

# DRAFT TECHNICAL MEMORANDUM TRAFFIC AND REVENUE ASSESSMENT OF MANAGED LANE ALTERNATIVES

This technical memorandum presents an overview of the traffic and revenue assessment for three new alternatives relating to the extension of the existing Toll Express Lanes (TEL) along the North I-25 corridor. These alternatives are as follows:

- § Alternative A: Add one managed lane per direction from 84<sup>th</sup> Avenue to 120<sup>th</sup> Avenue (Figure 1);
- § Alternative B: Add one managed lane per direction from 84<sup>th</sup> Avenue to SH 7 (Figure 2); and
- § Alternative C: Add one managed lane per direction from 84<sup>th</sup> Avenue to SH 7 and convert one general purpose lane per direction to one managed lane per direction from SH 7 to SH 66 (Figure 3).

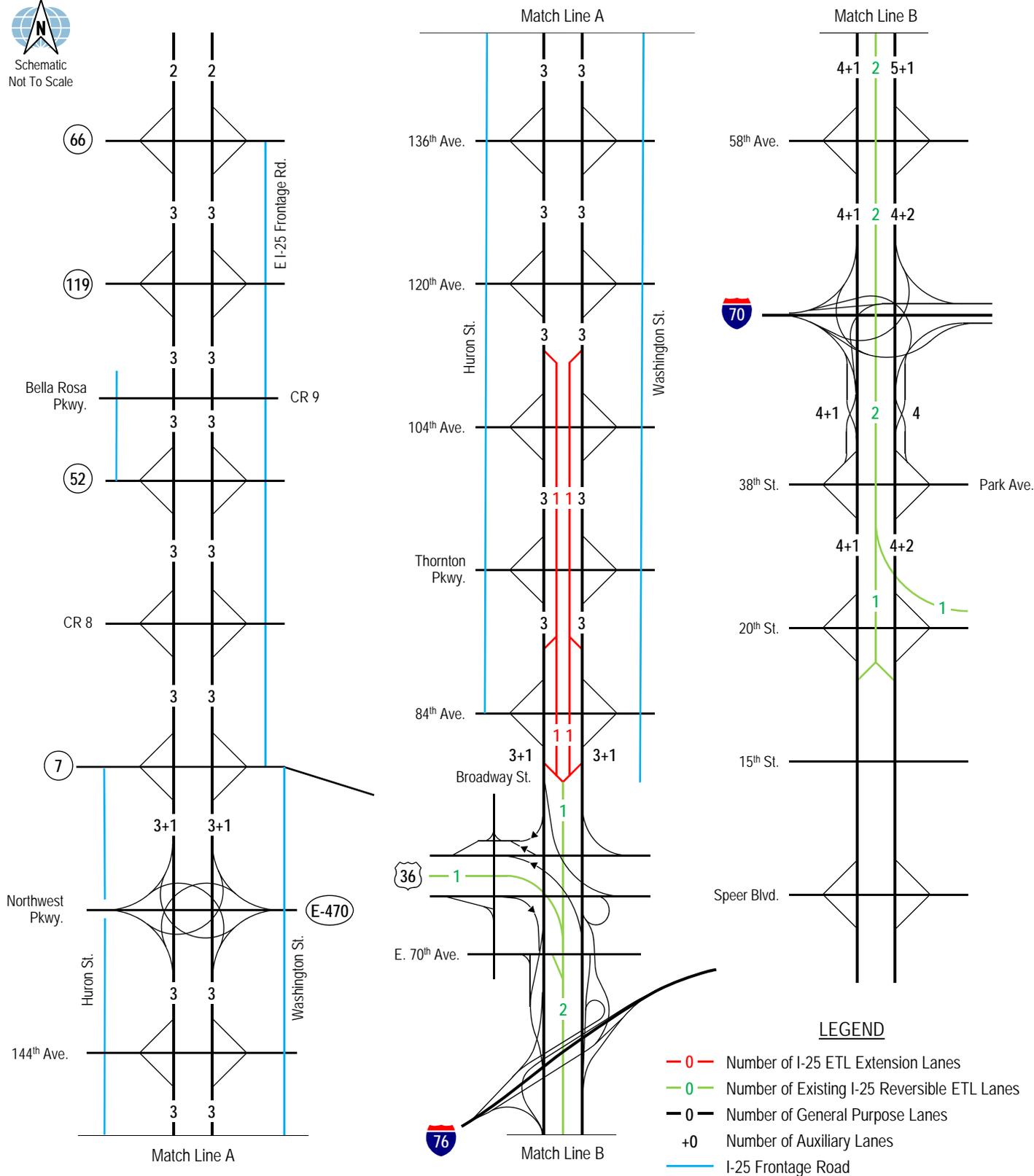
In both Alternatives A and B, in addition to the one managed lane per direction, I-25 has three general purpose (GP) lanes per direction. The three GP lanes per direction is the current configuration as shown in Figure 4. The Alternative C configuration includes three GP and one managed lane per direction from 84<sup>th</sup> Avenue to SH7 and two GP and one managed lane per direction from SH 7 to SH 66. Consistent with current policy, the tolling concept in these alternatives allows for toll-free passage in the managed lanes for HOV2+ vehicles, with SOVs paying a toll.

These alternatives are in addition to the many alternatives previously assessed by Wilbur Smith Associates (WSA) which have evolved over time, beginning in 2006 as part of our input into the North I-25 Draft and Final Environmental Impact Statements. Three prior assessments of managed lane alternatives have been conducted. The first set of alternatives was assessed in late 2006, the second set in mid-2009, and the third set in early 2010.

This current assessment is considerably different from those previously performed. First and foremost is the use of the traffic model developed by WSA as part of the recently completed US 36 Managed Lanes Traffic and Revenue Study. Both the global demand and subarea models use different traffic networks and trip tables than those used in the prior three I-25 managed lane assessments. Second, per-mile toll rates were optimized by individual tolling zone rather than across the entire length of the managed lane alternative. A discussion of the methodology used in this assessment, along with the traffic and revenue findings for the three alternatives identified above is presented below.

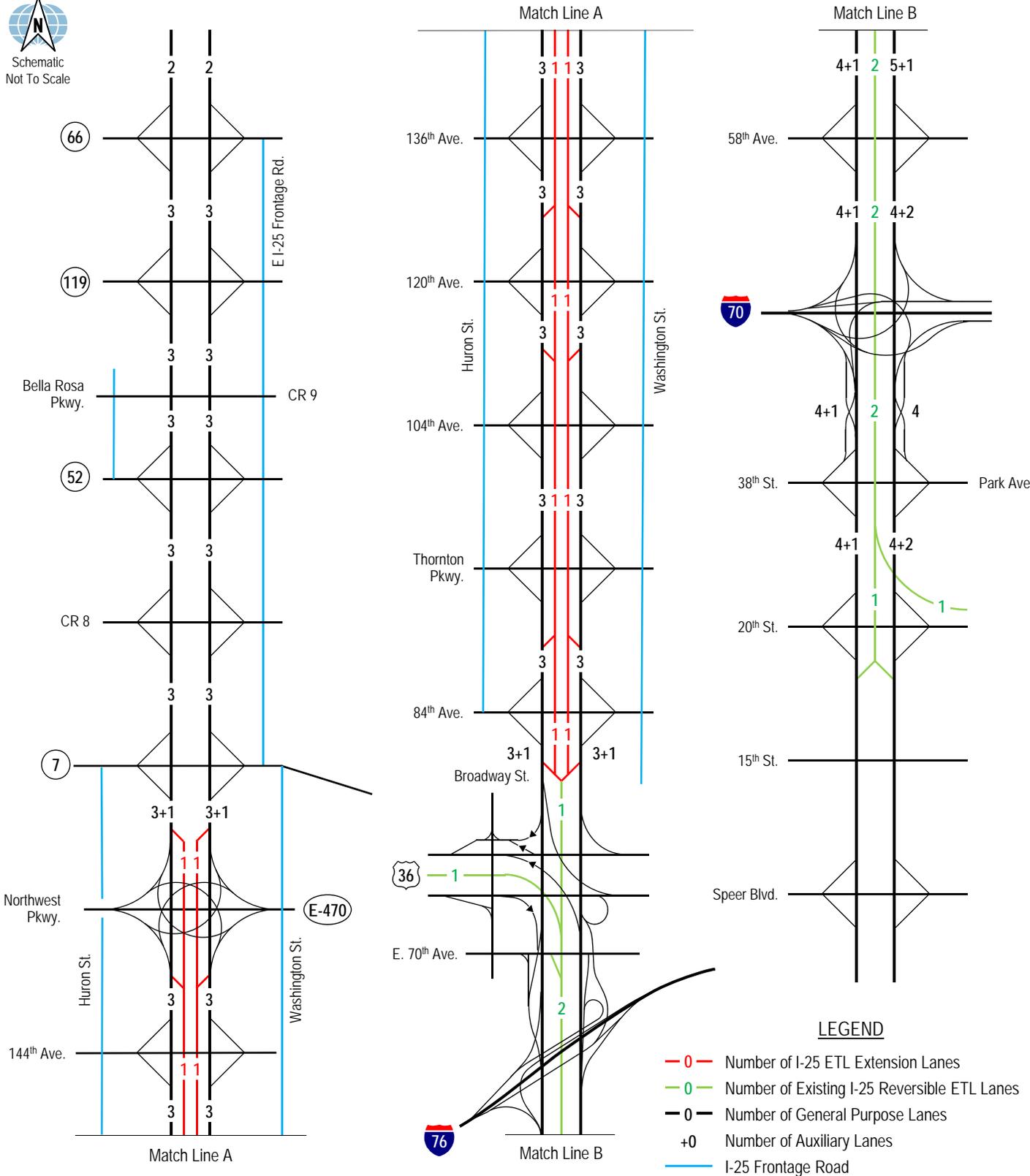
# I-25 Express Toll Lane Extension Preliminary Traffic and Revenue Study 2011

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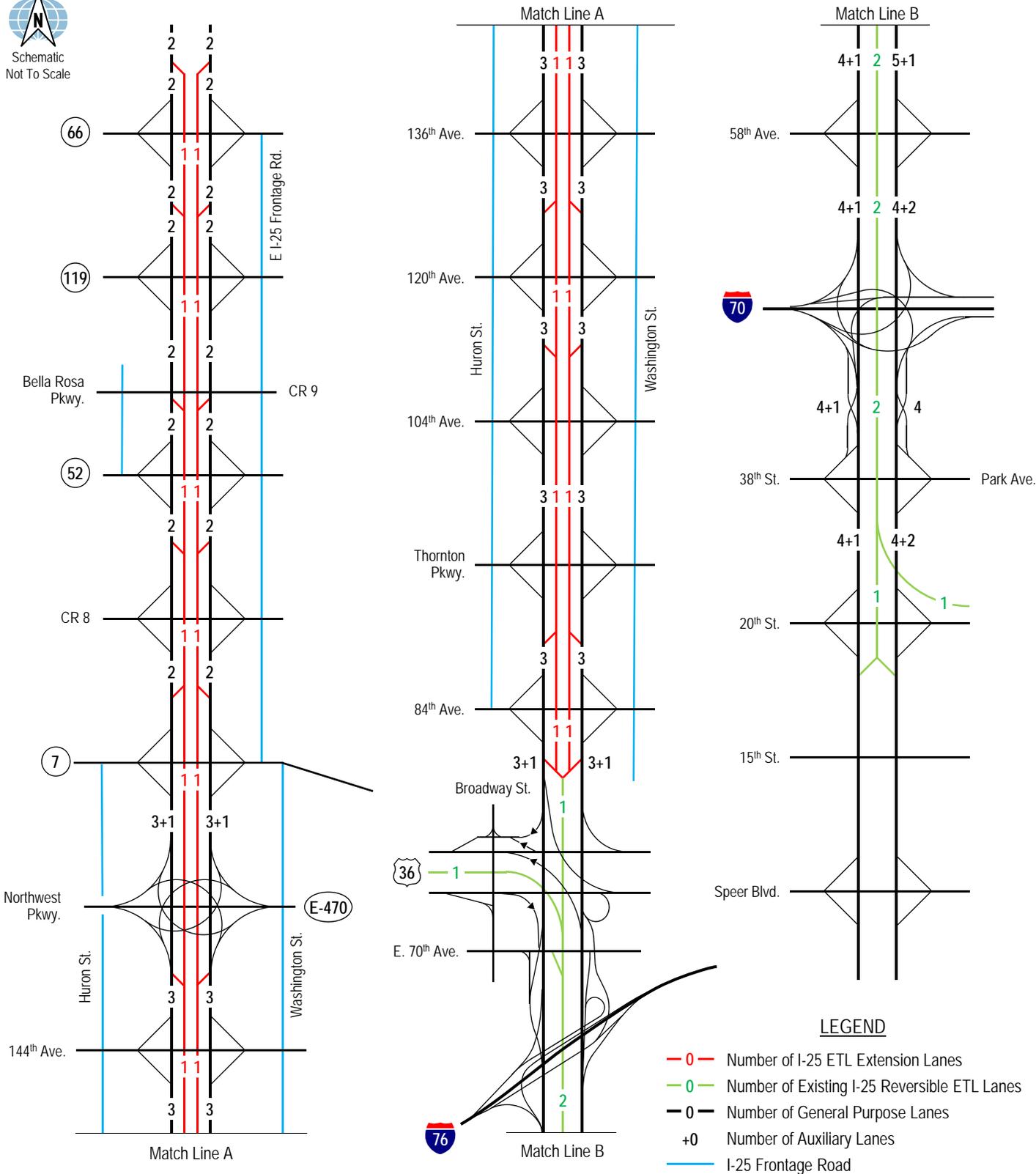
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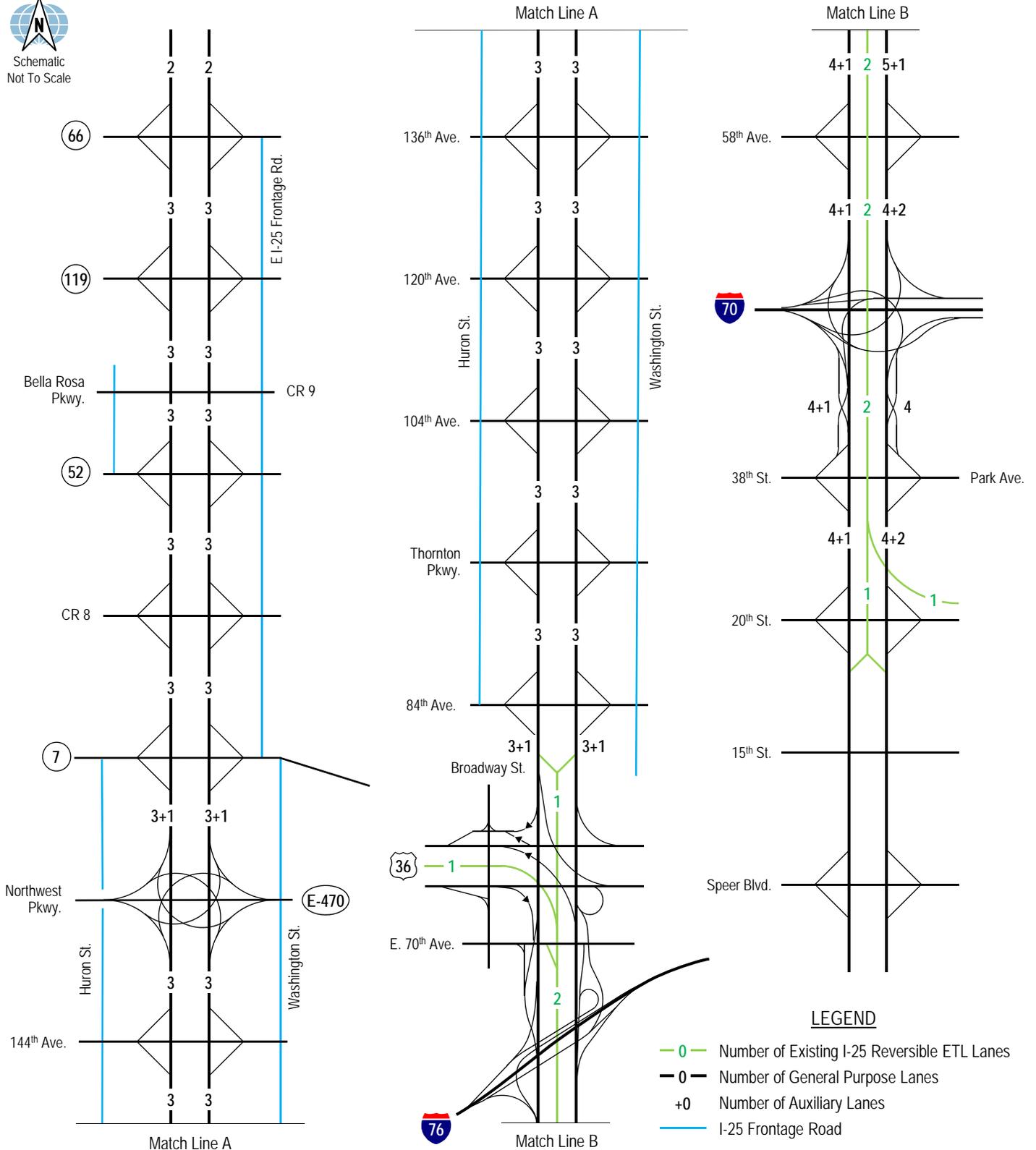
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## OVERVIEW

Motorists' willingness to pay to use a TEL facility is a function of the congestion levels in the toll-free general-purpose lanes, the time savings potential offered by the managed lanes, and the user's value of time. For the current assessment of managed lane alternatives, WSA developed a corridor-specific approach to estimate tolled traffic and revenue in the North I-25 EIS study area. The traffic and revenue estimation process for the managed-lane projects was a multi-step process that incorporated actual traffic counts and travel time data collected and available for US 36 only, during the aforementioned US 36 Managed Lane Traffic and Revenue Study (no detailed traffic counts or travel time data was available on I-25 in the North I-25 corridor), the regional travel demand model used in the US 36 Managed Lane Traffic and Revenue Study, and the windowed subarea model of the corridor taken from the US 36 study. The US 36 study model extended to just north of 104<sup>th</sup> Avenue on I-25 and was extended to north of SH 66 for this assessment. Major work elements of this forecasting process included the following:

- § Develop an existing traffic profile;
- § Revise the US 36 corridor pricing micro-models;
- § Estimate market share;
- § Toll sensitivity testing; and
- § Estimates of annual tolled traffic and revenue.

## DEVELOP EXISTING TRAFFIC PROFILE

Extensive hourly traffic counts for a typical weekday condition in 2008 were collected at all ramps and select mainline segments along US 36 as part of the US 36 Managed Land Traffic and Revenue Study. In addition, several mainline counts on I-25 were also collected as part of that study. These were used to develop a balanced traffic profile on US 36 and at the toll declaration zone on the existing I-25 Tolled Express Lanes. Based on these hourly variation patterns, traffic profiles for peak, shoulder, and off-peak time periods were developed that mirror the time periods used on the existing I-25 Tolled Express Lanes.

The following represents the time intervals for which the analyses were performed:

- § AM1 - AM Peak Pre-Shoulder Period (5:00 - 6:00 AM);
- § AM2 - AM Peak Shoulder Period (6:00 - 6:45 AM);
- § AM3 - AM Peak Shoulder Period (6:45 - 7:15 AM);
- § AM4 - AM Peak Period (7:15 - 8:15 AM);
- § AM5 - AM Peak Shoulder Period (8:15 - 8:45 AM);
- § AM6 - AM Peak Post-Shoulder Period (8:45 - 10:00 AM);
- § MD1 - Midday Period (10:00 AM - 12:00 PM);
- § MD2 - Midday Period (12:00 - 3:00 PM);
- § PM1 - PM Peak Shoulder (3:00 - 3:30 PM);
- § PM2 - PM Peak Shoulder (3:30 - 4:30 PM);

- § PM3 – PM Peak Period (4:30-6:00 PM); and
- § PM4 – PM Peak Shoulder (6:00-7:00 PM).

The overnight period from 7:00 PM to 5:00 AM for weekdays was not analyzed explicitly. The annual traffic and toll revenue forecasts presented later in this report assume a certain fixed percentage of traffic and revenue will occur during the overnight hours, as well as on weekends.

## DEVELOP CORRIDOR PRICING MICRO-MODEL

The global and subarea traffic models developed for the US 36 Managed Lanes Traffic and Revenue Study were used in this assessment. However, because the alternatives to be evaluated fell outside the northernmost I-25 boundary of the existing US 36 traffic and revenue study subarea models, WSA added the required network and trip table detail using the US 36 global demand models and extracting the necessary additional network and trip table detail from them. Updated subarea models were then created for years 2015, 2025 and 2035. The subarea traffic networks were re-coded to include the three project scenarios.

## ESTIMATE MARKET SHARE

Traffic and revenue analysis is based on an estimate of the amount of traffic willing to pay a toll of \$X to save Y minutes. However, as traffic shifts to the managed lanes, the travel time in the general purpose lanes (and therefore, the amount of time savings offered by the managed lanes) will change. The corridor micro-model attempts to find the equilibrium point between the amount of time savings and willingness to pay the prevailing toll rate.

Within the subarea model, for each origin-destination pair, the travel time using the managed lanes is compared to the travel time using a toll-free routing (on the freeway or its adjacent streets) to estimate a travel-time savings. The toll charged for each movement is compared to its time savings to estimate a ratio of “cost-per-minute-saved.” This cost-per-minute-saved is compared to the value-of-time for travelers. Those travelers with values-of-time higher than the cost-per-minute saved would tend to choose the tolled lanes, while those with lower values-of-time would tend to choose the general purpose lanes. Drivers’ values-of-time are not uniform, so for any given toll rate/time savings combination, only a portion of those eligible to use the managed lanes would actually choose to use them. Within each iteration of the equilibrium assignment process, a portion (market share) of eligible trips is assigned to the managed lanes and travel time savings are recalculated prior to moving to the next iteration within the assignment.

## TOLL SENSITIVITY TESTING

For each of the three project alternatives, a toll sensitivity analysis was performed for each time period, travel direction, tolling zone and analysis year (2015, 2025 and 2030). The location of the tolling zones is shown in Figure 5. Individual traffic assignments were run in \$0.05 increments testing toll rates ranging from \$0.05 to \$2.00 per mile. The results were plotted by tolling zone for each time period, and toll rates that optimized revenues were identified. Traffic volumes in the managed lanes at these toll levels were then checked to see if they exceeded the desired maximum service volume (MSV) of between 1,500 to 1,600 vehicles per lane per hour. If so, higher toll levels were selected to manage demand.

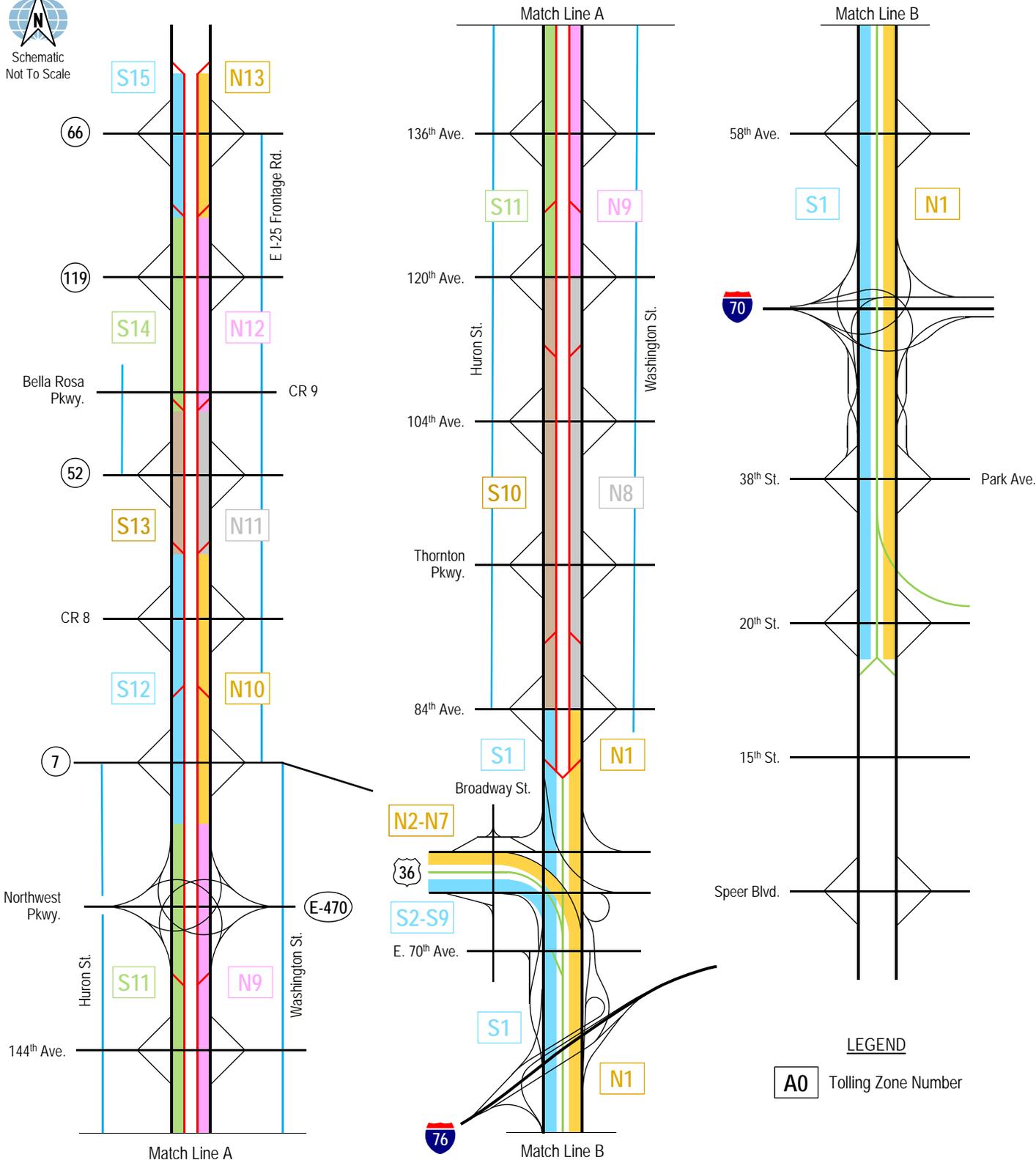
Based on the toll sensitivity analyses, Tables 1 through 3 provide a summary of the revenue optimizing toll rates for each of the 12 time periods and tolling zones for years 2015, 2025 and 2035 for Alternatives A through C, respectively. On the existing I-25 EXpress Toll Lanes, estimated tolls assumed for the full-length, seven mile trip for each time period and travel direction (N-1 and S-1) are also provided in the tables. At these two tolling zones, toll sensitivity analyses were not performed. Toll rates similar to those currently in place were used. By the assumed 2015 opening year, AM peak hour (7:15-8:15 AM) and PM peak period (4:30-6:00 PM) tolls were increased to \$4.75 from the current \$4.00, consistent with historical toll increases based on an average annual percent change. Adjustments to tolls in other time periods were made on a proportional basis. Toll rates for the shoulder periods before and after the 7:15 to 8:15 AM peak hour were increased from the current \$2.75 to \$4.75. This was done for compliance with the current Intergovernmental Agreement between the HPTE and the RTD which states that peak period rates, 6:45-8:45 AM and 4:30-6:00 PM, shall not be less than RTD Express fares. These rates are the same as those used in the US 36 Managed Lanes Traffic and Revenue Study.

### I-25 MANAGED LANE EXTENSION ALTERNATIVE A

In 2015, toll rates in the AM peak period range from \$0.15 to \$0.50 per mile to optimize revenue. During the PM peak period rates range from \$0.15 to \$0.40 per mile to optimize revenue. Generally speaking, toll rates in the shoulder periods surrounding the peak periods are slightly lower than the peaks. Off-peak periods tend to be significantly lower at around \$0.05 per mile.

By 2025, optimum toll rates in the AM peak period have increased to manage demand in the managed lanes and range between \$0.25 and \$0.80 per mile. During the PM peak period, rates range from \$0.30 to \$0.80 per mile to optimize revenue and manage demand.

By 2035, toll rates selected to maximize revenue during the AM and PM peak periods increase considerably, resulting in per-mile rates between \$0.40 and \$1.20 during the AM peak period and between \$0.50 and \$1.20 during the PM peak period.



**TOLLING ZONE CONFIGURATION  
 FOR PROJECT ALTERNATIVES A, B AND C**

**Table 1**  
**Alternative A Per-Mile Toll Rates**  
**I-25 Express Toll and Managed Lanes Extension From 84th Avenue to 120th Avenue**

**2015 Per-Mile Toll Rate (\$) By Toll Zone**

	Time Period	Northbound			Time Period	Southbound	
		N-1	N-8			S-1	S-10
AM1	5:00 AM - 6:00 AM	---	\$0.05	AM1	5:00 AM - 6:00 AM	\$0.50	\$0.05
AM2	6:00 AM - 6:45 AM	---	\$0.05	AM2	6:00 AM - 6:45 AM	\$2.00	\$0.20
AM3	6:45 AM - 7:15 AM	---	\$0.05	AM3	6:45 AM - 7:15 AM	\$4.75	\$0.45
AM4	7:15 AM - 8:15 AM	---	\$0.05	AM4	7:15 AM - 8:15 AM	\$4.75	\$0.50
AM5	8:15 AM - 8:45 AM	---	\$0.05	AM5	8:15 AM - 8:45 AM	\$4.75	\$0.45
AM6	8:45 AM - 10:00 AM	---	\$0.05	AM6	8:45 AM - 10:00 AM	\$1.50	\$0.15
MD1	10:00 AM - 12:00 PM	---	\$0.05	MD1	10:00 AM - 12:00 PM	---	\$0.05
MD2	12:00 PM - 3:00 PM	\$0.50	\$0.05	MD2	12:00 PM - 3:00 PM	---	\$0.05
PM1	3:00 PM - 3:30 PM	\$1.75	\$0.20	PM1	3:00 PM - 3:30 PM	---	\$0.05
PM2	3:30 PM - 4:30 PM	\$2.50	\$0.35	PM2	3:30 PM - 4:30 PM	---	\$0.10
PM3	4:30 PM - 6:00 PM	\$4.75	\$0.40	PM3	4:30 PM - 6:00 PM	---	\$0.10
PM4	6:00 PM - 7:00 PM	\$1.75	\$0.15	PM4	6:00 PM - 7:00 PM	---	\$0.05

**2025 Per-Mile Toll Rate (\$) By Toll Zone**

	Time Period	Northbound			Time Period	Southbound	
		N-1	N-8			S-1	S-10
AM1	5:00 AM - 6:00 AM	---	\$0.05	AM1	5:00 AM - 6:00 AM	\$0.75	\$0.05
AM2	6:00 AM - 6:45 AM	---	\$0.05	AM2	6:00 AM - 6:45 AM	\$2.75	\$0.30
AM3	6:45 AM - 7:15 AM	---	\$0.05	AM3	6:45 AM - 7:15 AM	\$6.50	\$0.60
AM4	7:15 AM - 8:15 AM	---	\$0.05	AM4	7:15 AM - 8:15 AM	\$6.50	\$0.80
AM5	8:15 AM - 8:45 AM	---	\$0.05	AM5	8:15 AM - 8:45 AM	\$6.50	\$0.60
AM6	8:45 AM - 10:00 AM	---	\$0.05	AM6	8:45 AM - 10:00 AM	\$2.00	\$0.25
MD1	10:00 AM - 12:00 PM	---	\$0.05	MD1	10:00 AM - 12:00 PM	---	\$0.05
MD2	12:00 PM - 3:00 PM	\$0.75	\$0.10	MD2	12:00 PM - 3:00 PM	---	\$0.10
PM1	3:00 PM - 3:30 PM	\$2.50	\$0.40	PM1	3:00 PM - 3:30 PM	---	\$0.10
PM2	3:30 PM - 4:30 PM	\$3.25	\$0.60	PM2	3:30 PM - 4:30 PM	---	\$0.10
PM3	4:30 PM - 6:00 PM	\$6.50	\$0.80	PM3	4:30 PM - 6:00 PM	---	\$0.10
PM4	6:00 PM - 7:00 PM	\$2.50	\$0.30	PM4	6:00 PM - 7:00 PM	---	\$0.05

**2035 Per-Mile Toll Rate (\$) By Toll Zone**

	Time Period	Northbound			Time Period	Southbound	
		N-1	N-8			S-1	S-10
AM1	5:00 AM - 6:00 AM	---	\$0.05	AM1	5:00 AM - 6:00 AM	\$1.00	\$0.10 #
AM2	6:00 AM - 6:45 AM	---	\$0.05	AM2	6:00 AM - 6:45 AM	\$3.75	\$0.40
AM3	6:45 AM - 7:15 AM	---	\$0.05	AM3	6:45 AM - 7:15 AM	\$8.75	\$1.00
AM4	7:15 AM - 8:15 AM	---	\$0.05	AM4	7:15 AM - 8:15 AM	\$8.75	\$1.20
AM5	8:15 AM - 8:45 AM	---	\$0.05	AM5	8:15 AM - 8:45 AM	\$8.75	\$0.80
AM6	8:45 AM - 10:00 AM	---	\$0.05	AM6	8:45 AM - 10:00 AM	\$2.75	\$0.40
MD1	10:00 AM - 12:00 PM	---	\$0.10	MD1	10:00 AM - 12:00 PM	---	\$0.10
MD2	12:00 PM - 3:00 PM	\$1.00	\$0.20	MD2	12:00 PM - 3:00 PM	---	\$0.20
PM1	3:00 PM - 3:30 PM	\$3.25	\$0.80	PM1	3:00 PM - 3:30 PM	---	\$0.15
PM2	3:30 PM - 4:30 PM	\$4.50	\$1.00	PM2	3:30 PM - 4:30 PM	---	\$0.20
PM3	4:30 PM - 6:00 PM	\$8.75	\$1.20	PM3	4:30 PM - 6:00 PM	---	\$0.20
PM4	6:00 PM - 7:00 PM	\$3.25	\$0.50	PM4	6:00 PM - 7:00 PM	---	\$0.10

Note: The toll rates shown on I-25 (N-1 and S-1) are actual tolls and not per-mile toll rate.  
All Toll Rates are Shown in Future Year Dollars.

**Table 2**  
**Alternative B Per-Mile Toll Rates**  
**I-25 Express Toll and Managed Lanes Extension From 84th Avenue to SH 7**

2015 Per-Mile Toll Rate (\$) By Toll Zone									
Time Period	Northbound			Time Period	Southbound				
	N-1	N-8	N-9		S-1	S-10	S-11		
AM1	5:00 AM - 6:00 AM	---	\$0.05	\$0.05	AM1	5:00 AM - 6:00 AM	\$0.50	\$0.05	\$0.05
AM2	6:00 AM - 6:45 AM	---	\$0.05	\$0.05	AM2	6:00 AM - 6:45 AM	\$2.00	\$0.20	\$0.10
AM3	6:45 AM - 7:15 AM	---	\$0.05	\$0.05	AM3	6:45 AM - 7:15 AM	\$4.75	\$0.40	\$0.30
AM4	7:15 AM - 8:15 AM	---	\$0.05	\$0.05	AM4	7:15 AM - 8:15 AM	\$4.75	\$0.50	\$0.40
AM5	8:15 AM - 8:45 AM	---	\$0.05	\$0.05	AM5	8:15 AM - 8:45 AM	\$4.75	\$0.40	\$0.30
AM6	8:45 AM - 10:00 AM	---	\$0.05	\$0.05	AM6	8:45 AM - 10:00 AM	\$1.50	\$0.15	\$0.10
MD1	10:00 AM - 12:00 PM	---	\$0.05	\$0.05	MD1	10:00 AM - 12:00 PM	---	\$0.05	\$0.05
MD2	12:00 PM - 3:00 PM	\$0.50	\$0.05	\$0.05	MD2	12:00 PM - 3:00 PM	---	\$0.05	\$0.05
PM1	3:00 PM - 3:30 PM	\$1.75	\$0.10	\$0.05	PM1	3:00 PM - 3:30 PM	---	\$0.05	\$0.05
PM2	3:30 PM - 4:30 PM	\$2.50	\$0.30	\$0.20	PM2	3:30 PM - 4:30 PM	---	\$0.10	\$0.05
PM3	4:30 PM - 6:00 PM	\$4.75	\$0.40	\$0.30	PM3	4:30 PM - 6:00 PM	---	\$0.10	\$0.05
PM4	6:00 PM - 7:00 PM	\$1.75	\$0.10	\$0.05	PM4	6:00 PM - 7:00 PM	---	\$0.05	\$0.05

2025 Per-Mile Toll Rate (\$) By Toll Zone									
Time Period	Northbound			Time Period	Southbound				
	N-1	N-8	N-9		S-1	S-10	S-11		
AM1	5:00 AM - 6:00 AM	---	\$0.05	\$0.05	AM1	5:00 AM - 6:00 AM	\$0.75	\$0.05	\$0.05
AM2	6:00 AM - 6:45 AM	---	\$0.05	\$0.05	AM2	6:00 AM - 6:45 AM	\$2.75	\$0.30	\$0.20
AM3	6:45 AM - 7:15 AM	---	\$0.05	\$0.05	AM3	6:45 AM - 7:15 AM	\$6.50	\$0.60	\$0.50
AM4	7:15 AM - 8:15 AM	---	\$0.05	\$0.05	AM4	7:15 AM - 8:15 AM	\$6.50	\$0.80	\$0.60
AM5	8:15 AM - 8:45 AM	---	\$0.05	\$0.05	AM5	8:15 AM - 8:45 AM	\$6.50	\$0.60	\$0.45
AM6	8:45 AM - 10:00 AM	---	\$0.05	\$0.05	AM6	8:45 AM - 10:00 AM	\$2.00	\$0.20	\$0.15
MD1	10:00 AM - 12:00 PM	---	\$0.05	\$0.05	MD1	10:00 AM - 12:00 PM	---	\$0.05	\$0.05
MD2	12:00 PM - 3:00 PM	\$0.75	\$0.05	\$0.05	MD2	12:00 PM - 3:00 PM	---	\$0.05	\$0.05
PM1	3:00 PM - 3:30 PM	\$2.50	\$0.30	\$0.20	PM1	3:00 PM - 3:30 PM	---	\$0.10	\$0.05
PM2	3:30 PM - 4:30 PM	\$3.25	\$0.55	\$0.40	PM2	3:30 PM - 4:30 PM	---	\$0.15	\$0.10
PM3	4:30 PM - 6:00 PM	\$6.50	\$0.80	\$0.50	PM3	4:30 PM - 6:00 PM	---	\$0.15	\$0.15
PM4	6:00 PM - 7:00 PM	\$2.50	\$0.30	\$0.20	PM4	6:00 PM - 7:00 PM	---	\$0.10	\$0.05

2035 Per-Mile Toll Rate (\$) By Toll Zone									
Time Period	Northbound			Time Period	Southbound				
	N-1	N-8	N-9		S-1	S-10	S-11		
AM1	5:00 AM - 6:00 AM	---	\$0.05	\$0.05	AM1	5:00 AM - 6:00 AM	\$1.00	\$0.10	\$0.05
AM2	6:00 AM - 6:45 AM	---	\$0.05	\$0.05	AM2	6:00 AM - 6:45 AM	\$3.75	\$0.40	\$0.30
AM3	6:45 AM - 7:15 AM	---	\$0.05	\$0.05	AM3	6:45 AM - 7:15 AM	\$8.75	\$1.00	\$0.80
AM4	7:15 AM - 8:15 AM	---	\$0.10	\$0.10	AM4	7:15 AM - 8:15 AM	\$8.75	\$1.40	\$1.00
AM5	8:15 AM - 8:45 AM	---	\$0.05	\$0.05	AM5	8:15 AM - 8:45 AM	\$8.75	\$1.00	\$0.60
AM6	8:45 AM - 10:00 AM	---	\$0.05	\$0.05	AM6	8:45 AM - 10:00 AM	\$2.75	\$0.40	\$0.30
MD1	10:00 AM - 12:00 PM	---	\$0.05	\$0.05	MD1	10:00 AM - 12:00 PM	---	\$0.15	\$0.10
MD2	12:00 PM - 3:00 PM	\$1.00	\$0.20	\$0.20	MD2	12:00 PM - 3:00 PM	---	\$0.20	\$0.15
PM1	3:00 PM - 3:30 PM	\$3.25	\$0.60	\$0.55	PM1	3:00 PM - 3:30 PM	---	\$0.20	\$0.15
PM2	3:30 PM - 4:30 PM	\$4.50	\$1.00	\$0.60	PM2	3:30 PM - 4:30 PM	---	\$0.30	\$0.25
PM3	4:30 PM - 6:00 PM	\$8.75	\$1.40	\$1.00	PM3	4:30 PM - 6:00 PM	---	\$0.30	\$0.25
PM4	6:00 PM - 7:00 PM	\$3.25	\$0.55	\$0.45	PM4	6:00 PM - 7:00 PM	---	\$0.20	\$0.15

Note: The toll rates shown on I-25 (N-1 and S-1) are actual tolls and not per-mile toll rate.  
All Toll Rates are Shown in Future Year Dollars.



**Table 3**  
**Alternative C Per-Mile Toll Rates**  
**I-25 EXpress Toll and Managed Lanes Extension From 84th Avenue to SH 66**

**2015 Per-Mile Toll Rate (\$) By Toll Zone**

Time Period	Northbound							Time Period	Southbound						
	N-1	N-8	N-9	N-10	N-11	N-12	N-13		S-1	S-10	S-11	S-12	S-13	S-14	S-15
AM1 5:00 AM - 6:00 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM1 5:00 AM - 6:00 AM	\$0.50	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
AM2 6:00 AM - 6:45 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM2 6:00 AM - 6:45 AM	\$2.00	\$0.20	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
AM3 6:45 AM - 7:15 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM3 6:45 AM - 7:15 AM	\$4.75	\$0.40	\$0.20	\$0.15	\$0.15	\$0.10	\$0.10
AM4 7:15 AM - 8:15 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM4 7:15 AM - 8:15 AM	\$4.75	\$0.55	\$0.35	\$0.30	\$0.25	\$0.25	\$0.25
AM5 8:15 AM - 8:45 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM5 8:15 AM - 8:45 AM	\$4.75	\$0.45	\$0.20	\$0.10	\$0.05	\$0.05	\$0.05
AM6 8:45 AM - 10:00 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM6 8:45 AM - 10:00 AM	\$1.50	\$0.15	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
MD1 10:00 AM - 12:00 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	MD1 10:00 AM - 12:00 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
MD2 12:00 PM - 3:00 PM	\$0.50	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	MD2 12:00 PM - 3:00 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
PM1 3:00 PM - 3:30 PM	\$1.75	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	PM1 3:00 PM - 3:30 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
PM2 3:30 PM - 4:30 PM	\$2.50	\$0.30	\$0.15	\$0.10	\$0.10	\$0.10	\$0.10	PM2 3:30 PM - 4:30 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
PM3 4:30 PM - 6:00 PM	\$4.75	\$0.40	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	PM3 4:30 PM - 6:00 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
PM4 6:00 PM - 7:00 PM	\$1.75	\$0.10	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	PM4 6:00 PM - 7:00 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05

**2025 Per-Mile Toll Rate (\$) By Toll Zone**

Time Period	Northbound							Time Period	Southbound						
	N-1	N-8	N-9	N-10	N-11	N-12	N-13		S-1	S-10	S-11	S-12	S-13	S-14	S-15
AM1 5:00 AM - 6:00 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM1 5:00 AM - 6:00 AM	\$0.75	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
AM2 6:00 AM - 6:45 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM2 6:00 AM - 6:45 AM	\$2.75	\$0.25	\$0.15	\$0.10	\$0.10	\$0.10	\$0.10
AM3 6:45 AM - 7:15 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM3 6:45 AM - 7:15 AM	\$6.50	\$0.60	\$0.45	\$0.40	\$0.40	\$0.40	\$0.40
AM4 7:15 AM - 8:15 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM4 7:15 AM - 8:15 AM	\$6.50	\$0.80	\$0.55	\$0.50	\$0.50	\$0.45	\$0.45
AM5 8:15 AM - 8:45 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM5 8:15 AM - 8:45 AM	\$6.50	\$0.60	\$0.35	\$0.25	\$0.25	\$0.25	\$0.25
AM6 8:45 AM - 10:00 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM6 8:45 AM - 10:00 AM	\$2.00	\$0.20	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10
MD1 10:00 AM - 12:00 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	MD1 10:00 AM - 12:00 PM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
MD2 12:00 PM - 3:00 PM	\$0.75	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	MD2 12:00 PM - 3:00 PM	--	\$0.10	\$0.10	\$0.10	\$0.10	\$0.15	\$0.15
PM1 3:00 PM - 3:30 PM	\$2.50	\$0.30	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	PM1 3:00 PM - 3:30 PM	--	\$0.10	\$0.10	\$0.10	\$0.10	\$0.05	\$0.05
PM2 3:30 PM - 4:30 PM	\$3.25	\$0.55	\$0.30	\$0.30	\$0.30	\$0.30	\$0.30	PM2 3:30 PM - 4:30 PM	--	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15	\$0.15
PM3 4:30 PM - 6:00 PM	\$6.50	\$0.80	\$0.50	\$0.45	\$0.45	\$0.45	\$0.45	PM3 4:30 PM - 6:00 PM	--	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20
PM4 6:00 PM - 7:00 PM	\$2.50	\$0.30	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	PM4 6:00 PM - 7:00 PM	--	\$0.10	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05

**2035 Per-Mile Toll Rate (\$) By Toll Zone**

Time Period	Northbound							Time Period	Southbound						
	N-1	N-8	N-9	N-10	N-11	N-12	N-13		S-1	S-10	S-11	S-12	S-13	S-14	S-15
AM1 5:00 AM - 6:00 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM1 5:00 AM - 6:00 AM	\$1.00	\$0.10	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05
AM2 6:00 AM - 6:45 AM	--	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	AM2 6:00 AM - 6:45 AM	\$3.75	\$0.40	\$0.35	\$0.35	\$0.35	\$0.35	\$0.35
AM3 6:45 AM - 7:15 AM	--	\$0.10	\$0.10	\$0.15	\$0.15	\$0.15	\$0.15	AM3 6:45 AM - 7:15 AM	\$8.75	\$1.20	\$1.80	\$0.80	\$0.80	\$0.80	\$0.80
AM4 7:15 AM - 8:15 AM	--	\$0.15	\$0.15	\$0.20	\$0.20	\$0.20	\$0.20	AM4 7:15 AM - 8:15 AM	\$8.75	\$1.40	\$1.20	\$1.20	\$1.20	\$1.20	\$1.20
AM5 8:15 AM - 8:45 AM	--	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	AM5 8:15 AM - 8:45 AM	\$8.75	\$1.00	\$0.60	\$0.60	\$0.60	\$0.55	\$0.55
AM6 8:45 AM - 10:00 AM	--	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	AM6 8:45 AM - 10:00 AM	\$2.75	\$0.30	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25
MD1 10:00 AM - 12:00 PM	--	\$0.15	\$0.20	\$0.20	\$0.20	\$0.20	\$0.20	MD1 10:00 AM - 12:00 PM	--	\$0.20	\$0.20	\$0.25	\$0.30	\$0.30	\$0.30
MD2 12:00 PM - 3:00 PM	\$1.00	\$0.30	\$0.30	\$0.35	\$0.35	\$0.35	\$0.35	MD2 12:00 PM - 3:00 PM	--	\$0.30	\$0.35	\$0.35	\$0.35	\$0.40	\$0.40
PM1 3:00 PM - 3:30 PM	\$3.25	\$0.60	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55	PM1 3:00 PM - 3:30 PM	--	\$0.30	\$0.30	\$0.30	\$0.30	\$0.30	\$0.30
PM2 3:30 PM - 4:30 PM	\$4.50	\$1.00	\$0.80	\$0.80	\$0.80	\$0.80	\$0.80	PM2 3:30 PM - 4:30 PM	--	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
PM3 4:30 PM - 6:00 PM	\$8.75	\$1.40	\$1.00	\$0.80	\$0.80	\$0.80	\$0.80	PM3 4:30 PM - 6:00 PM	--	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
PM4 6:00 PM - 7:00 PM	\$3.25	\$0.55	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	PM4 6:00 PM - 7:00 PM	--	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25	\$0.25

Note: The toll rates shown on I-25 (N-1 and S-1) are actual tolls and not per-mile toll rate.  
 All Toll Rates are Shown in Future Year Dollars.

#### I-25 MANAGED LANE EXTENSION ALTERNATIVE B

In 2015, toll rates in the AM peak period range from \$0.10 to \$0.50 per mile depending on the tolling zone to optimize revenue. During the PM peak period rates range from \$0.10 to \$0.40 per mile to optimize revenue. Generally speaking, toll rates in the shoulder periods surrounding the peak periods are lower than the peaks. Off-peak periods tend to be significantly lower at around \$0.05 per mile.

By 2025, optimum toll rates in the AM peak period have increased to manage demand in the managed lanes and range between \$0.20 and \$0.80 per mile depending on the tolling zone and travel direction. During the PM peak period, rates also range from \$0.20 to \$0.80 per mile to optimize revenue and manage demand.

By 2035, toll rates selected to maximize revenue during the AM and PM peak periods increase considerably, resulting in per-mile rates between \$0.30 and \$1.40 during the AM peak period and between \$0.45 and \$1.40 during the PM peak period, again depending on direction and tolling zone.

#### I-25 MANAGED LANE EXTENSION ALTERNATIVE C

In 2015, toll rates in the AM peak period range from \$0.05 to \$0.55 per mile depending on the tolling zone to optimize revenue. During the PM peak period rates range from \$0.10 to \$0.40 per mile to optimize revenue. Generally speaking, toll rates in the shoulder periods surrounding the peak periods are lower than the peaks. Off-peak periods tend to be significantly lower at around \$0.05 per mile.

By 2025, optimum toll rates in the AM peak period have increased to manage demand in the managed lanes and range between \$0.25 and \$0.80 per mile depending on the tolling zone and travel direction. During the PM peak period, rates range from \$0.20 to \$0.80 per mile to optimize revenue and manage demand.

By 2035, toll rates selected to maximize revenue during the AM and PM peak periods increase considerably, resulting in per-mile rates between \$0.55 and \$1.40 during the both the AM and PM peak periods, again depending on direction and tolling zone. The conversion of one GP lane per direction into a managed lane results in per-mile rates remaining consistently high across all tolling zones in the peak travel direction. This likely results from the increasing traffic demand in the corridor, producing travel time savings in the managed lanes versus the GP lanes for which motorists are willing to pay.

## ESTIMATED ANNUAL TOLLED TRAFFIC AND REVENUE

Estimated average weekday transactions and revenue from the traffic assignments were “annualized” by using an annualization factor of 267 equivalent weekdays per year for tolled transactions and revenue. This recognizes the fact that weekend day traffic and revenue on the managed lane alternatives would likely be considerably lower. This annualization factor was



estimated following a review of the year 2010, I-25 Tolloed Express Lanes actual daily traffic volumes.

Estimated annual tolled trips and annual gross toll revenue for Alternatives A, B and C are provided in Tables 4 through 6, respectively. All revenue estimates presented are in future dollars.

**Table 4**  
**Estimated Annual Traffic and Gross Toll Revenue - Alternative A**  
**North I-25 Express Toll Lanes Extension - 84th Avenue to 120th Avenue**  
**HOV 2+ Toll-Free**

Year	Annual Traffic Volume (Tolled Trips)	Annual Gross Toll Revenue (No Ramp-Up)	Average Toll
<b>2015</b>	<b>547,000</b>	<b>\$ 360,000</b>	<b>\$ 0.66</b>
2016	1,147,000	790,000	0.69
2017	1,226,000	885,000	0.72
2018	1,311,000	991,000	0.76
2019	1,402,000	1,110,000	0.79
2020	1,499,000	1,243,000	0.83
2021	1,603,000	1,392,000	0.87
2022	1,714,000	1,559,000	0.91
2023	1,833,000	1,746,000	0.95
2024	1,960,000	1,956,000	1.00
<b>2025</b>	<b>2,097,000</b>	<b>2,193,000</b>	<b>1.05</b>
2026	2,174,000	2,388,000	1.10
2027	2,253,000	2,600,000	1.15
2028	2,335,000	2,831,000	1.21
2029	2,420,000	3,083,000	1.27
2030	2,508,000	3,357,000	1.34
2031	2,600,000	3,656,000	1.41
2032	2,695,000	3,981,000	1.48
2033	2,794,000	4,335,000	1.55
2034	2,896,000	4,721,000	1.63
<b>2035</b>	<b>3,003,000</b>	<b>5,142,000</b>	<b>1.71</b>

Note: All toll revenue is calculated in future dollars. Year 2015 estimates reflect traffic and revenue from July 1 through December 31, 2015 (51 percent of annual traffic and revenue).

**Table 5**  
**Estimated Annual Traffic and Gross Toll Revenue - Alternative B**  
**North I-25 Express Toll Lanes Extension - 84th Avenue to SH 7**  
**HOV 2+ Toll-Free**

Year	Annual Traffic Volume (Tolled Trips)	Annual Gross Toll	
		Revenue (No Ramp-Up)	Average Toll
<b>2015</b>	<b>883,830</b>	<b>\$ 651,000</b>	<b>\$ 0.74</b>
2016	1,854,000	1,418,000	0.76
2017	1,983,000	1,574,000	0.79
2018	2,121,000	1,747,000	0.82
2019	2,269,000	1,939,000	0.85
2020	2,427,000	2,152,000	0.89
2021	2,596,000	2,389,000	0.92
2022	2,777,000	2,652,000	0.95
2023	2,971,000	2,944,000	0.99
2024	3,178,000	3,268,000	1.03
<b>2025</b>	<b>3,399,000</b>	<b>3,628,000</b>	<b>1.07</b>
2026	3,462,000	3,993,000	1.15
2027	3,526,000	4,394,000	1.25
2028	3,592,000	4,836,000	1.35
2029	3,659,000	5,322,000	1.45
2030	3,727,000	5,857,000	1.57
2031	3,796,000	6,446,000	1.70
2032	3,867,000	7,094,000	1.83
2033	3,939,000	7,807,000	1.98
2034	4,012,000	8,592,000	2.14
<b>2035</b>	<b>4,088,000</b>	<b>9,452,000</b>	<b>2.31</b>

Note: All toll revenue is calculated in future dollars. Year 2015 estimates reflect traffic and revenue from July 1 through December 31, 2015 (51 percent of annual traffic and revenue).

**Table 6**  
**Estimated Annual Traffic and Gross Toll Revenue - Alternative C**  
**North I-25 Express Toll Lanes Extension - 84th Avenue to SH 66**  
**HOV 2+ Toll-Free**

<u>Year</u>	<u>Annual Traffic Volume (Tolled Trips)</u>	<u>Annual Gross Toll Revenue (No Ramp-Up)</u>	<u>Average Toll</u>
<b>2015</b>	<b>902,700</b>	<b>\$ 795,000</b>	<b>\$ 0.88</b>
2016	1,921,000	1,857,000	0.97
2017	2,085,000	2,212,000	1.06
2018	2,263,000	2,635,000	1.16
2019	2,456,000	3,139,000	1.28
2020	2,665,000	3,739,000	1.40
2021	2,892,000	4,454,000	1.54
2022	3,138,000	5,305,000	1.69
2023	3,405,000	6,319,000	1.86
2024	3,695,000	7,527,000	2.04
<b>2025</b>	<b>4,008,000</b>	<b>8,966,000</b>	<b>2.24</b>
2026	4,154,000	10,399,000	2.50
2027	4,305,000	12,061,000	2.80
2028	4,462,000	13,989,000	3.14
2029	4,624,000	16,225,000	3.51
2030	4,792,000	18,819,000	3.93
2031	4,966,000	21,828,000	4.40
2032	5,147,000	25,318,000	4.92
2033	5,334,000	29,366,000	5.51
2034	5,528,000	34,061,000	6.16
<b>2035</b>	<b>5,731,000</b>	<b>39,509,000</b>	<b>6.89</b>

Note: All toll revenue is calculated in future dollars. Year 2015 estimates reflect traffic and revenue from July 1 through December 31, 2015 (51 percent of annual traffic and revenue).