

## 1. Traffic Count Balancing Methodology

1. The raw 3-day data was consolidated and averaged to provide a single 24-hour average weekday daily traffic (AWDT) count. Heavy vehicle percentages were also tabulated for a daily basis.
2. I-264 and I-64 corridor counts were analyzed to determine system-wide AM and PM peak hours; it was determined that the AM peak hour covered 7:30 – 8:30 AM, and the PM peak hour covered 4:30 – 5:30 PM. The peak hour volumes were then tabulated from the 15-minute periods that constituted each peak hour, respectively.
3. The I-264 corridor counts were decided on as being the most important counts, and to hold these volumes steady as well as possible. Next, ramp movements carried the most importance, and finally arterial volumes and turning movement counts at arterial intersections.
4. Holding I-264 mainline counts steady, interchange ramp volumes to and from the interstate were added and subtracted as the entered and exited the system, respectively. Where imbalances existed, the difference was applied to each ramp volume in a ratio equal to its addition or subtraction from the system. By adjusting each ramp by its respective ratio, each ramp's overall contribution changed, but the percent difference was held constant.
5. Where no interstate counts existed, several possibilities existed:
  - a. Where the volumes were open ended, with no further counts or interstates down the mainline, the ramp volumes were assumed to be correct, and were simply added/subtracted from the next adjacent mainline count to determine upstream/downstream volumes.
  - b. When the volumes ran into a required count (i.e., at Parks Avenue), the turning movement counts at the interstate termini were taken as the mainline volumes and any intermediate interchanges were adjusted per step 5.
6. In several locations, no ramp volumes were counted; at these locations, the ramps terminated or originated from an arterial intersection leg. The ramp volumes were then simply calculated from the turning movement count.
7. I-264 was decided as being the most important interstate in the study area; therefore I-64 counts were adjusted to match I-264 mainline and ramp volumes.
8. Once all mainline and ramp counts were tabulated, arterials were analyzed. At those locations where ramp volumes interacted with intersections, the volumes related to the ramps were held constant. Keeping the ramp legs of arterial intersections steady, the remaining turning movement counts in each direction of the arterials were adjusted to achieve a system balance. Unlike the ramp volumes, which essentially operated in a closed system between mainline counts, the turning movement counts were unable to be adjusted simply based on ratios of volumes; therefore, engineering judgment was used to adjust and balance these volumes.
9. Lastly, once all mainline, ramp, and turning movement volumes were balanced, a seasonal adjustment factor was applied to the system. The adjustment factor was calculated by comparing the month the majority of the counts were taken, December, to the ratio of the

December to the average annual counts at a VDOT continuous count station between Witchduck Road and Independence Boulevard. The seasonal factor applied to the balanced counts was 1.03.

## 2. Design-Year No-Build & Build Traffic Growth and Balancing

Methods from the *National Cooperative Highway Research Program Report 765: Analytical Travel Forecasting Approaches for Project-Level Planning and Design* were used to evaluate future-year traffic volumes. The Hampton Roads Travel Demand Model (Year 2034) was used as the primary tool for forecasting future-year traffic volumes. **Tables 2.1 – 2.5** display the growth rates used in the No-Build traffic volume projections. **Tables 2.6 – 2.10** display the growth rates used in the Build traffic volume projections. **Table 2.11** displays the growth rates used in the Build Split Rosemont Alternative. The design year for this project is 2040, so the 2034 growth rates were straight-line extrapolated to attain 2040 multipliers. Each freeway segment of I-264 between interchanges received its own growth rate, as well as arterials on either side of I-264; this then meant that freeway volumes on either side of an interchange were no longer in balance.

To find a balanced volume, the freeway volumes on either side of an interchange were multiplied per their respective growth rates. Then, the TurnsW32 program was utilized to find balanced interchange volumes: TurnsW32 uses existing turning movement counts and future-year approach and departure volumes in an attempt to find future-year turning movement counts. An interchange can be thought of as an elaborate intersection, with the various ramp movements operating as left or right turns; using this technique, each interchange was analyzed and baseline future-year ramp and mainline volumes were established.

However, using this technique resulted in freeway approach and departure volumes that varied from interchange to interchange. To finalize the future-year I-264 volumes, the mainline approach and departure results of two adjacent interchanges were averaged. Then, once mainline volumes had been set, the ramp movements from the initial run of TurnsW32 were rebalanced using the existing conditions balancing technique. In a few locations, to accommodate varying growth rates, some ramp volumes actually decreased from their current counts; to be conservative, all ramp volumes were held to their current counts as a floor. Arterial turning movements were all multiplied per their individual growth rates, and arterial corridors were then balanced using the existing conditions balancing technique.

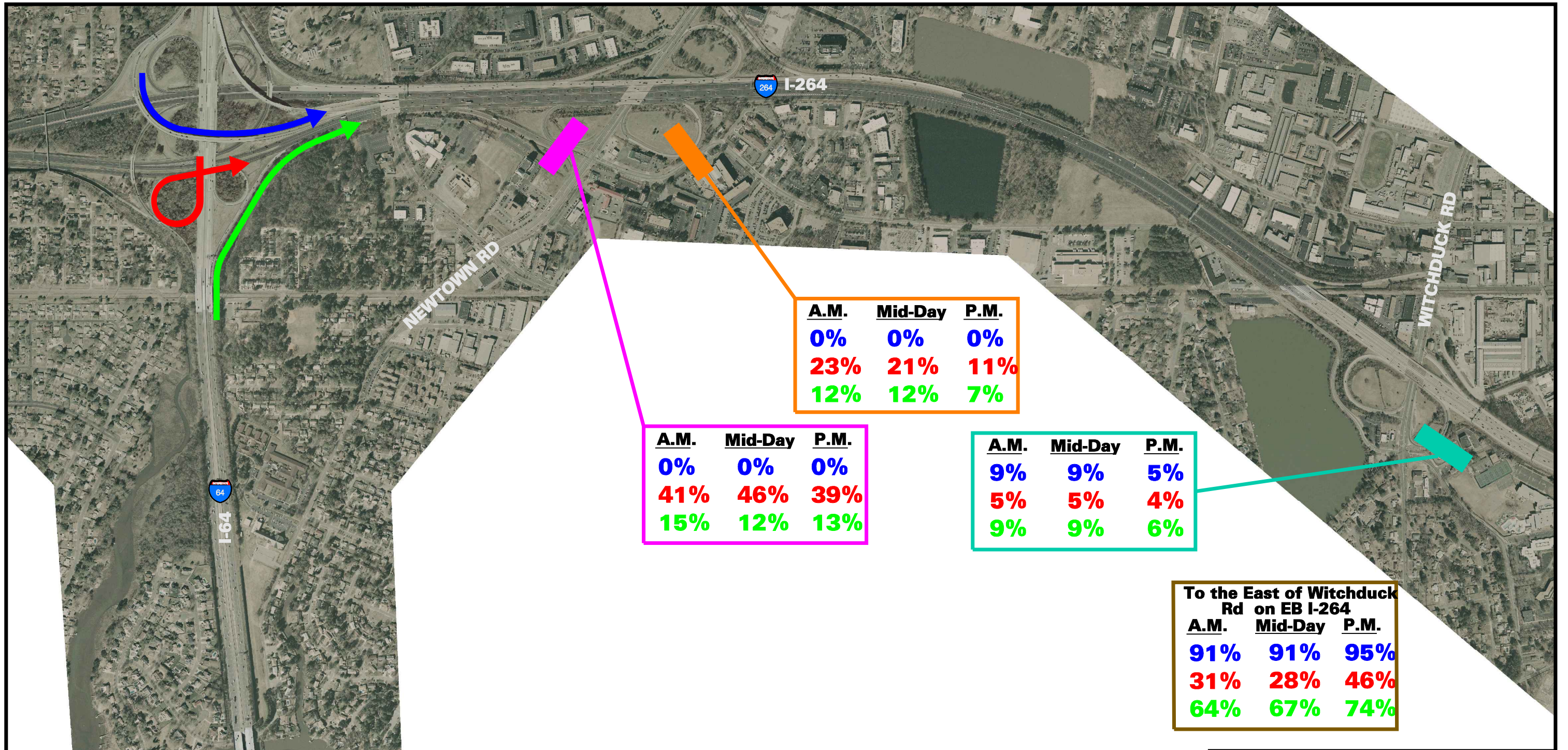
The No-Build Conditions include modifications to the I-64 westbound to I-264 eastbound CD-system ramp, as well as ramp modifications at Newtown Road and Witchduck Road. These changes also include modification of Greenwich Road between Newtown Road and Witchduck Road. Traffic volumes in these areas were reassigned based on origin-destination patterns utilized in the 2011 I-64/I-264 Interchange Modification Report. **Figure D.1** summarizes the 2011 I-64/I-264 O-D survey.

**Appendix E** displays the design-year no-build peak period volumes for ramps, crossroads, and freeway segments in the study area.

**Appendix F** displays the design-year build peak period volumes for ramps, crossroads, and freeway segments in the study area.

Definitions for terms in the header rows in **Tables 2.1 – 2.11** are as follows:



- “Node” – a distinct point at the end of a road segment. Two nodes define a unique road segment in the travel demand model.
- “AWDT” – **A**verage **W**eekday **D**aily **T**raffic
- “HOV” – **H**igh **O**ccupancy **V**ehicle. The travel demand model has specific links that define the HOV lanes.
- “AAWDT” – **A**verage **A**nnual **W**eekday **D**aily **T**raffic
- “2009 Baseline Model ADT” – 2009 is the base year to which the travel demand model is calibrated based on average daily traffic.
- “Model” – Traffic volumes derived from the travel demand model are described as “Model”.
- “RATIO” – this is the ratio comparison of model traffic volumes to actual traffic counts.
- “DIFF” – this is the difference comparison of model traffic volumes to actual traffic counts.
- “2034 Adjusted Forecast” – this is the value of traffic volumes after the raw travel demand volumes have been adjusted by an average of the “RATIO” and “DIFF” methods.
- “HRTPO LRTP” – This is the volume derived from the **H**ampton **R**oads **T**ransportation **P**lanning **O**rganization’s **L**ong **R**ange **T**ransportation **P**lan.
- “Growth Factor” – This is a ratio of one year’s volume to another year’s volume (i.e. 2500/2000 = 1.25)
- “Growth Rate” – This is a straight-line annual growth rate.





**LEGEND**

- ↗ EB I-64 to EB I-264 Mainline - Ramp D 11 (No access to Newtown Road)
- ↗ WB I-64 to EB I-264 C/D - Ramp D-8
- ↗ EB I-64 to EB I-264 C/D - Ramp D-7

I-64 / I-264 Interchange Modification Report

Origin-Destination Survey Results  
A.M., Mid-Day and P.M. Peak Hours

Figure D.1	July 2009 (Revised June 2011)
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**Table 2.1**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2040 NO BUILD ALTERNATIVE																						
		SOV & Concurrent HOV				Restricted HOV				2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2034 Model Raw Forecast	RATIO (2009 AAWDT /VT09) * 2034 Model Raw Forecast	DIFF (2009 AAWDT - VT09) + 2034 Model Raw Forecast	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO L RTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	2009-2040 Growth Factor	Year 2040 Total Two-Way Volume	Average of Bi-Directional Growth Rate	2034-2040 Growth Factor	Average 2-Way 2009-2034 Growth Factor	2014-2040 Growth Factor		
		A Node	B Node	2009 AAWDT	VT09	A Node HOV	B Node HOV	2009 AAWDT	VT09																							
<b>I-264</b>																																
Ballentine Blvd Military Hwy	EB - SOV	24,971	27,308	46,657	48,744					66,000	62,000	64,001	65,941	2,087	49,446	47,329	47,359	47,344		65,000	65,000											
	EB - HOV	24,971	28,065	17,344	17,197									-147	17,272	17,420	17,419	17,419				1.016	0.062%									
	WB - HOV	28,066	24,975	17,281	16,023					62,000	61,000	64,001	63,406	-1,258	16,358	17,642	17,616	17,629		65,000	65,000				1.019	130,000	135,000	0.062%	0.004	1.016	1.016	
	WB-SOV	27,309	24,975	46,720	47,383									663	48,405	47,728	47,742	47,735				1.016	0.062%									
Military Hwy I-64	EB-CD	27,331	27,340	30,190	18,002					29,000	28,000	30,190	18,002	-12,188	20,280	30,814	30,562	30,688	31,000													
	EB-ML	27,308	27,343	33,184	35,021					42,000	41,000	44,584	47,052	1,837	33,858	32,511	32,474	32,492	44,000			1.003	0.012%									
	EB - HOV	28,067	27,343	11,400	12,031									631	10,784	11,820	11,843	11,831						1.002	147,000	186,000	0.006%	0.000	1.002	1.002		
	WB - HOV	28,068	27,309	9,685	14,023					31,000	31,000	31,184	45,154	4,338	13,603	9,356	9,209	9,282	31,000			1.000	0.000%									
	WB-ML	27,367	27,309	21,500	31,131									9,631	30,931	21,451	21,429	21,440		72,000												
	WB-CD	27,349	27,344	41,283	17,210					41,000	41,000	41,283	17,210	-24,073	15,019	40,784	41,075	40,929	41,000													
I-64 Newtown Rd	EB-CD	27,634	27,360	32,490	26,061							32,490	26,061	-6,429	35,349	49,725	46,315	48,020	48,000													
	EB-ML	27,365	27,374	65,529	60,326					98,000	98,000		79,168	-5,203	75,439	60,402	60,809	60,605	82,000			1.164	0.657%									
	EB - HOV	28,069	27,374	20,467	18,842									-1,625	15,896	21,154	21,099	21,126						1.117	283,000	263,000	0.581%	0.035	1.145	1.151		
	WB - HOV	38,562	27,371	5,795	7,243									1,448	15,551	12,441	14,103	25,538	76,000													
	WB-ML	35,836	27,371	49,662	62,076					102,000	100,000		69,319	12,414	57,568	45,569	44,545	50,466		153,000			1.126	0.505%								
	WB-CD	27,378	27,377	66,533	40,406									66,533	40,406	-26,127	48,452	79,781	74,579	77,000												
Newtown Rd Witchduck Rd	EB - SOV	35,842	35,804	75,272	73,233					98,000	98,000	99,879	98,692	-2,039	96,327	99,009	98,366	98,687	115,000			1.151	0.606%									
	EB - HOV	35,842	38,565	24,607	25,459									852	16,819	16,256	15,967	16,112						1.150	230,000	234,000	0.484%	0.029	1.121	1.126		
	WB - HOV	35,836	38,562	17,361	7,243					102,000	100,000	105,435	99,938	-10,118	15,420		25,538	25,538	115,000			1.091	0.363%									
	WB-ML	35,836	27,371	54,706	62,076									7,370	57,568	50,733	50,198	50,466														
	WB-CD	35,836	35,847	33,368	30,619									-2,749	35,544	38,735	38,293	38,514														
Witchduck Rd Independence Blvd	EB - SOV	35,747	35,711	73,603	65,341					97,000	99,000	97,998	92,582	-8,262	74,413	83,822	82,675	83,249	111,000			1.133	0.531%									
	EB - HOV	35,747	38,572	22,484	24,172	35,747	38,573	1,911	3,069					530	29,241	27,199	27,553	27,376						1.139	218,000	216,000	0.450%	0.027	1.112	1.117		
	WB - HOV	38,575	35,736	21,532	22,768	38,574	35,736	1,495	2,156	99,000	100,000	97,968	95,867	575	27,342	25,858	26,106	25,982	107,000			1.092	0.369%									
	WB-SOV	35,712	35,736	74,941	70,943									-3,998	76,599	80,916	80,597	80,756														

**Table 2.2**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 NO BUILD ALTERNATIVE															
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009 AAWDT /VT09) * 2034 Model Raw Forecast	DIFF (2009 AAWDT - VT09) + 2034 Model Raw Forecast	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO L RTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	2009-2040 Growth Factor	Year 2040 Total Two-Way Volume	Average of Bi-Directional Growth Rate	2034-2040 Growth Factor	Average 2-Way 2009-2034 Growth Factor	2014-2040 Growth Factor
		A Node	B Node	2009 AAWDT	VT09	A Node HOV	B Node HOV	2009 AAWDT	VT09																					
Independence Blvd Rosemont Rd	EB - SOV	35,699	37,464	60,282	61,834					82,000	80,000	80,083	82,145	1,552	65,236	63,598	63,684	63,641	87,000	87,000	172,000	165,000	1.086	0.346%	1.119	176,000	0.385%	0.023	1.096	1.100
	EB - HOV	38,590	37,464	19,801	18,173	38,591	37,464		2,138					-3,766	21,410	23,328	23,038	23,183												
	WB - HOV	37,480	38,589	17,459	18,685	37,480	38,588		1,552	77,000	77,000	76,830	82,225	-326	22,321	20,856	21,095	20,976	85,000	85,000			1.106	0.425%						
	WB-SOV	37,480	35,701	59,371	61,988									2,617	66,650	63,836	64,033	63,934												
Rosemont Road Lynnhaven Parkway	EB - SOV	37,522	37,472	49,935	50,143					71,000	63,000	72,331	72,632	208	59,045	58,800	58,837	58,819	81,000	81,000	165,000	157,000	1.120	0.479%	1.178	170,000	0.575%	0.034	1.144	1.149
	EB - HOV	37,522	38,597	22,396	22,489									93	22,537	22,444	22,444	22,444												
	WB - HOV	38,596	37,527	21,659	20,334					72,000	71,000	71,942	67,542	-1,325	21,539	22,942	22,864	22,903	84,000	84,000			1.168	0.670%						
	WB-SOV	37,476	37,527	50,283	47,208									-3,075	57,754	61,516	60,829	61,173												
Lynnhaven Pkwy Laskin Rd	EB - SOV	37,469	41,375	42,616	41,977					62,000	55,000	58,781	62,500	-639	45,331	46,021	45,970	45,996	62,000	62,000	123,000	140,000	1.055	0.219%	1.057	124,000	0.185%	0.011	1.046	1.048
	EB - HOV	37,469	38,604	16,165	20,523									4,358	20,711	16,313	16,353	16,333												
	WB - HOV	38,603	37,481	15,116	20,548					56,000	56,000	58,781	62,392	5,432	19,468	14,322	14,036	14,179	61,000	61,000			1.038	0.151%						
	WB-SOV	41,374	37,481	43,665	41,844									-1,821	44,450	46,384	46,271	46,328												
Laskin Road First Colonial Road	EB - SOV	37,644	37,764	24,884	34,424					36,000	32,000	35,039	48,471	9,540	40,387	29,195	30,847	30,021	41,000	41,000	83,000	92,000	1.170	0.681%	1.135	85,000	0.436%	0.026	1.109	1.113
	EB - HOV	38,606	37,764	10,154	14,047									3,893	14,530	10,503	10,637	10,570												
	WB - HOV	37,779	38,605	11,781	14,277					40,000	40,000	40,077	48,567	2,496	13,034	10,756	10,538	10,647	42,000	42,000			1.048	0.192%						
	WB-SOV	37,779	37,657	28,296	34,290									5,994	37,999	31,356	32,005	31,681												
First Colonial Road Birdneck Road	EB - SOV	37,831	37,846	19,647	24,096					30,000	27,000	28,605	36,793	4,449	26,694	21,987	22,517	22,252	33,000	33,000	65,000	72,000	1.154	0.615%	1.138	67,000	0.446%	0.027	1.112	1.116
	EB - HOV	37,831	37,846	10,353	12,697									2,344	13,425	10,437	10,456	10,446												
	WB - HOV	38,610	37,841	10,150	13,343					30,000	30,000	29,919	39,439	3,193	13,776	10,394	10,471	10,432	32,000	32,000			1.070	0.278%						
	WB-SOV	37,850	37,841	19,850	26,096									6,246	27,882	20,984	21,340	21,162												
Birdneck Rd Parks Ave	EB	37,846	37,875	14,487	19,379					16,000	14,000	14,487	19,379	4,892	20,795	15,546	15,903	15,724	16,000	16,000	32,000	33,000	1.104	0.418%	1.130	33,000	0.418%	0.025	1.104	1.109
	WB	37,898	37,859	14,487	21,298					13,000	13,000	14,487	21,298	6,811	23,189	15,773	16,378	16,076	16,000											

**Table 2.3**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 NO BUILD ALTERNATIVE Includes HRTAC Funded Improvements															
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009 AAWDT /VT09) * 2034 Model Raw Forecast	DIFF (2009 AAWDT - VT09) + 2034 Model Raw Forecast	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO L RTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	2009-2040 Growth Factor	Year 2040 Total Two-Way Volume	Average of Bi-Directional Growth Rate	2034-2040 Growth Factor	Average 2-Way 2009-2034 Growth Factor	2014-2040 Growth Factor
		A Node	B Node	2009 AAWDT	VT09	A Node HOV	B Node HOV	2009 AAWDT	VT09																					
<b>I-64</b>																														
Northampton Blvd I-264	EB	27,648	27,444	78,556	48,520					79,000	75,000	78,556	48,520	-30,036	55,460	89,792	85,496	87,644	88,000	110,000	205,000	185,000	1.182	0.729%	1.160	210,000	0.517%	0.031	1.129	1.134
	Reversible HOV-EB	27,424	27,649	14,483	12,039					23,000	26,000	14,483	12,039	-2,444	18,763	22,573	21,207	21,890	22,000											
	Reversible HOV-WB	27,649	27,424	7,029	13,975							7,029	13,975	6,946	15,155	7,622	8,209	7,916	8,000	95,000	1.076	0.305%								
	WB	27,443	27,627	81,235	56,549					85,000	86,000	81,235	56,549	-24,686	61,688	88,618	86,374	87,496	87,000											
I-264 Indian River Rd	EB - SOV	35,620	35,405	55,709	42,864					80,000	74,000	76,394	57,549	-18,845	55,844	72,579	68,689	70,634	98,000	98,000	200,000	160,000	1.283	1.131%	1.383	211,000	1.236%	0.074	1.309	1.321
	EB - HOV	35,620	38,621	20,685	14,685							20,159	28,396	26,159	27,277															
	WB - HOV	38,622	35,623	17,708	15,046							21,151	24,893	23,813	24,353					102,000	102,000	1.335	1.341%							
	WB-SOV	35,386	35,623	58,686	41,301					73,000	72,000	76,394	56,347	-20,047	57,356	81,499	74,741	78,120												
<b>Military Highway</b>																														
Virginia Beach CL I-264	NB	35,665	27,233	24,348	31,814							24,348			41,652	31,877	34,186	33,032	33,000	66,000	60,000	1.355	1.421%	1.441	70,000	1.421%	0.085	1.355	1.370	
	SB	27,235	35,628	24,348	31,279							24,348			40,578	31,586	33,647	32,617	33,000	33,000										
I-264 Poplar Hall Dr	NB	27,335	27,389	25,239	32,150							25,239			39,635	31,115	32,724	31,920	32,000	32,000	66,000	63,000	1.308	1.230%	1.381	70,000	1.230%	0.074	1.308	1.320
	SB	27,390	23,352	25,239	31,325							25,239			40,845	32,909	34,759	33,834	34,000	34,000										
<b>Newtown Road</b>																														
Princess Anne Rd I-264	NB	35,775	27,347	15,459	13,463							15,459	13,463	-1,996	15,237	17,496	17,233	17,365	17,000	17,000	35,000	40,000	1.132	0.529%	1.164	36,000	0.529%	0.032	1.132	1.137
	SB	27,333	27,316	15,456	12,613							15,456	12,613	-2,843	15,253	18,691	18,096	18,394	18,000	18,000										
I-264 Cleveland St	NB	27,472	27,479	18,918	13,446							18,918	13,446	18,918	17,215	24,221	22,687	23,454	23,000	23,000	44,000	50,000	1.198	0.792%	1.246	46,000	0.792%	0.048	1.198	1.206
	SB	27,477	27,474	17,808	14,392							17,808	14,392	17,808	16,916	20,931	20,332	20,632	21,000	21,000										
<b>Greenwich Road</b>																														
Newtown Rd Witchduck Rd	EB	35,785	35,784	3,584	2,369							3,584	2,369	-1,215	2,077	3,142	3,292	3,217	3,000	3,000	10,000	N/A	1.395	1.580%	1.490	11,000	1.580%	0.095	1.395	1.411
	WB	35,784	35,785	3,584	2,582							3,584	2,582	-1,002	5,085	7,058	6,087	6,573	7,000	7,000										
<b>Witchduck Road</b>																														
Bonney Rd I-264	NB	35,637	35,660	12,965	19,150							12,965	19,150	6,185	24,641	16,683	18,456	17,569	18,000	18,000	37,000	43,000	1.392	1.569%	1.486	40,000	1.569%	0.094	1.392	1.408
	SB	35,659	35,638	13,613	20,990							13,613	20,990	7,377	27,811	18,037	20,434	19,235	19,000	19,000										
I-264 Cleveland St	NB	35,768	35,787	19,288	20,119							19,288	20,119	831	30,247	28,998	29,416	29,207	29,000	29,000	56,000	64,000	1.452	1.807%	1.560	60,000	1.807%	0.108	1.452	1.470
	SB	35,786	35,770	19,288	20,132							19,288	20,132	844	28,514	27,319	27,670	27,494	27,000	27,000										

**Table 2.4**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 NO BUILD ALTERNATIVE Includes HRTAC Funded Improvements															
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009 AAWDT /VT09) * 2034 Model Raw Forecast	DIFF (2009 AAWDT - VT09) + 2034 Model Raw Forecast	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO L RTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	2009-2040 Growth Factor	Year 2040 Total Two-Way Volume	Average of Bi-Directional Growth Rate	2034-2040 Growth Factor	Average 2-Way 2009-2034 Growth Factor	2014-2040 Growth Factor
		A Node	B Node	2009 AAWDT	VT09	A Node HOV	B Node HOV	2009 AAWDT	VT09																					
<b>Independence Blvd</b>																														
South of I-264 EB Off-Ramp	NB	35,613	35,630	42,178	32,237						42,178	32,237	-9,941	34,893	45,653	44,834	45,244	45,000	45,000	94,000	80,000	1.114	0.457%	1.142	96,000	0.457%	0.027	1.114	1.119	
	SB	35,626	35,611	42,178	32,934						42,178	32,934	-9,244	38,624	49,465	47,868	48,667	49,000	49,000											
I-264 North of Bonney Rd	NB	35,749	35,769	42,186	34,369						42,186	34,369	-7,817	39,658	48,678	47,475	48,076	48,000	48,000	94,000	87,000	1.114	0.456%	1.142	96,000	0.456%	0.027	1.114	1.119	
	SB	35,771	35,775	42,186	37,067						42,186	37,067	-5,119	40,347	45,919	45,466	45,692	46,000	46,000											
<b>Rosemont Road</b>																														
South Plaza Tri Chester St/Sentara Way	NB	37,383	37,425	17,490	21,744						17,490	21,744	4,254	31,868	25,633	27,614	26,624	27,000	27,000	52,000	53,000	1.487	1.946%	1.603	56,000	1.946%	0.117	1.487	1.506	
	SB	37,423	37,382	17,490	20,740						17,490	20,740	3,250	29,168	24,597	25,918	25,258	25,000	25,000											
I-264 Virginia Beach Blvd	NB	37,535	37,558	17,243	23,382						17,243	23,382	6,139	31,843	23,483	25,704	24,593	25,000	25,000	47,000	53,000	1.363	1.451%	1.450	50,000	1.451%	0.087	1.363	1.377	
	SB	37,558	37,536	17,243	28,056						17,243	28,056	10,813	34,100	20,958	23,287	22,122	22,000	22,000											
<b>Lynnhaven Parkway</b>																														
Lynnhaven Pkwy I-264	NB	37,427	37,440	24,627	29,086						24,627	29,086	4,459	31,873	26,987	27,414	27,200	27,000	27,000	51,000	76,000	1.035	0.142%	1.044	51,000	0.142%	0.009	1.035	1.037	
	SB	37,442	37,426	24,627	32,290						24,627	32,290	7,663	31,136	23,747	23,473	23,610	24,000	24,000											
I-264 Dean Dr	NB	37,525	37,554	13,442	16,174						13,442	16,174	2,733	12,363	10,274	9,631	9,952	10,000	10,000	22,000	23,000	1.000	0.000%	1.000	27,000	0.000%	0.000	1.000	1.000	
	SB	37,553	37,524	13,442	15,516						13,442	15,516	2,075	14,064	12,184	11,990	12,087	12,000	12,000											
<b>London Bridge Road</b>																														
Potters Rd I-264	NB	37,493	37,556	13,048	10,679						13,048	10,679	-2,369	15,735	19,225	18,104	18,664	19,000	19,000	39,000	40,000	1.495	1.978%	1.613	42,000	1.978%	0.119	1.495	1.514	
	SB	37,556	37,493	13,048	9,937						13,048	9,937	-3,111	15,796	20,740	18,907	19,823	20,000	20,000											
I-264 Virginia Beach Blvd	NB	37,572	37,648	14,627	10,777						14,627	10,777	-3,850	17,338	23,531	21,188	22,359	22,000	22,000	44,000	52,000	1.504	2.016%	1.625	48,000	2.016%	0.121	1.504	1.524	
	SB	37,648	37,572	14,627	10,036						14,627	10,036	-4,591	16,362	23,846	20,953	22,399	22,000	22,000											
<b>First Colonial Road</b>																														
Virginia Beach Blvd I-264	NB	41,217	37,767	15,363	15,636						15,363	15,636	273	18,110	17,794	17,837	17,815	18,000	18,000	35,000	41,000	1.139	0.556%	1.172	36,000	0.556%	0.033	1.139	1.145	
	SB	37,768	41,218	15,363	18,701						15,363	18,701	3,338	20,909	17,177	17,571	17,374	17,000	17,000											
I-264 Laskin Rd	NB	37,877	37,907	18,822	17,419						18,822	17,419	-1,403	19,834	21,432	21,237	21,334	21,000	21,000	40,000	56,000	1.132	0.527%	1.163	41,000	0.527%	0.032	1.132	1.137	
	SB	37,905	37,876	16,524	14,664						16,524	14,664	-1,860	17,274	19,465	19,134	19,300	19,000	19,000											

**Table 2.5**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 NO BUILD ALTERNATIVE Includes HRTAC Funded Improvements																	
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009 AAWDT /VT09) * 2034 Model Raw Forecast	DIFF (2009 AAWDT - VT09) + 2034 Model Raw Forecast	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO L RTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	2009-2040 Growth Factor	Year 2040 Total Two-Way Volume	Average of Bi-Directional Growth Rate	2034-2040 Growth Factor	Average 2-Way 2009-2034 Growth Factor	2014-2040 Growth Factor		
		A Node	B Node	2009 AAWDT	VT09	A Node HOV	B Node HOV	2009 AAWDT	VT09																							
<b>Birdneck Road</b>																																
Virginia Beach Blvd I-264	NB	37,698	37,735	14,059	12,268						14,059	12,268	-1,791	12,138	13,910	13,929	13,920	14,000	14,000													
	SB	37,736	37,699	14,059	11,399						14,059	11,399	-2,660	12,097	14,920	14,757	14,838	15,000	15,000													
I-264 Laskin Rd	NB	37,877	37,907	12,461	16,220						12,461	16,220	3,759	18,362	14,107	14,603	14,355	14,000	14,000													
	SB	37,905	37,876	11,302	15,458						11,302	15,458	4,156	17,461	12,766	13,305	13,036	13,000	13,000													
<b>Virginia Beach Blvd</b>																																
East of Newtown Rd	EB	35,900	35,891	16,831	20,328						34,000	39,000		16,831	20,328	3,497	27,544	22,806	24,047	23,426	23,000	23,000										
	WB	35,893	35,904	16,831	17,888										16,831	17,888	1,057	27,384	25,766	26,327	26,046	26,000	26,000									
West of Kellam Rd	EB	35,815	35,817	16,981	16,066						34,000	34,000		16,981	16,066	-915	27,426	28,988	28,341	28,664	29,000	29,000										
	WB	35,829	35,828	16,981	14,440										16,981	14,440	-2,541	28,190	33,151	30,731	31,941	32,000	32,000									
East of Constitution Dr	EB	37,625	37,626	22,834	23,789						46,000	45,000		22,834	23,789	955	33,944	32,581	32,989	32,785	33,000	33,000										
	WB	37,639	37,638	23,389	24,332										23,389	24,332	943	33,708	32,402	32,765	32,583	33,000	33,000									
West of Little Neck Rd	EB	37,571	37,598	24,785	24,636						50,000	48,000		24,785	24,636	-149	18,362	18,473	18,511	18,492	18,000	18,000										
	WB	37,601	37,576	24,785	28,897										24,785	28,897	4,112	17,461	14,976	13,349	14,163	14,000	14,000									
West of Lynnhaven Rd	EB	37,666	37,690	17,472	10,516						35,000	37,000		17,472	10,516	-6,956	12,454	20,692	19,410	20,051	20,000	20,000										
	WB	37,704	37,669	17,472	13,879										17,472	13,879	-3,593	13,490	16,982	17,083	17,033	17,000	17,000									



**Table 2.6**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 BUILD ALTERNATIVE SINGLE ROSEMONT Includes HRTAC Funded Improvements																		
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009AAWDT /VT09) + Col E	DIFF (2009AAWDT - VT09) + Col E	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO LRTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	Average 2-Way 2009- 2034 Growth Factor	2014-2040 Growth Factor	2009-2034 Growth Factor	2009-2040 Growth Factor	Year 2040 Total Two- Way Volume	Average of bi- directional growth rate	2034-2040 Growth Factor		
		A Node	B Node	2009 AWDT	VT09	A Node HOV	B Node HOV	2009 AWDT	VT09																								
<b>I-264</b>																																	
Ballentine Boulevard Military Highway	EB - SOV	24971	27308	46,657	48,744					66,000	62,000	64,001	65,941	2,087	50,958	48,776	48,871	48,824															
	EB - HOV	24971	28065	17,344	17,197									-147	17,935	18,088	18,082	18,085	67,000	67,000			1.047	0.1874%									
	WB - HOV	28066	24975	17,281	16,023					62,000	61,000	64,001	63,406	-1,258	15,621	16,847	16,879	16,863		132,000	135,000			1.016	0.0624%	1.031	1.032	1.032	1.039	132,000	0.12%	0.007	
	WB-SOV	27309	24975	46,720	47,383									663	49,081	48,394	48,418	48,406	65,000	65,000													
Military Highway I-64	EB-CD	27331	27340	30,190	18,002					29,000	28,000	30,190	18,002	-12,188	24,124	40,457	36,312	38,384	38,000														
	EB-ML	27308	27343	33,184	35,021					42,000	41,000	44,584	47,052	1,837	31,010	29,383	29,173	32,051	42,000	80,000			1.070	0.2796%									
	EB - HOV	28067	27343	11,400	12,031									631	14,450	13,692	13,819	10,186		149,000	186,000					1.035	1.043	1.036	1.043	154,000	0.14%	0.008	
	WB - HOV	28068	27309	9,685	14,023					31,000	31,000	31,184	45,154	4,338	15,040	10,387	10,702	10,544	31,000	69,000			1.000	0.0000%									
	WB-ML	27367	27309	21,500	31,131									9,631	30,264	20,901	20,633	20,767															
	WB-CD	27349	27344	41,283	17,210					41,000	41,000	41,283	17,210	-24,073	15,260	36,605	39,333	37,969	38,000														
I-64 Newtown Road	EB-CD	27634	27360	32,490	26,061					98,000	98,000	32,490	26,061	-6,429	36,633	45,669	43,062	44,365	44,000														
	EB-ML	27365	27374	65,529	60,326							79,168	79,168	-5,203	78,051	84,782	83,254	81,294	100,000	144,000			1.290	1.1586%									
	EB - HOV	28069	27374	20,467	18,842									-1,625	17,215	18,700	18,840	18,770		285,000	263,000					1.164	1.184	1.170	1.203	293,000	0.66%	0.039	
	WB - HOV	38562	27371	5,795	7,243					102,000	100,000	69,319	69,319	1,448	12,472	9,978	11,024	10,501	69,000	141,000			1.038	0.1516%									
	WB-ML	35836	27371	49,662	62,076									12,414	71,410	57,130	58,996	58,063															
	WB-CD	27378	27377	66,533	40,406									66,533	40,406	-26,127	44,695	73,595	70,822	72,209	72,000												
Newtown Road Witchduck Road	EB - SOV	35842	35804	75,272	73,233					98,000	98,000	99,879	98,692	-2,039	100,208	102,998	102,247	102,623	121,000	121,000			1.211	0.8459%									
	EB - HOV	35842	38565	24,607	25,459									852	19,169	18,527	18,317	18,422		247,000	234,000					1.203	1.252	1.211	1.252	257,000	0.81%	0.049	
	WB - HOV	35836	38562	17,361	7,243					102,000	100,000	105,435	99,938	-10,118	12,472		22,590	22,590															
	WB-ML	35836	27371	54,706	62,076									7,370	71,741	63,224	64,371	63,797	126,000	126,000			1.195	0.7802%									
	WB-CD	35836	35847	33,368	30,619									-2,749	36,192	39,441	38,941	39,191															
Witchduck Road Independence Boulevard	EB - SOV	35747	35711	73,603	65,341					97,000	99,000	97,998	92,582	-8,262	91,519	103,091	99,781	101,436	120,000	120,000			1.225	0.8981%									
	EB - HOV	35747	38572	22,484	24,172	35747	38573	1,911	3,069					530	19,721	18,344	18,033	18,188		240,000	216,000					1.225	1.279	1.234	1.279	251,000	0.90%	0.054	
	WB - HOV	38575	35736	21,532	22,768	38574	35736	1,495	2,156					575	21,084	19,939	19,848	19,894															
	WB-SOV	35712	35736	74,941	70,943					99,000	100,000	97,968	95,867	-3,998	95,067	100,425	99,065	99,745	120,000	120,000			1.225	0.8996%									

**Table 2.7**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 BUILD ALTERNATIVE SINGLE ROSEMONT Includes HRTAC Funded Improvements																
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009AAWDT /VT09) + Col E	DIFF (2009AAWDT - VT09) + Col E	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO LRTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	Average 2-Way 2009- 2034 Growth Factor	2014-2040 Growth Factor	2009-2034 Growth Factor	2009-2040 Growth Factor	Year 2040 Total Two- Way Volume	Average of bi- directional growth rate	2034-2040 Growth Factor
		A Node	B Node	2009 AWDT	VT09	A Node HOV	B Node HOV	2009 AWDT	VT09																						
Independence Boulevard Rosemont Road	EB - SOV	35699	37464	60,282	61,834					82,000	80,000	80,083	82,145	1,552	75,330	73,439	73,778	73,608	94,000	94,000	188,000	165,000	1.174	0.6951%	1.199	1.246	1.207	1.246	196,000	0.79%	0.048
	EB - HOV	38590	37464	19,801	18,173	38591	37464		2,138					-3,766	18,661	20,333	20,289	20,311													
	WB - HOV	37480	38589	17,459	18,685	37480	38588		1,552	77,000	77,000	76,830	82,225	-326	20,989	19,612	19,763	19,687	94,000	94,000			1.223	0.8939%							
	WB-SOV	37480	35701	59,371	61,988									2,617	77,582	74,306	74,965	74,635													
Rosemont Road Lynnhaven Parkway	EB - SOV	37522	37472	49,935	50,143					71,000	63,000	72,331	72,632	208	81,282	80,945	81,074	81,010	81,000	81,000	157,000	157,000	1.120	0.4794%	1.088	1.109	1.092	1.109	160,000	0.35%	0.021
	EB - HOV	37522	38597	22,396	22,489									93	0	0	-93	-47													
	WB - HOV	38596	37527	21,659	20,334					72,000	71,000	71,942	67,542	-1,325	0	0	1,325	662	76,000	76,000			1.056	0.2256%							
	WB-SOV	37476	37527	50,283	47,208									-3,075	71,702	76,373	74,777	75,575													
Lynnhaven Parkway Laskin Road	EB - SOV	37469	41375	42,616	41,977					62,000	55,000	58,781	62,500	-639	77,624	78,806	78,263	78,534	76,000	76,000	148,000	140,000	1.293	1.1717%	1.259	1.321	1.269	1.321	155,000	1.04%	0.062
	EB - HOV	37469	38604	16,165	20,523									4,358	0	0	-4,358	-2,179													
	WB - HOV	38603	37481	15,116	20,548					56,000	56,000	58,781	62,392	5,432	0	0	-5,432	-2,716	72,000	72,000			1.225	0.8995%							
	WB-SOV	41374	37481	43,665	41,844									-1,821	72,376	75,526	74,197	74,861													
Laskin Road First Colonial Road	EB - SOV	37644	37764	24,884	34,424					36,000	32,000	35,039	48,471	9,540	54,833	39,638	45,293	42,465	41,000	41,000	82,000	92,000	1.170	0.6805%	1.021	1.025	1.021	1.025	84,000	0.08%	0.005
	EB - HOV	38606	37764	10,154	14,047									3,893	0	0	-3,893	-1,946													
	WB - HOV	37779	38605	11,781	14,277					40,000	40,000	47,077	48,567	2,496	0	0	-2,496	-1,248	41,000	41,000			0.871	-0.5163%							
	WB-SOV	37779	37657	28,296	34,290									5,994	49,385	40,752	43,391	42,071													
First Colonial Road Birdneck Road	EB - SOV	37831	37846	19,647	24,096					30,000	27,000	28,605	36,793	4,449	40,393	21,766	22,245	22,005	33,000	33,000	65,000	72,000	1.154	0.6146%	1.112	1.138	1.116	1.138	67,000	0.45%	0.027
	EB - HOV	37831	37846	10,353	12,697									2,344	0	10,946	11,081	11,014													
	WB - HOV	38610	37841	10,150	13,343					30,000	30,000	29,919	39,439	3,193	0	10,479	10,583	10,531	32,000	32,000			1.070	0.2782%							
	WB-SOV	37850	37841	19,850	26,096									6,246	40,182	21,209	21,636	21,423													
Birdneck Road Parks Avenue	EB	37846	37875	14,487	19,379					16,000	14,000	14,487	19,379	4,892	20,817	15,562	15,925	15,743	16,000	16,000	32,000	33,000	1.104	0.4178%	1.104	1.130	1.109	1.130	33,000	0.42%	0.025
	WB	37898	37859	14,487	21,298					13,000	13,000	14,487	21,298	6,811	22,894	15,573	16,083	15,828	16,000	16,000	1.104	0.4178%									

**Table 2.8**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 BUILD ALTERNATIVE SINGLE ROSEMONT Includes HRTAC Funded Improvements																
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009AAWDT /VT09) + Col E	DIFF (2009AAWDT - VT09) + Col E	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO LRTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	Average 2-Way 2009- 2034 Growth Factor	2014-2040 Growth Factor	2009-2034 Growth Factor	2009-2040 Growth Factor	Year 2040 Total Two- Way Volume	Average of bi- directional growth rate	2034-2040 Growth Factor
		A Node	B Node	2009 AWDT	VT09	A Node HOV	B Node HOV	2009 AWDT	VT09																						
<b>I-64</b>																															
Northampton Boulevard I-264	EB	27648	27444	78,556	48,520					79,000	75,000	78,556	48,520	-30,036	53,336	86,353	83,372	84,863	85,000												
	Reversible HOV-EB	27424	27649	14,483	12,039					23,000	26,000	14,483	12,039	-2,444	17,687	21,278	20,131	20,705	21,000												
	Reversible HOV-WB	27,649	27,424	7,029	13,975							7,029	13,975	6,946	19,910	10,014	12,964	11,489	11,000												
	WB	27443	27627	81,235	56,549					85,000	86,000	81,235	56,549	-24,686	59,751	85,835	84,437	85,136	85,000												
I-264 Indian River Road	EB - SOV	35620	35405	55,709	42,864					80,000	74,000	76,394	57,549	-18,845	60,237	78,288	73,082	75,685													
	EB - HOV	35620	38621	20,685	14,685										21,195	29,855	27,195	28,525													
	WB - HOV	38622	35623	17,708	15,046					73,000	72,000	76,394	56,347	-20,047	20,145	23,709	22,807	23,258													
	WB-SOV	35386	35623	58,686	41,301										58,451	83,055	75,836	79,446													
<b>Military Highway</b>																															
Virginia Beach CL I-264	NB	35665	27233	24,348	31,814							24,348			41,616	41,668	34,150	37,909	38,000	38,000											
	SB	27235	35628	24,348	31,279							24,348			38,994	39,016	32,063	35,540	36,000	36,000	74,000	60,000	1.520	2.0785%	1.520	1.644	1.540	1.644	80,000	2.08%	0.125
I-264 Poplar Hall	NB	27335	27389	25,239	32,150							25,239			39,855	40,166	32,944	36,555	37,000	37,000	75,000	63,000	1.486	1.9432%	1.486	1.602	1.505	1.602	81,000	1.94%	0.117
	SB	27390	23352	25,239	31,325							25,239			41,222	41,241	35,136	38,189	38,000	38,000											
<b>Newtown Road</b>																															
Princess Anne I-264	NB	35775	27347	15,459	13,463							15,459	13,463	-1,996	14,719	16,901	16,715	16,808	17,000	17,000	35,000	40,000	1.132	0.5285%	1.132	1.164	1.137	1.164	36,000	0.53%	0.032
	SB	27333	27316	15,456	12,613							15,456	12,613	-2,843	15,047	18,439	17,890	18,164	18,000	18,000											
I-264 Cleveland/Ethan Allen	NB	27472	27479	18,918	13,446							18,918	13,446	18,918	18,053	25,400	23,525	24,462	24,000	24,000	44,000	50,000	1.198	0.7922%	1.198	1.246	1.206	1.246	46,000	0.79%	0.048
	SB	27477	27474	17,808	14,392							17,808	14,392	17,808	16,007	19,806	19,423	19,615	20,000	20,000											
<b>Greenwich Road</b>																															
Newtown Witchduck	EB	35785	35784	3,584	2,369							3,584	2,369	-1,215	4,944	7,480	6,159	6,819	7,000	7,000	10,000	N/A	1.395	1.5804%	1.395	1.490	1.411	1.490	11,000	1.58%	0.095
	WB	35784	35785	3,584	2,582							3,584	2,582	-1,002	1,792	2,487	2,794	2,641	3,000	3,000											
<b>Witchduck Road</b>																															
Bonney Rd I-264	NB	35637	35660	12,965	19,150							12,965	19,150	6,185	21,511	14,563	15,326	14,945	15,000	15,000	31,000	43,000	1.166	0.6655%	1.166	1.206	1.173	1.206	32,000	0.67%	0.040
	SB	35659	35638	13,613	20,990							13,613	20,990	7,377	24,250	15,727	16,873	16,300	16,000	16,000											
I-264 Cleveland Street	NB	35768	35787	19,288	20,119							19,288	20,119	831	28,007	26,850	27,176	27,013	27,000	27,000	53,000	64,000	1.374	1.4956%	1.374	1.464	1.389	1.464	56,000	1.50%	0.090
	SB	35786	35770	19,288	20,132							19,288	20,132	844	26,864	25,738	26,020	25,879	26,000	26,000											

**Table 2.9**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT	Direction	ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 BUILD ALTERNATIVE SINGLE ROSEMONT Includes HRTAC Funded Improvements																
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009AAWDT /VT09) * Col E	DIFF (2009AAWDT - VT09) + Col E	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO LRTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	Average 2-Way 2009- 2034 Growth Factor	2014-2040 Growth Factor	2009-2034 Growth Factor	2009-2040 Growth Factor	Year 2040 Total Two- Way Volume	Average of bi- directional growth rate	2034-2040 Growth Factor
		A Node	B Node	2009 AWDT	VT09	A Node HOV	B Node HOV	2009 AWDT	VT09																						
<b>Independence Blvd</b>																															
South of I-264 EB Off-Ramp	NB	35613	35630	42,178	32,237						42,178	32,237	-9,941	36,215	47,383	46,156	46,769	47,000	47,000	96,000	80,000	1.138	0.5521%	1.138	1.171	1.144	1.171	99,000	0.55%	0.033	
	SB	35626	35611	42,178	32,934						42,178	32,934	-9,244	39,011	49,961	48,255	49,108	49,000	49,000												
I-264 North of Bonney Road	NB	35749	35769	42,186	34,369						42,186	34,369	-7,817	37,192	45,651	45,009	45,330	45,000	45,000	93,000	87,000	1.102	0.4090%	1.102	1.127	1.106	1.127	95,000	0.41%	0.025	
	SB	35771	35775	42,186	37,067						42,186	37,067	-5,119	42,186	48,012	47,305	47,658	48,000	48,000												
<b>Rosemont Road</b>																															
South Plaza Trail Chester/Sentara Way	NB	37383	37425	17,490	21,744						17,490	21,744	4,254	32,074	25,799	27,820	26,810	27,000	27,000	51,000	53,000	1.458	1.8319%	1.458	1.568	1.476	1.568	55,000	1.83%	0.110	
	SB	37423	37382	17,490	20,740						17,490	20,740	3,250	27,593	23,269	24,343	23,806	24,000	24,000												
I-264 Virginia Beach Blvd	NB	37535	37558	17,243	23,382						17,243	23,382	6,139	24,079	17,757	17,940	17,849	18,000	18,000	40,000	53,000	1.160	0.6396%	1.160	1.198	1.166	1.198	41,000	0.64%	0.038	
	SB	37558	37536	17,243	28,056						17,243	28,056	10,813	34,226	21,035	23,413	22,224	22,000	22,000												
<b>Lynnhaven Pkwy</b>																															
S. Lynnhaven/264	NB	37427	37440	24,627	29,086						24,627	29,086	4,459	31,471	26,646	27,012	26,829	27,000	27,000	53,000	76,000	1.076	0.3042%	1.076	1.094	1.079	1.094	54,000	0.30%	0.018	
	SB	37442	37426	24,627	32,290						24,627	32,290	7,663	33,487	25,540	25,824	25,682	26,000	26,000												
I-264 Dean Drive	NB	37525	37554	13,442	16,174						13,442	16,174	2,733	14,480	12,034	11,748	11,891	12,000	12,000	23,000	23,000	1.000	0.0000%	1.000	1.000	1.000	1.000	27,000	0.00%	0.000	
	SB	37553	37524	13,442	15,516						13,442	15,516	2,075	12,736	11,033	10,662	10,847	11,000	11,000												
<b>London Bridge Rd</b>																															
Potters Road I-264 Ramps	NB	37493	37556	13,048	10,679						13,048	10,679	-2,369	15,746	19,238	18,115	18,676	19,000	19,000	39,000	40,000	1.495	1.9782%	1.495	1.613	1.514	1.613	42,000	1.98%	0.119	
	SB	37556	37493	13,048	9,937						13,048	9,937	-3,111	15,896	20,872	19,007	19,939	20,000	20,000												
I-264 Ramps Virginia Beach Boulevard	NB	37572	37648	14,627	10,777						14,627	10,777	-3,850	17,335	23,527	21,185	22,356	22,000	22,000	44,000	52,000	1.504	2.0165%	1.504	1.625	1.524	1.625	48,000	2.02%	0.121	
	SB	37648	37572	14,627	10,036						14,627	10,036	-4,591	16,305	23,763	20,896	22,329	22,000	22,000												
<b>Laskin Road</b>																															
I-264 Ramps VA Beach Blvd/Laskin Rd	EB	37644	37686	19,464	11,049						19,464	11,049	-8,415	10,944	19,279	19,359	19,319	19,000	19,000	19,000	N/A	1.000	0.0000%	1.000	1.000	1.000	1.000	1.000	19,000	0.00%	0.000
	WB	37713	37657	16,319	13,825						16,319	13,825	-2,494	12,328	14,552	14,822	14,687	15,000	15,000	15,000	N/A	1.000	0.0000%	1.000	1.000	1.000	1.000	1.000	15,000	0.00%	0.000
<b>First Colonial Rd</b>																															
Virginia Beach Blvd I-264	NB	41217	37767	15,363	15,636						15,363	15,636	273	18,067	17,752	17,794	17,773	18,000	18,000	35,000	41,000	1.139	0.5564%	1.139	1.172	1.145	1.172	36,000	0.56%	0.033	
	SB	37768	41218	15,363	18,701						15,363	18,701	3,338	20,885	17,157	17,547	17,352	17,000	17,000												
I-264 Laskin Road	NB	37877	37907	18,822	17,419						18,822	17,419	-1,403	19,692	21,278	21,095	21,187	21,000	21,000	40,000	56,000	1.132	0.5267%	1.132	1.163	1.137	1.163	41,000	0.53%	0.032	
	SB	37905	37876	16,524	14,664						16,524	14,664	-1,860	17,096	19,264	18,956	19,110	19,000	19,000												

**Table 2.10**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ALTERNATIVE		2040 BUILD ALTERNATIVE SINGLE ROSEMONT Includes HRTAC Funded Improvements																															
ROADWAY SEGMENT	Direction	SOV & Concurrent HOV				Restricted HOV				2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2034 Model Raw Forecast	RATIO (2009AAWDT /VT09) * Col E	DIFF (2009AAWDT - VT09) + Col E	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two-Way Volume	HRTPO LRTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009-2034 Growth Rate (%)	Average 2-Way 2009- 2034 Growth Factor	2014-2040 Growth Factor	2009-2034 Growth Factor	2009-2040 Growth Factor	Year 2040 Total Two- Way Volume	Average of bi- directional growth rate	2034-2040 Growth Factor		
		A Node	B Node	2009 AWDT	VT09	A Node HOV	B Node HOV	2009 AWDT	VT09																								
<b>Birdneck Road</b>																																	
Virginia Beach Blvd I-264	NB	37698	37735	14,059	12,268							14,059	12,268	-1,791	11,523	13,205	13,314	13,260	13,000	13,000	28,000	43,000	0.996	-0.0168%	0.996	0.995	1.000	0.995	28,000	-0.02%	-0.001		
	SB	37736	37699	14,059	11,399							14,059	11,399	-2,660	12,178	15,020	14,838	14,929	15,000	15,000	27,000	25,000	1.136	0.5449%	1.136	1.169	1.142	1.169	28,000	0.54%	0.033		
I-264 Laskin Road	NB	37877	37907	12,461	16,220							12,461	16,220	3,759	18,365	14,109	14,606	14,357	14,000	14,000	27,000	25,000	1.136	0.5449%	1.136	1.169	1.142	1.169	28,000	0.54%	0.033		
	SB	37905	37876	11,302	15,458							11,302	15,458	4,156	17,223	12,592	13,067	12,830	13,000	13,000	27,000	25,000	1.136	0.5449%	1.136	1.169	1.142	1.169	28,000	0.54%	0.033		
<b>Virginia Beach Blvd</b>																																	
East of Newtown Road	EB	35900	35891	16,831	20,328							34,000	39,000	16,831	20,328	3,497	26,946	22,311	23,449	22,880	23,000	23,000	47,000	53,000	1.396	1.5849%	1.396	1.491	1.412	1.491	50,000	1.58%	0.095
	WB	35893	35904	16,831	17,888							34,000	39,000	16,831	17,888	1,057	25,459	23,955	24,402	24,178	24,000	24,000	47,000	53,000	1.396	1.5849%	1.396	1.491	1.412	1.491	50,000	1.58%	0.095
West of Kellam	EB	35815	35817	16,981	16,066							34,000	34,000	16,981	16,066	-915	29,752	31,446	30,667	31,057	31,000	31,000	61,000	58,000	1.796	3.1845%	1.796	1.987	1.828	1.987	67,000	3.18%	0.191
	WB	35829	35828	16,981	14,440							34,000	34,000	16,981	14,440	-2,541	26,303	30,932	28,844	29,888	30,000	30,000	61,000	58,000	1.796	3.1845%	1.796	1.987	1.828	1.987	67,000	3.18%	0.191
East of Constitution Drive	EB	37625	37626	22,834	23,789							46,000	45,000	22,834	23,789	955	33,522	32,176	32,567	32,372	32,000	32,000	63,000	67,000	1.363	1.4518%	1.363	1.450	1.377	1.450	67,000	1.45%	0.087
	WB	37639	37638	23,389	24,332							46,000	45,000	23,389	24,332	943	31,703	30,474	30,760	30,617	31,000	31,000	63,000	67,000	1.363	1.4518%	1.363	1.450	1.377	1.450	67,000	1.45%	0.087
West of Little Neck Road	EB	37571	37598	24,785	24,636							50,000	48,000	24,785	24,636	-149	33,071	33,271	33,220	33,246	33,000	33,000	55,000	68,000	1.110	0.4382%	1.110	1.136	1.114	1.136	56,000	0.44%	0.026
	WB	37601	37576	24,785	28,897							50,000	48,000	24,785	28,897	4,112	25,781	22,112	21,669	21,891	22,000	22,000	55,000	68,000	1.110	0.4382%	1.110	1.136	1.114	1.136	56,000	0.44%	0.026
West of N. Lynnhaven Road	EB	37666	37690	17,472	10,516							35,000	37,000	17,472	10,516	-6,956	20,639	34,291	27,595	30,943	31,000	31,000	48,000	54,000	1.374	1.4945%	1.374	1.463	1.389	1.463	51,000	1.49%	0.090
	WB	37704	37669	17,472	13,879							35,000	37,000	17,472	13,879	-3,593	13,675	17,215	17,268	17,242	17,000	17,000	48,000	54,000	1.374	1.4945%	1.374	1.463	1.389	1.463	51,000	1.49%	0.090

**Table 2.11**  
**I-264 Corridor Evaluation Study, Norfolk & Virginia Beach, Virginia**  
**Documentation of Existing and Forecasted Volumes**  
**Year 2009 - 2040**

ROADWAY SEGMENT		ALTERNATIVE								2009 AAWDT Weekday Volume Informational Only	2013 AAWDT Weekday Volume Informational Only	2009 Counted Volume	2009 Baseline Model ADT	Model - Count (C-B)	2040 BUILD ALTERNATIVE - SPLIT ROSEMONT Includes HRTAC Funded Improvements																	
		SOV & Concurrent HOV				Restricted HOV									2034 Model Raw Forecast	RATIO (2009AWDT T/VT09) * Col E	DIFF (2009AWDT - VT09) + Col E	2034 Adjusted Forecast	Year 2034 Directional Volume	Year 2034 Total Directional Volume	Year 2034 Total Two- Way Volume	HRTPO LRTP 2034 Forecast (January 2012)	2009-2034 Growth Factor	Annual 2009- 2034 Growth Rate (%)	2014-2040 Growth Factor	Year 2040 Total Two- Way Volume	Average of bi- directional growth rate	2034- 2040 Growth Factor	2009- 2040 Growth Factor	Average 2-Way 2009- 2034 Growth Factor		
		A Node	B Node	2009 AWDT	VT09	A Node HOV	B Node HOV	2009 AWDT	VT09																							
Independence Boulevard Rosemont Road	EB - SOV	35699	37464	60,282	61,834					82,000	80,000	80,083	82,145	1,552	78,172	76,209	76,620	76,414	97,000	97,000	195,000	165,000	1.211	0.845%	1.302	204,000	0.974%	0.058	1.302	1.243		
	EB - HOV	38590	37464	19,801	18,173	38591	37464		2,138					-3,766	18,532	20,192	20,160	20,176														
	WB - HOV	37480	38589	17,459	18,685	37480	38588			77,000	77,000	76,830	82,225	-326	20,656	19,301	19,430	19,365	98,000	98,000			1.276	1.102%								
	WB-SOV	37480	35701	59,371	61,988										2,617	81,669	78,221	79,052	78,636													
Rosemont Road Lynnhaven Parkway	EB - SOV	37522	37472	49,935	50,143					71,000	63,000	72,331	72,632	208	78,070	77,746	77,862	77,804	78,000	78,000	159,000	157,000	1.078	0.314%	1.127	163,000	0.409%	0.025	1.127	1.102		
	EB - HOV	37522	38597	22,396	22,489									93	0	0	-93	-47														
	WB - HOV	38596	37527	21,659	20,334					72,000	71,000	71,942	67,542	-1,325	0	0	1,325	662	81,000	81,000			1.126	0.504%								
	WB-SOV	37476	37527	50,283	47,208										-3,075	76,461	81,442	79,536	80,489													
<b>Rosemont Road</b>																																
South Plaza Trail Chester/Sentara Way	NB	37383	37425	17,490	21,744							17,490	21,744	4,254	34,896	28,069	30,642	29,355	29,000	29,000	55,000	53,000	1.572	2.289%	1.710	60,000	2.289%	0.137	1.710	1.572		
	SB	37423	37382	17,490	20,740							17,490	20,740	3,250	30,258	25,517	27,008	26,262	26,000	26,000												
I-264 Virginia Beach Blvd	NB	37535	37558	17,243	23,382							17,243	23,382	6,139	16,468	12,144	10,329	11,237	11,000	11,000	28,000	53,000	0.812	1.000%	0.872	30,000	1.000%	0.060	0.872	0.812		
	SB	37558	37536	17,243	28,056							17,243	28,056	10,813	27,756	17,059	16,943	17,001	17,000	17,000												