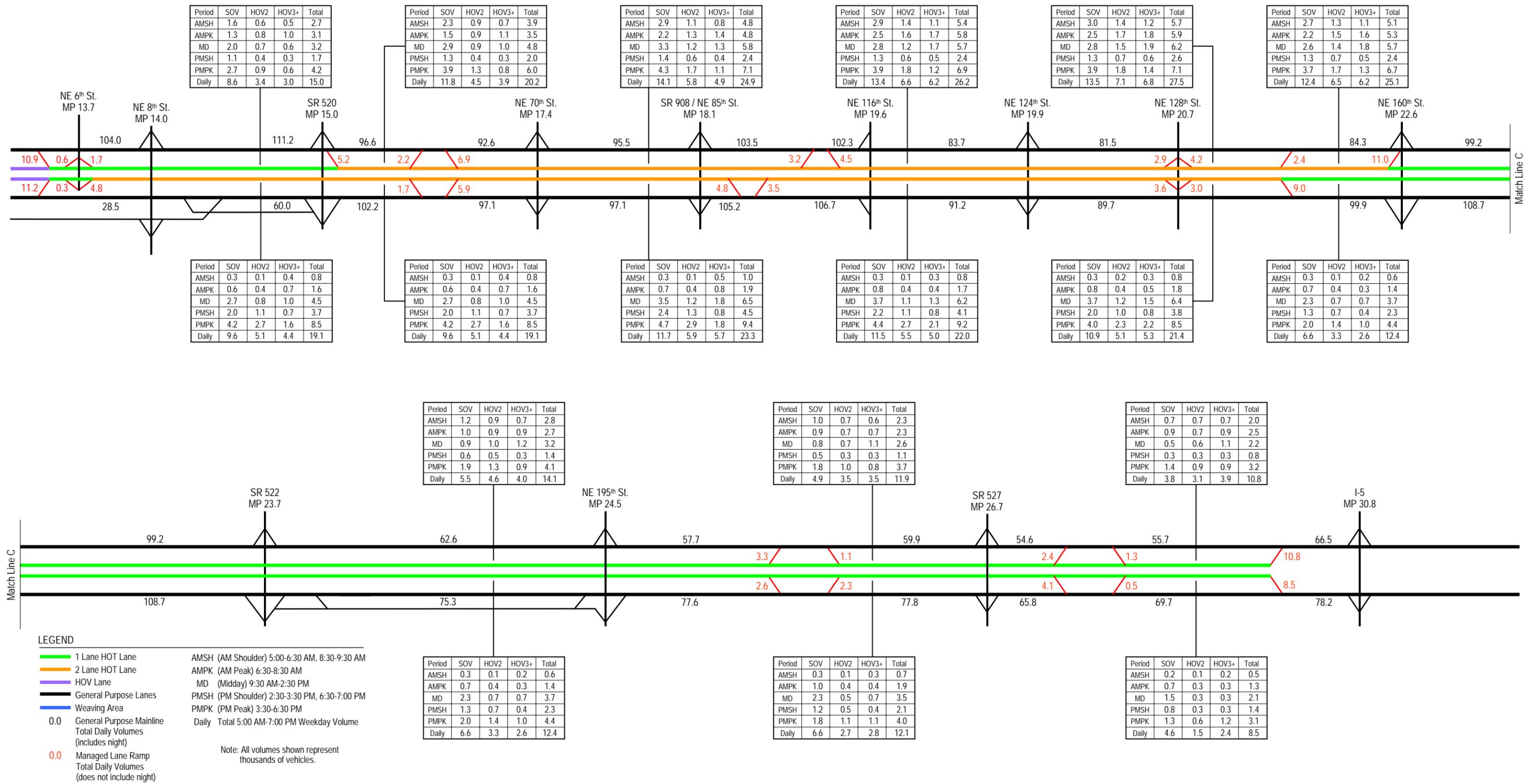
Note: All toll revenue is calculated in current dollars.

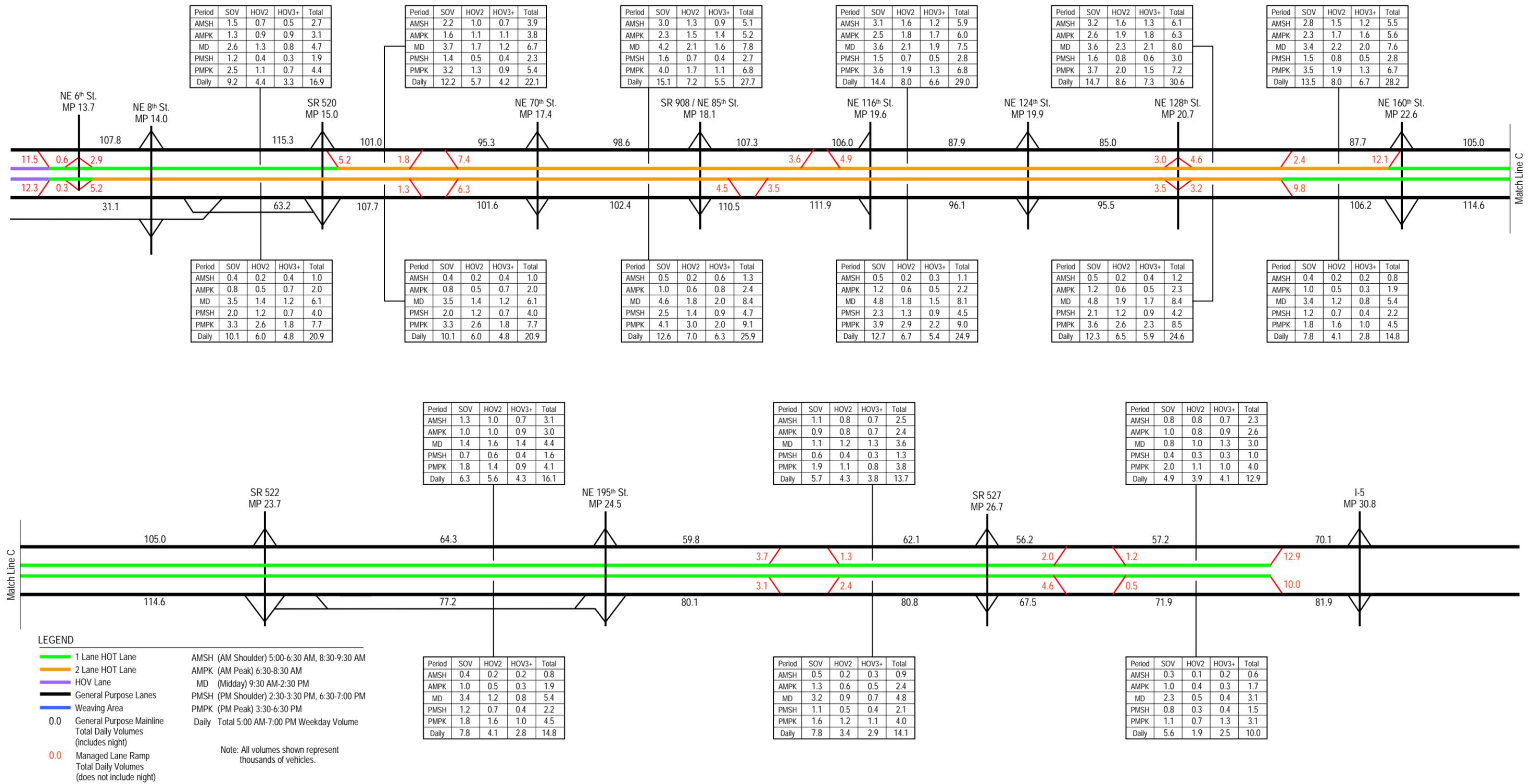


- LEGEND**
- 1 Lane HOT Lane
 - 2 Lane HOT Lane
 - HOV Lane
 - General Purpose Lanes
 - Weaving Area

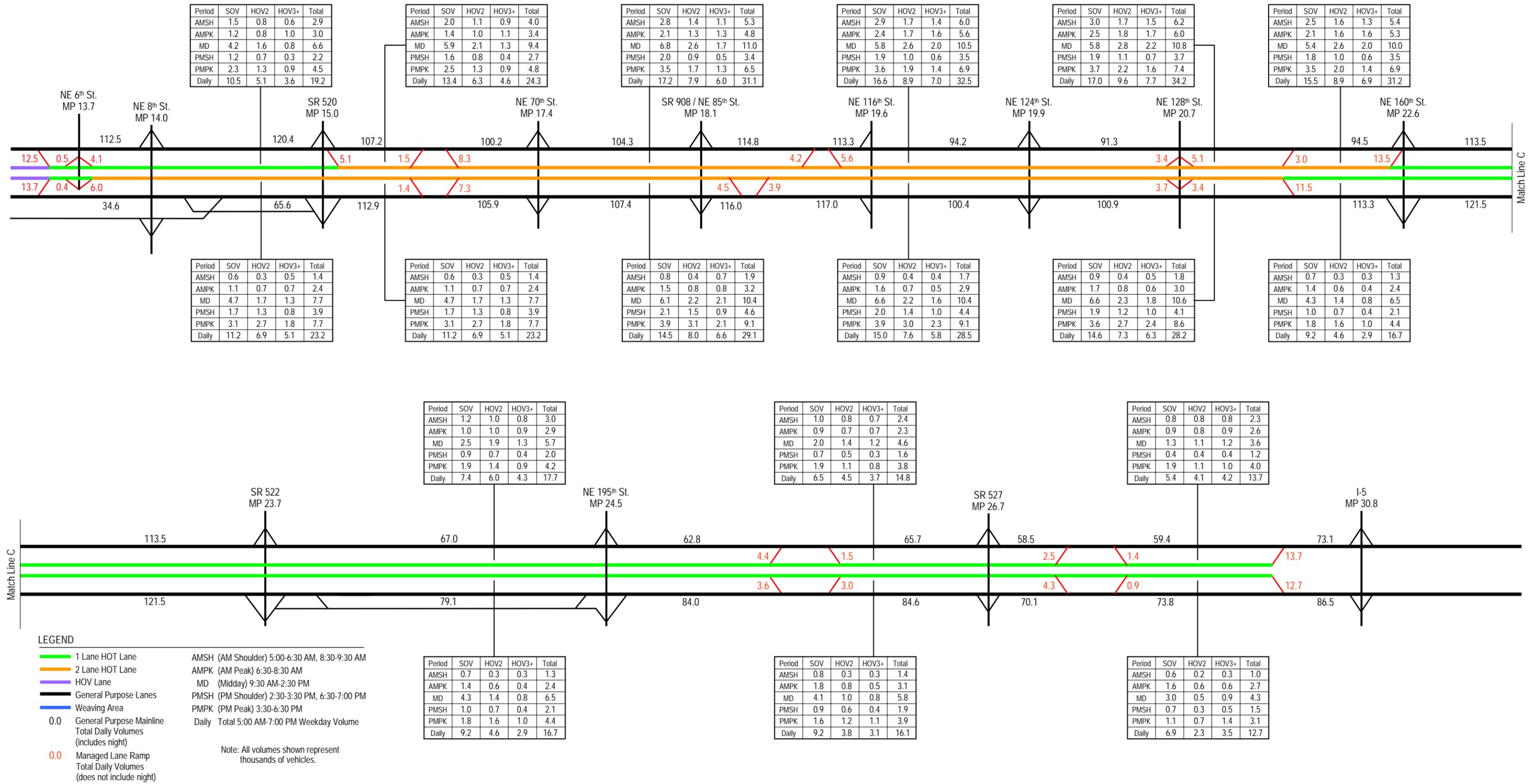




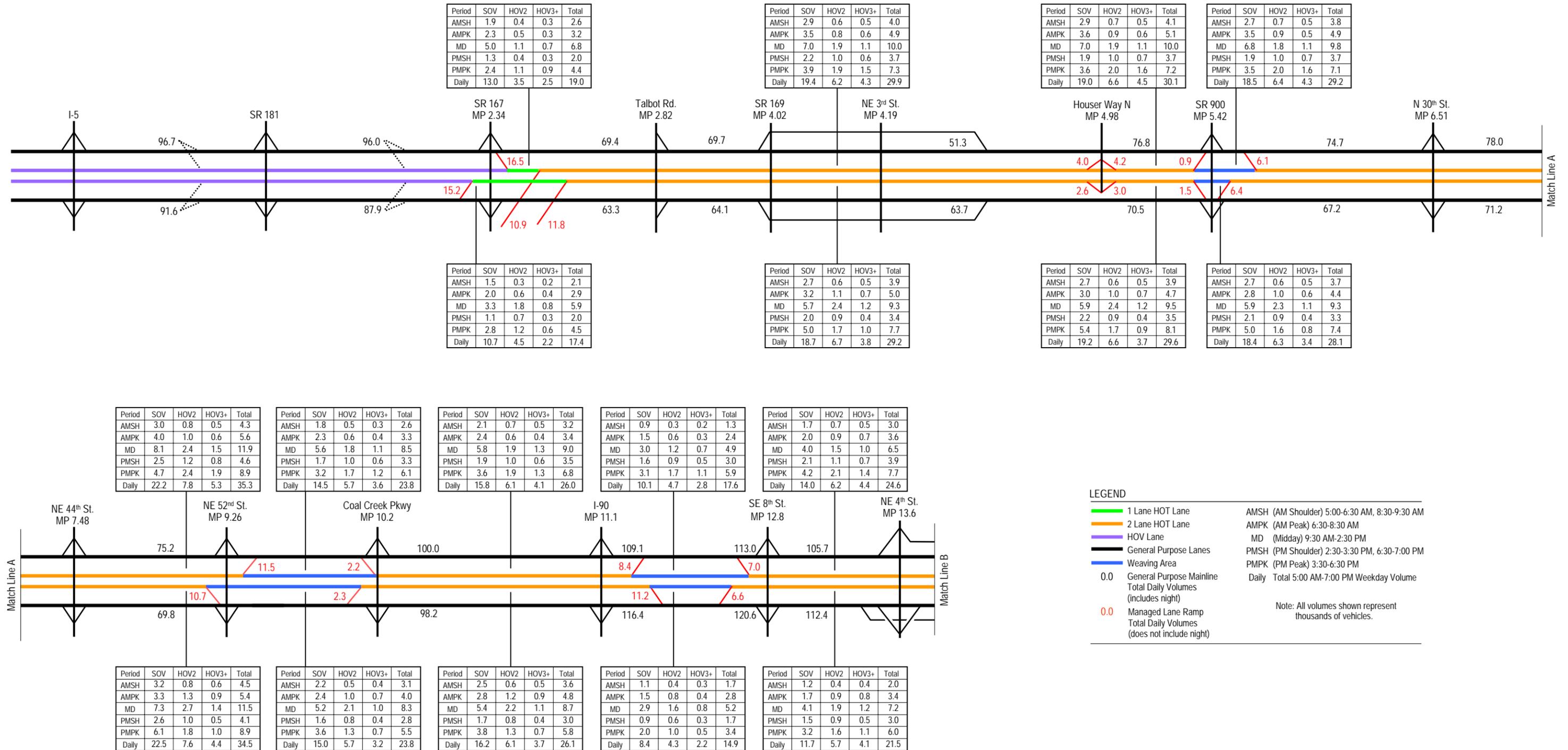




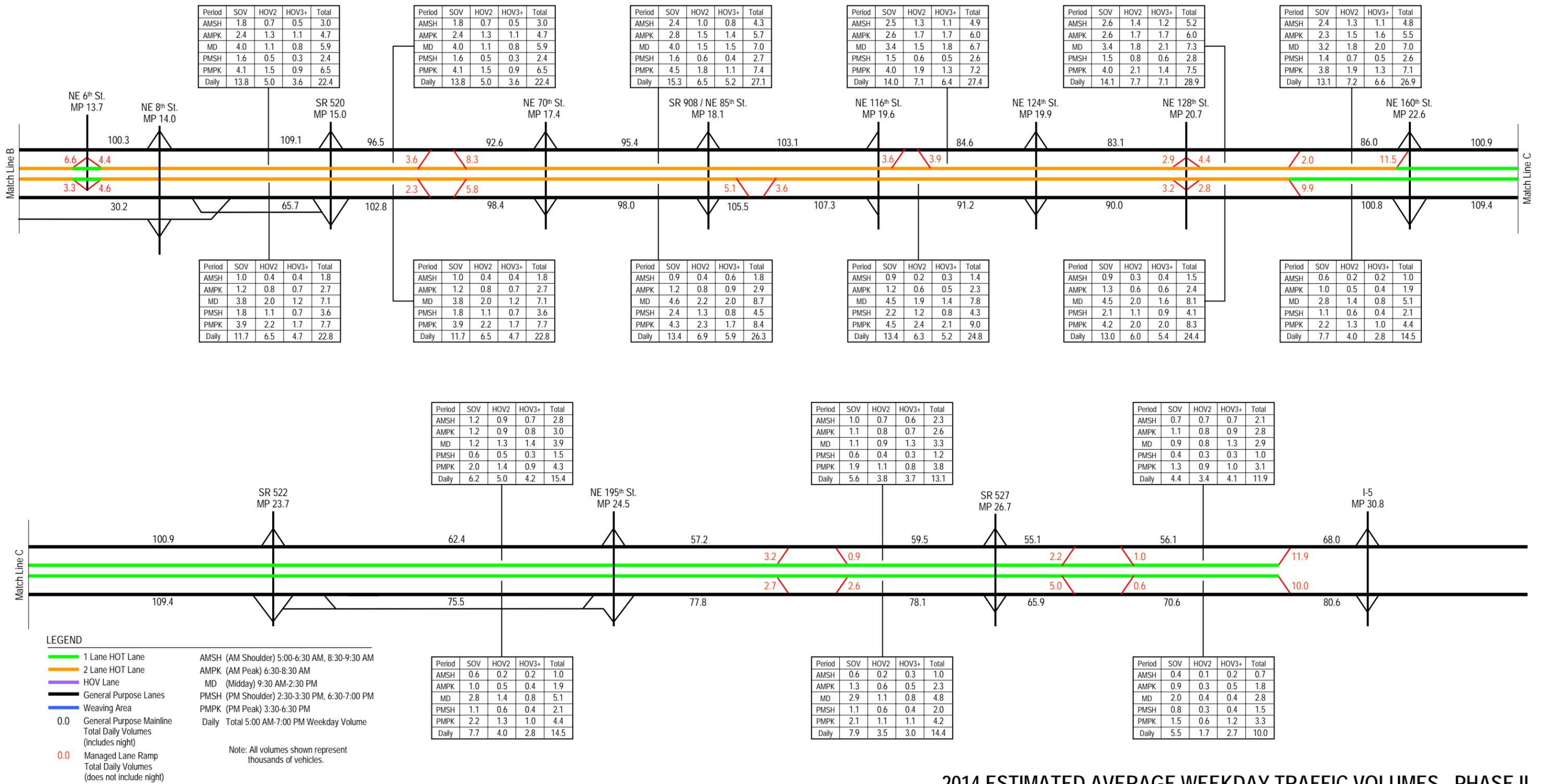
2020 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE I



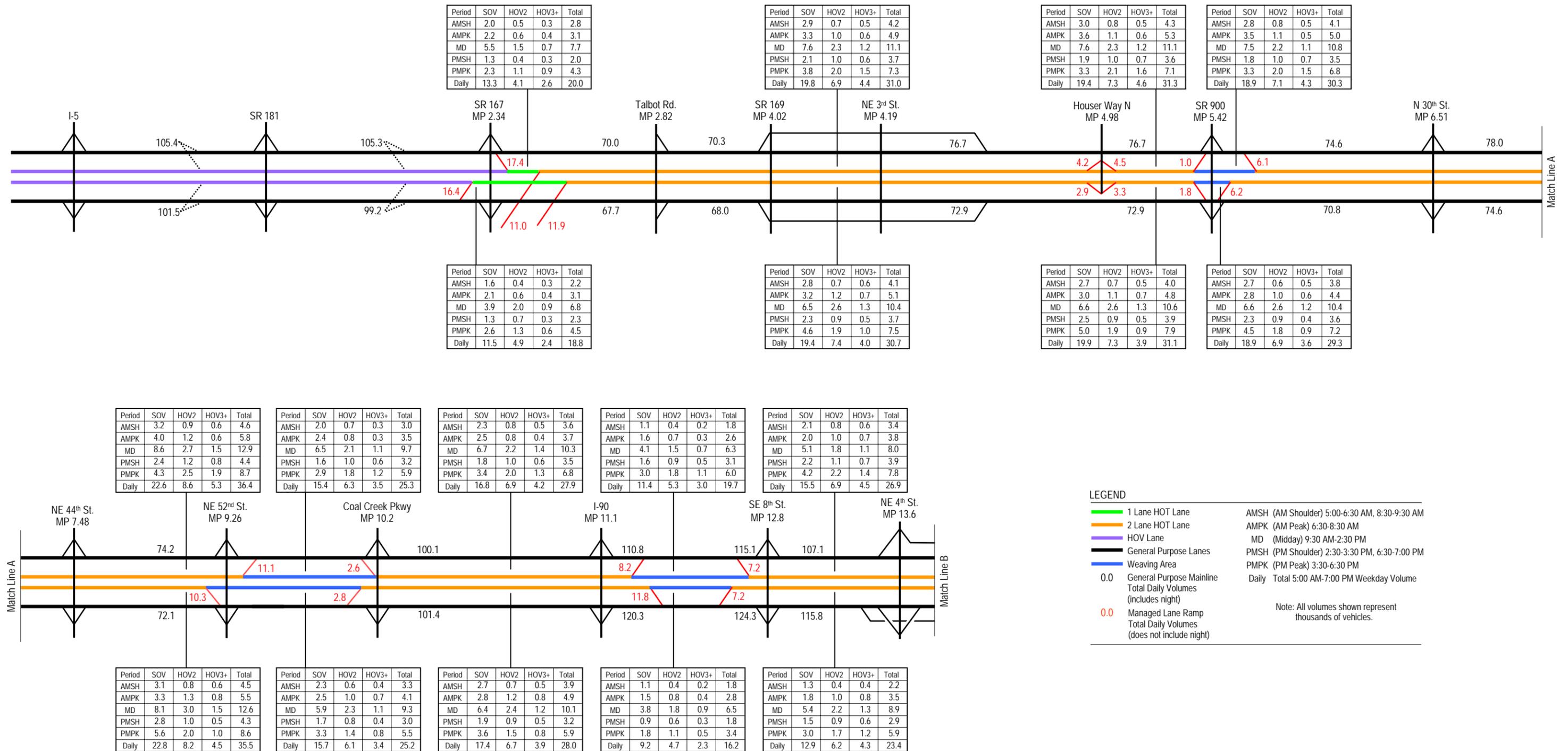
2030 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE I



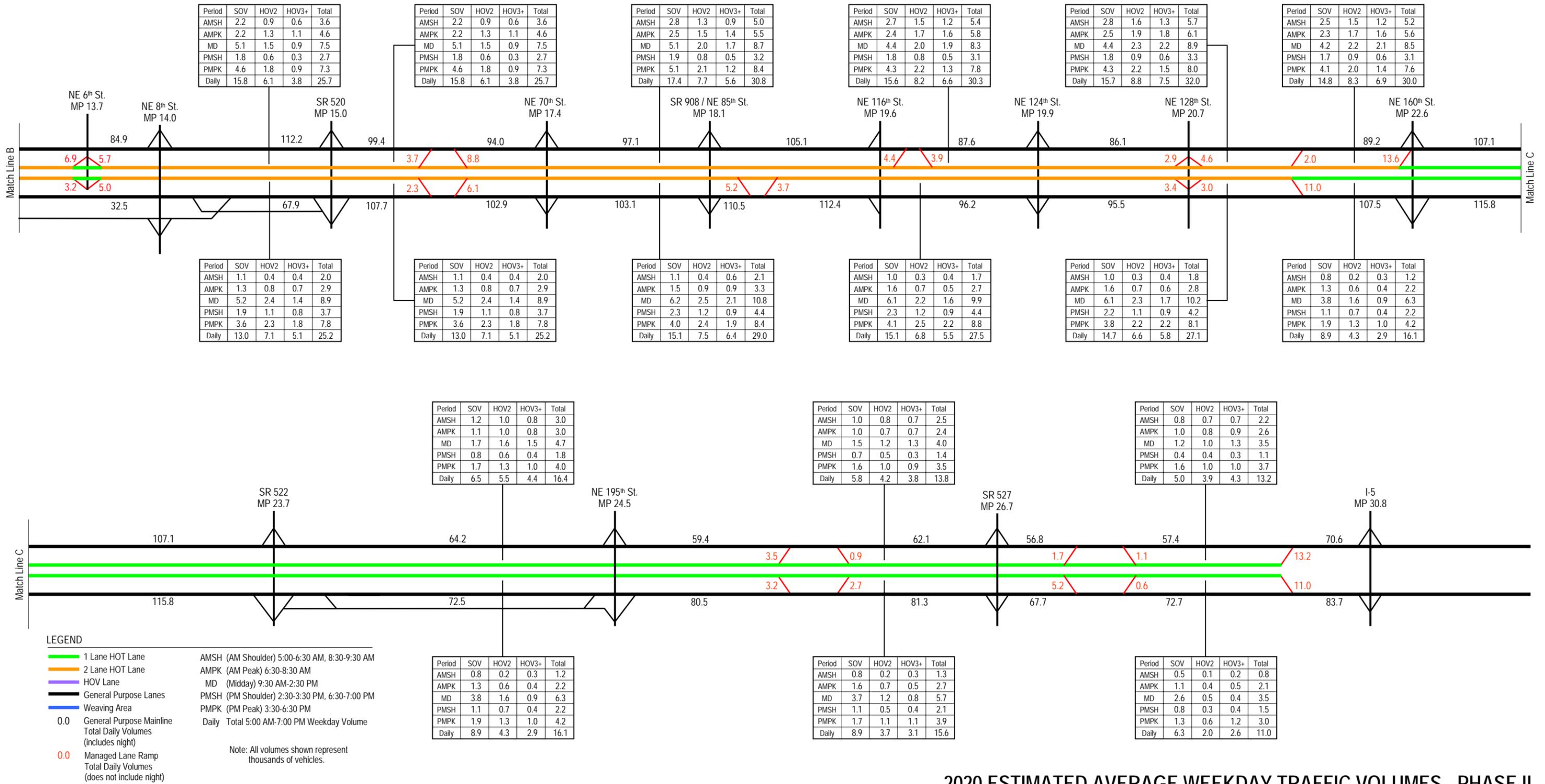
2014 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE II SOUTHERN SECTION

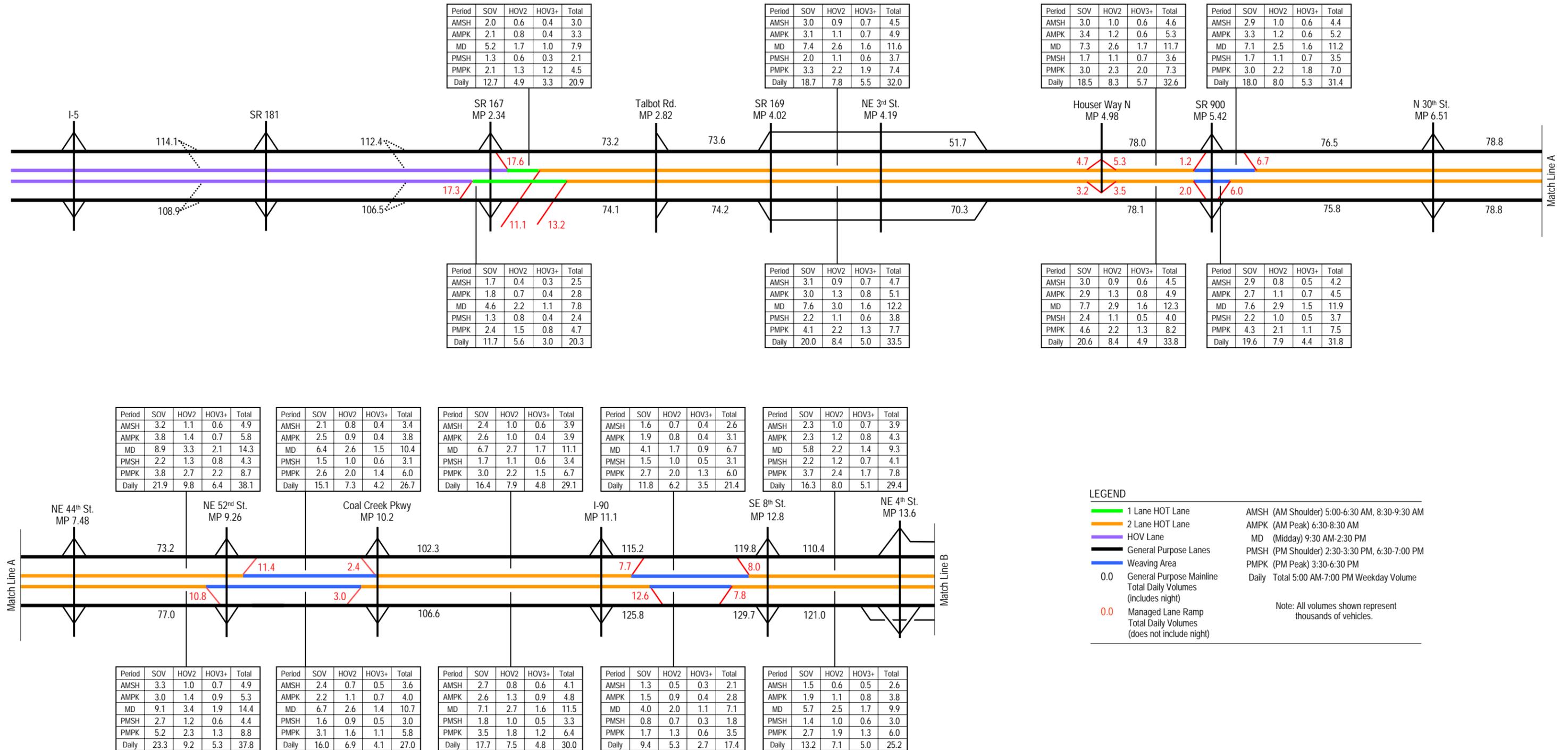


2014 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE II
NORTHERN SECTION

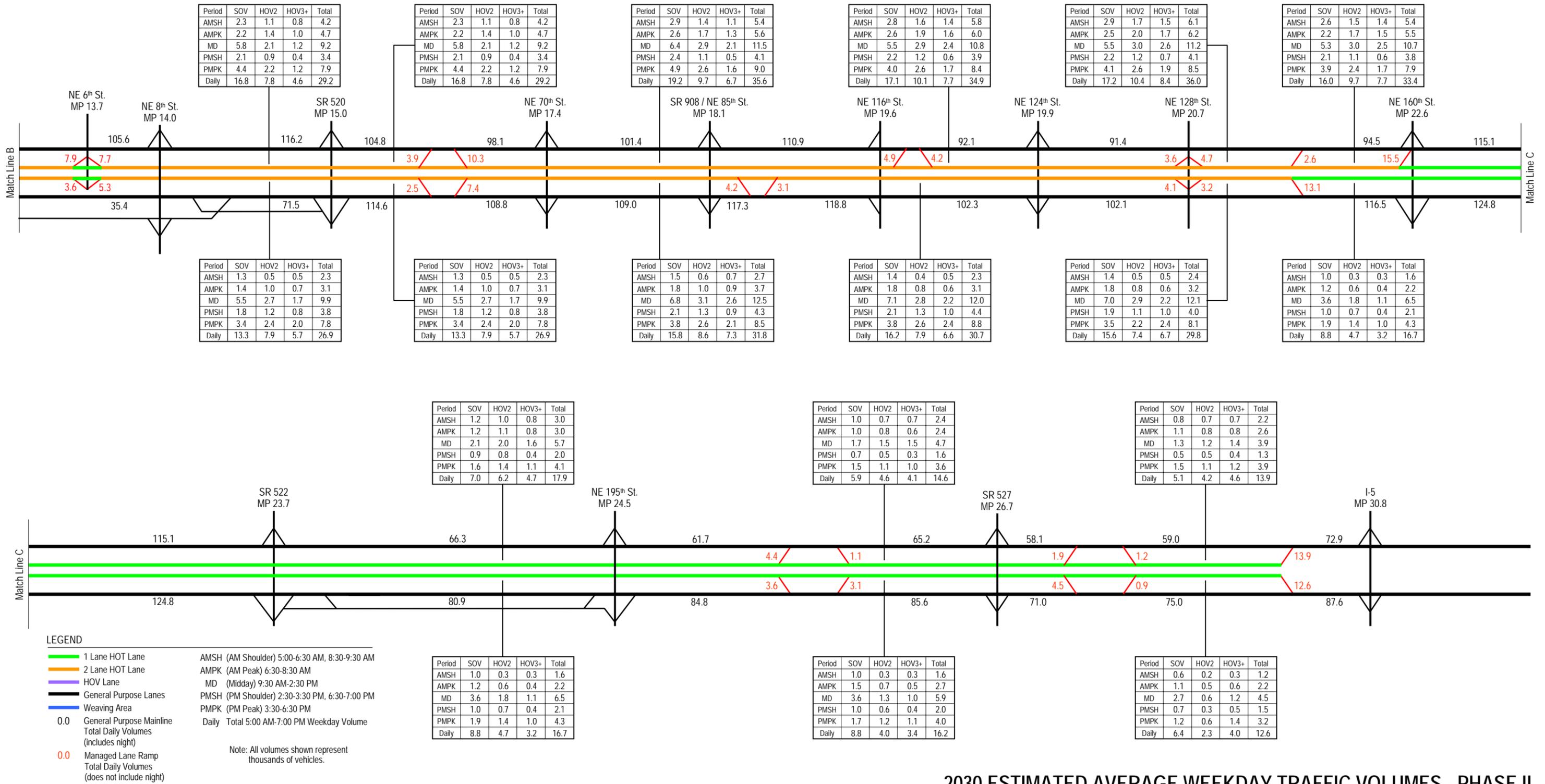


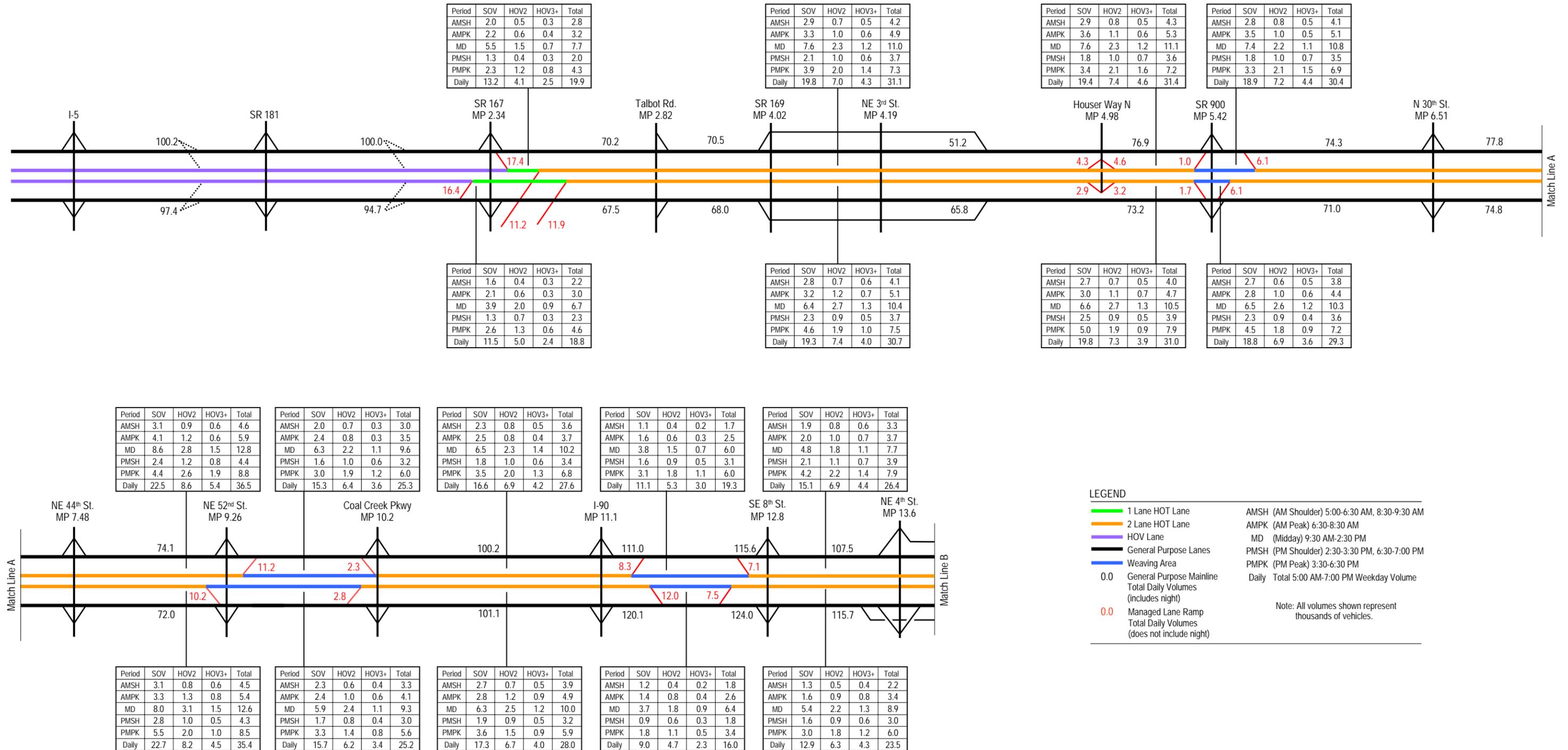
2020 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE II SOUTHERN SECTION





2030 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE II SOUTHERN SECTION





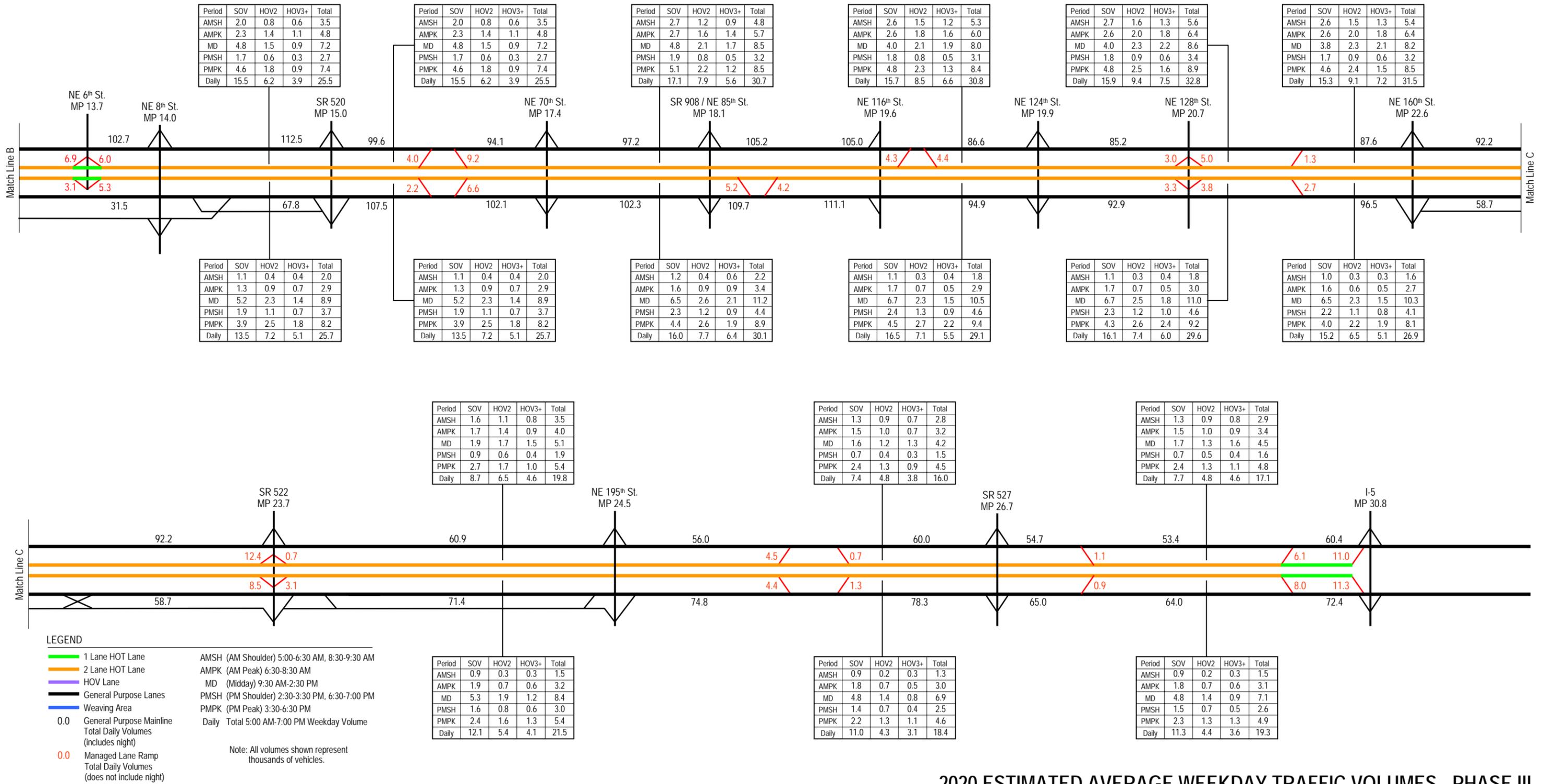
LEGEND

- 1 Lane HOT Lane
- 2 Lane HOT Lane
- HOV Lane
- General Purpose Lanes
- Weaving Area
- 0.0 General Purpose Mainline Total Daily Volumes (includes night)
- 0.0 Managed Lane Ramp Total Daily Volumes (does not include night)

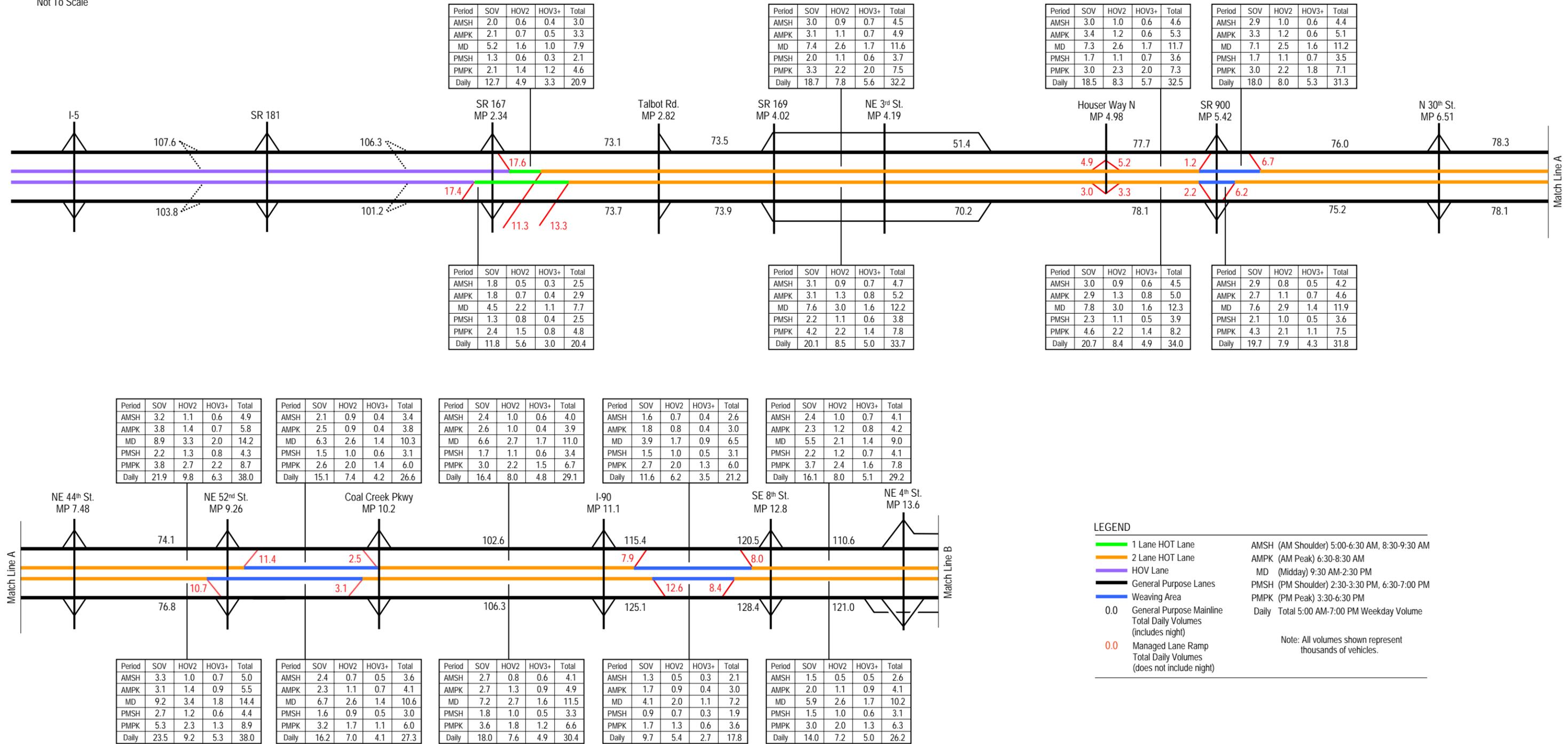
AMSH (AM Shoulder) 5:00-6:30 AM, 8:30-9:30 AM
 AMPK (AM Peak) 6:30-8:30 AM
 MD (Midday) 9:30 AM-2:30 PM
 PMSH (PM Shoulder) 2:30-3:30 PM, 6:30-7:00 PM
 PMPK (PM Peak) 3:30-6:30 PM
 Daily Total 5:00 AM-7:00 PM Weekday Volume

Note: All volumes shown represent thousands of vehicles.

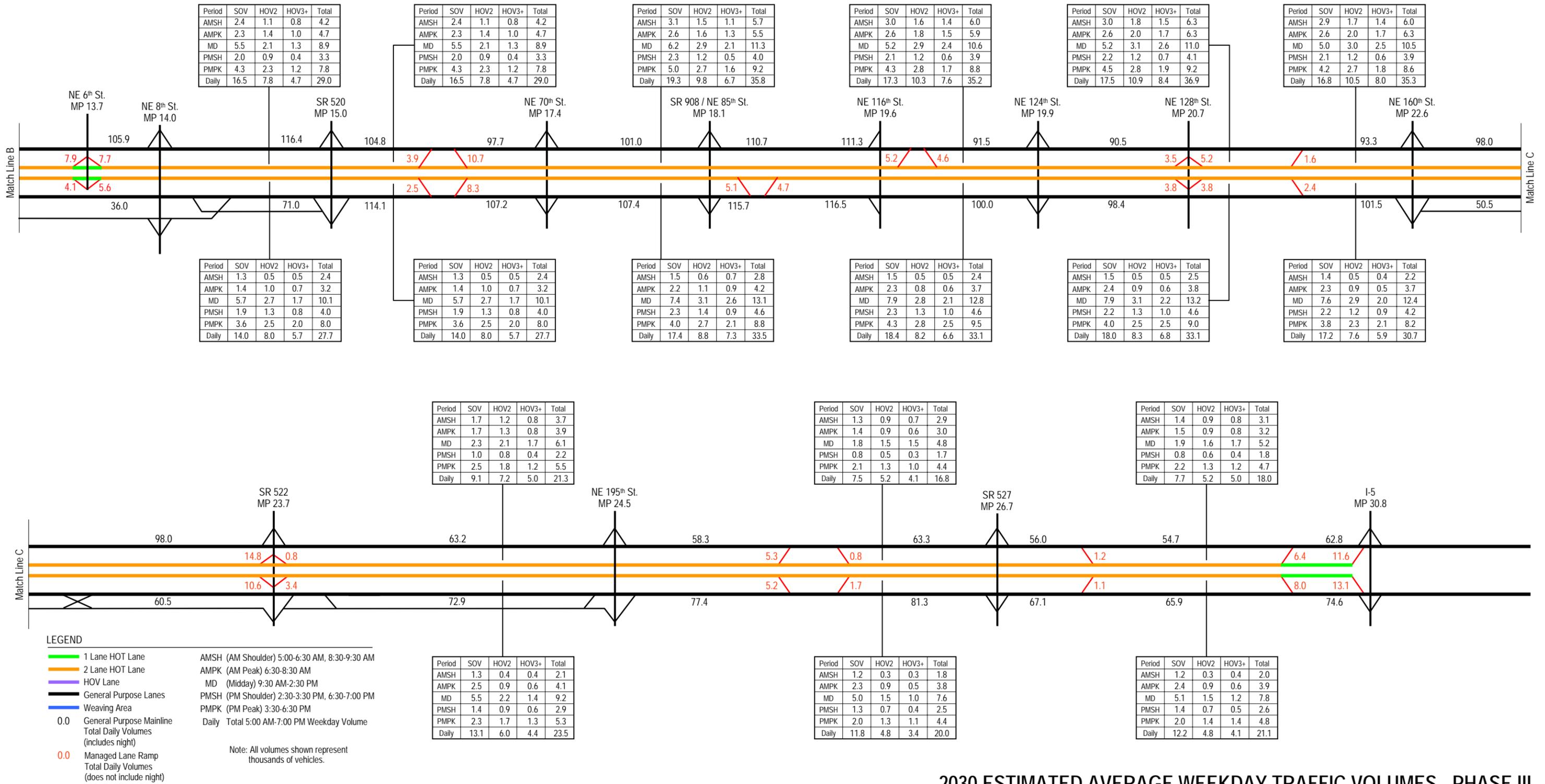
2020 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE III SOUTHERN SECTION



2020 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE III
 NORTHERN SECTION



2030 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE III SOUTHERN SECTION



2030 ESTIMATED AVERAGE WEEKDAY TRAFFIC VOLUMES - PHASE III
NORTHERN SECTION