

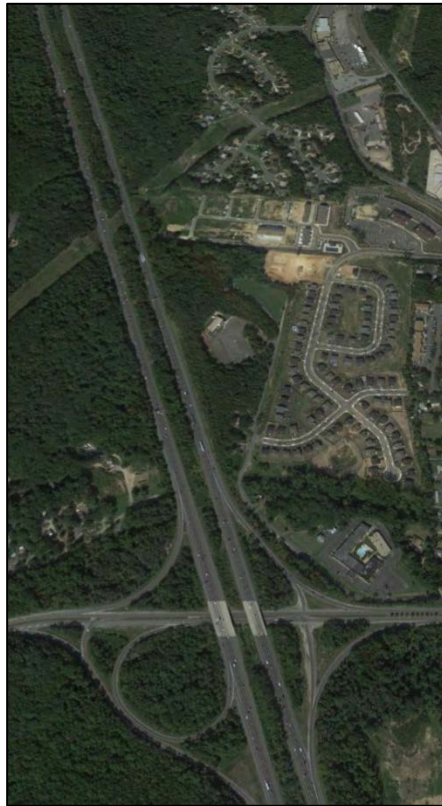
95 Express Lanes: Before/After Study

Exit 126 (Massaponax) to Exit 170 (Springfield)

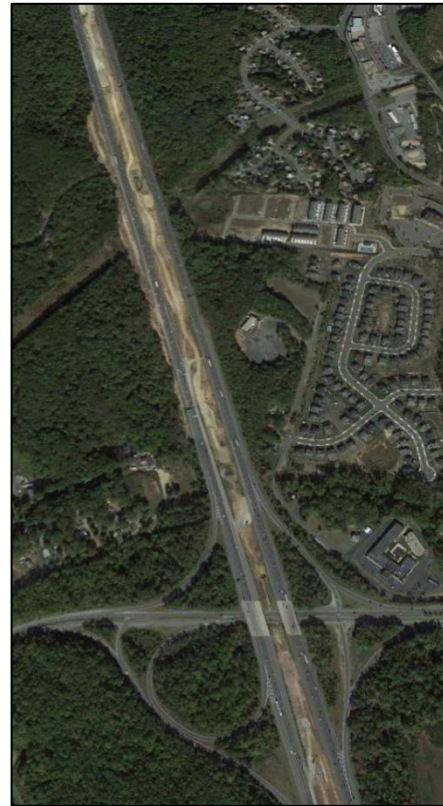
Before



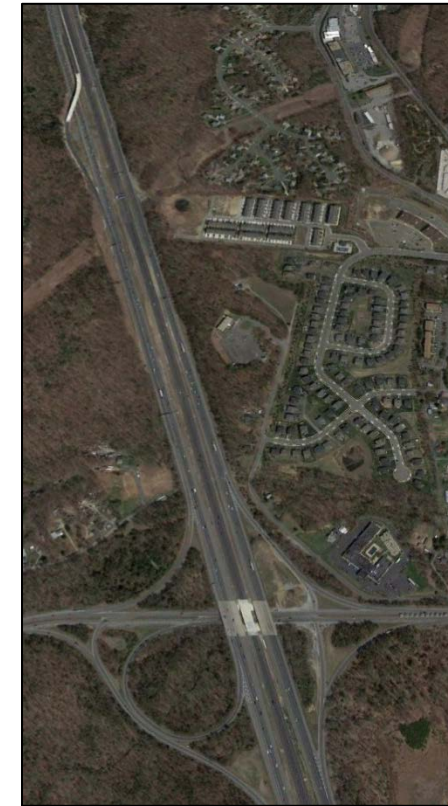
After



2010



2012



2015

Pictures show the Route 619 Interchange prior to the constructions of the Express Lanes, during construction, and after construction.

What effect do the 95 Express Lanes have on the General Purpose Lanes?



Previous 95 Express Lane Study Efforts

1. Transurban (Spring, 2015)

- Study Limits: Exit 143 to 170
- Findings: 95 Express Lanes reduced travel times significantly
- Limitations: Did not analyze Exit 126 to Exit 143 results

2. FAMPO Staff (Spring, 2015)

- Study Limits: Exit 126 to 143, intended to supplement Transurban study effort
- Findings: 95 Express Lanes significantly increased travel times south of Exit 143
- Limitations: Compared different times of the year, but did not account for seasonal variation.

3. VDOT Staff (Summer, 2015)

- Study Limits: Exit 126 to 170, intended to combine efforts for #1 & #2
- Findings: Differences between 2014 and 2015 not as great as had been anticipated. Decreased travel times north of Exit 143 and somewhat increased travel times south of Exit 143.
- Limitations: Used data from 95 express lane early 2015 “ramp up period” which did not account for time for users to get acquainted with new facility and during winter weather months of February/March which may have impacted results

New FAMPO Effort (Fall, 2015)

Exit 126 (Rt. 1 / Rt. 17) to Exit 170 (Springfield)

1. Based on INRIX

- Commercial Data Source uses connected cars and devices, e.g., smart phones to estimate traffic conditions

2. Obtained from RITIS

- Publicly available data from University of Maryland based on INRIX. Website: <https://www.ritis.org/login?r=Lw==>

3. Timeframe Used for Analysis of 2014 vs. 2015 Data

- May through July
- Weekdays: Monday through Friday
 - *Holidays excluded*
- AM Peak Period: 5:30 to 8:30
- PM Peak Period: 4:00 to 6:30

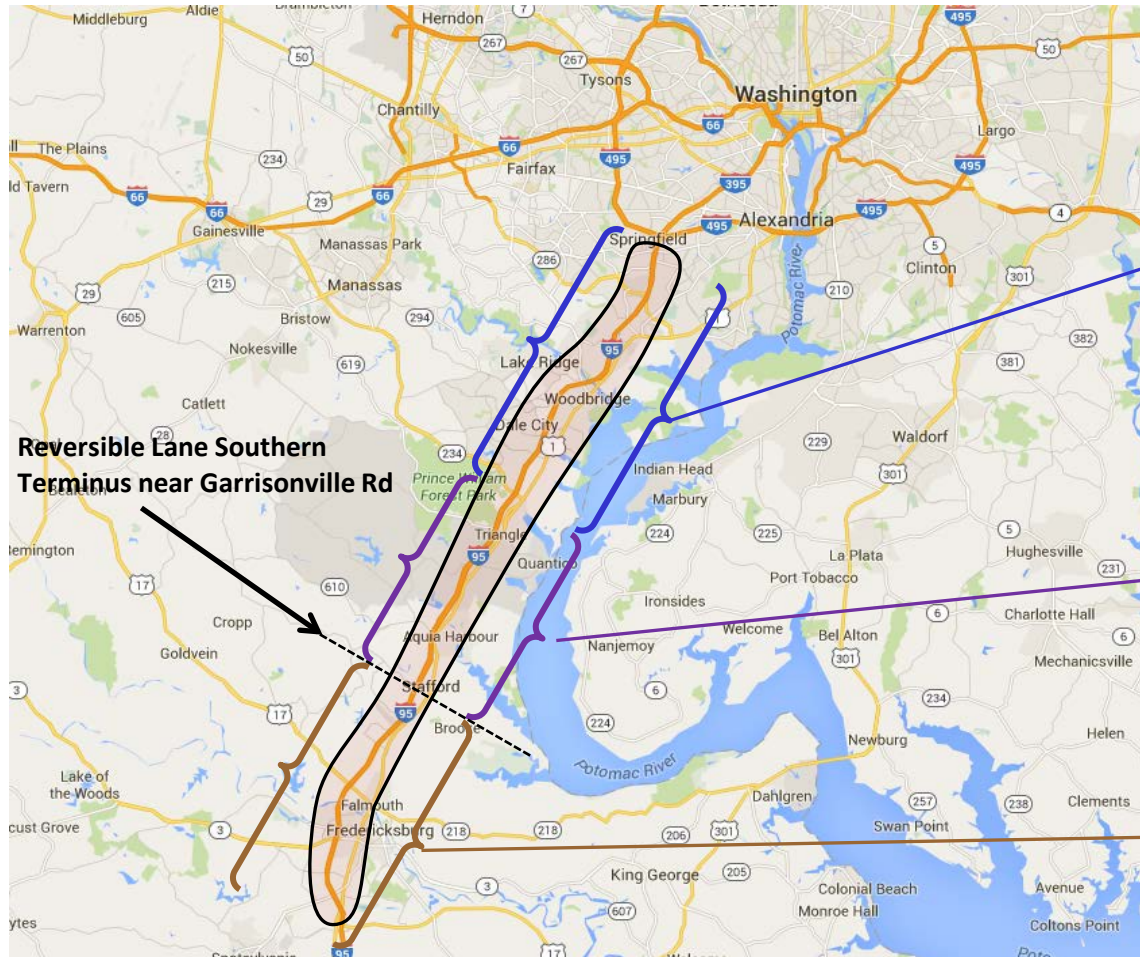
4. Analyzed 2014 vs. 2015 I-95 General Purpose Lane Speeds and Travel Times

5. Combination of Consultant and FAMPO Staff Effort

- Consultant Cost = \$11,000

Study Area

Exit 126 (Rte 1 / Rte 17) to Exit 170 (Springfield)



Prior to December 2014:

Reversible High Occupancy Vehicle (HOV 3+) lanes extend from Exit 152 in Dumfries to Exit 169 in Franconia

After December 2014:

Reversible lanes extended south to Exit 143 in Stafford and converted to tolled Express Lanes (HOV 3+ still free)

No Reversible lanes south of Exit 143

Summary of Results: AM

I-95 NB General Purpose Lane Travel Speeds Between Exit 126 and Exit 170

Comparison of Travel Speeds in MPH for May 2014 vs. 2015 Between 7:30 and 8:00 AM

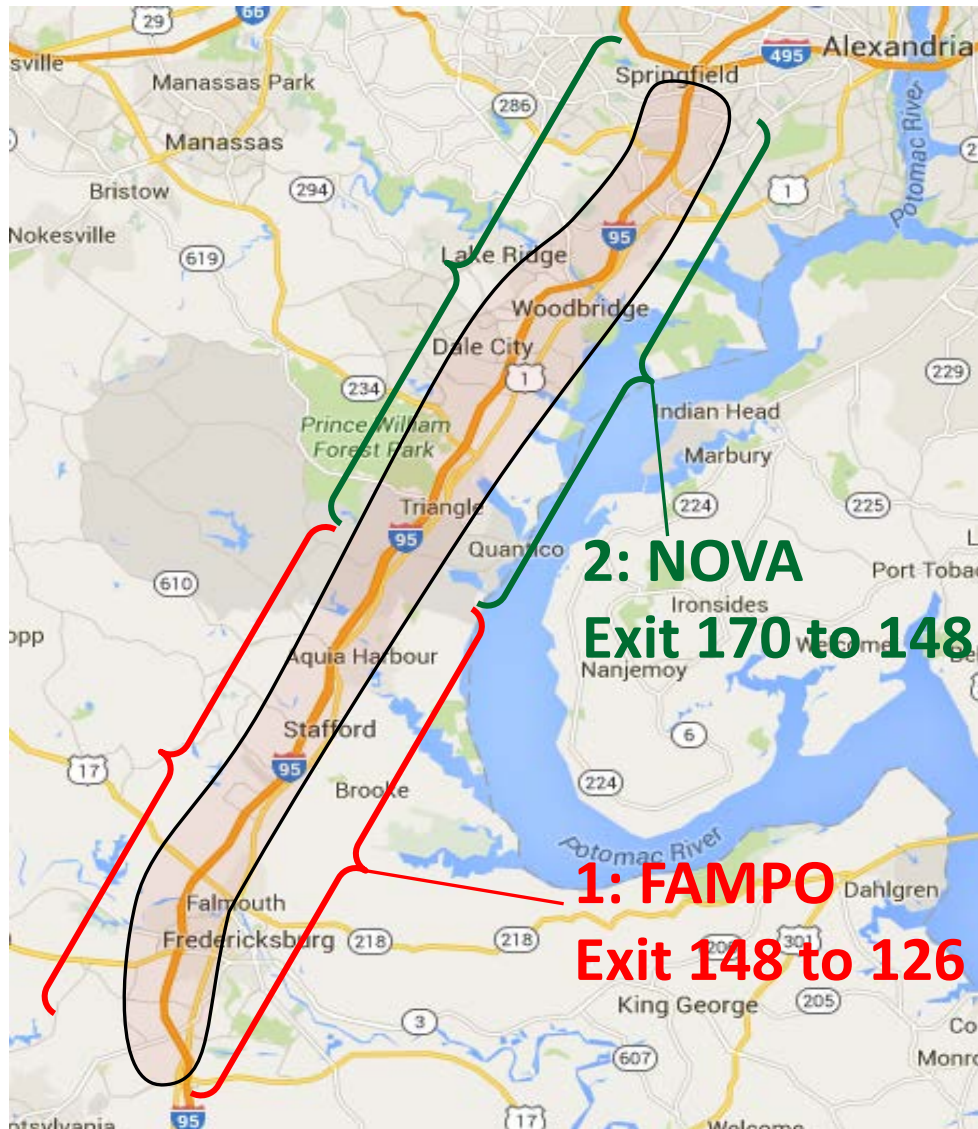
Speed Decreases from 2014 to 2015 shown in Red

I-95 Location	Monday		Tuesday		Wednesday		Thursday		Friday	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Exit 160 to Exit 170	46.5	60.9	34.7	43.1	26.5	41.8	26.5	43.6	35.6	57.2
Exit 150 to Exit 160	53.6	64.8	46.2	59.0	43.3	54.2	46.8	56.7	50.7	67.0
Exit 133 to Exit 150	51.1	48.2	51.5	40.1	49.6	42.1	49.9	39.4	55.9	63.2
Exit 126 to 133	63.0	65.8	60.2	61.4	61.4	66.0	58.2	63.0	63.9	69.4
FAMPO: Exit 126 to 148	54.8	53.6	54.2	46.7	53.3	49.5	52.5	46.7	58.4	65.1
NOVA: Exit 148 to 170	50.1	62.9	40.5	51.1	35.0	48.1	36.8	50.3	43.3	62.2
Total: Exit 126 to 170	54.2	58.7	50.3	50.6	47.4	51.7	48.4	50.7	54.6	64.4

1. 7:30 to 8:00 AM used for comparison since it had the slowest travel speeds in the 5:30 to 8:30 AM time period
2. Tuesday, Wednesday, and Thursday have the lowest travel speeds so were used for comparison
3. Monday and Friday likely have higher travel speeds due to more teleworking occurring on these days
4. Travel speeds are significantly slower in 2015 vs. 2014 for the FAMPO portion of I-95.

Summary of Results: AM

I-95 NB General Purpose Lane Travel Times Between Exit 126 and Exit 170



Travel Times in Minutes

I-95 Location	Uncongested Travel Time (Based on Speed Limit)	Tuesday - Thursday		Delay in Minutes	2015 Difference from Uncongested Travel Time
		2014	2015		
Exit 160 to Exit 170	11	21	14	3	30%
Exit 150 to Exit 160	9	21	12	2	25%
Exit 133 to Exit 150	16	21	27	12	75%
Exit 126 to 133	7	9	7	0	7%
FAMPO: Exit 126 to 148	23	29	35	12	54%
NOVA: Exit 148 to 170	20	42	26	6	28%
Total: Exit 126 to 170	43	72	60	18	42%

1. Significant increase in I-95 Travel Times in FAMPO in 2015 vs. 2014
2. Travel Time in FAMPO Region is about 54% higher than Uncongested Time
3. Travel Time between Exit 133 & 150 is about 75% over Uncongested Time
4. Significant Travel Delay Across Entire I-95 Corridor from Exit 126 to Exit 170

Summary of Results: PM

I-95 SB General Purpose Lane Travel Speeds Between Exit 170 and Exit 126

Comparison of Travel Speeds in MPH for May 2014 vs. 2015 Between 4:00 and 6:30 PM

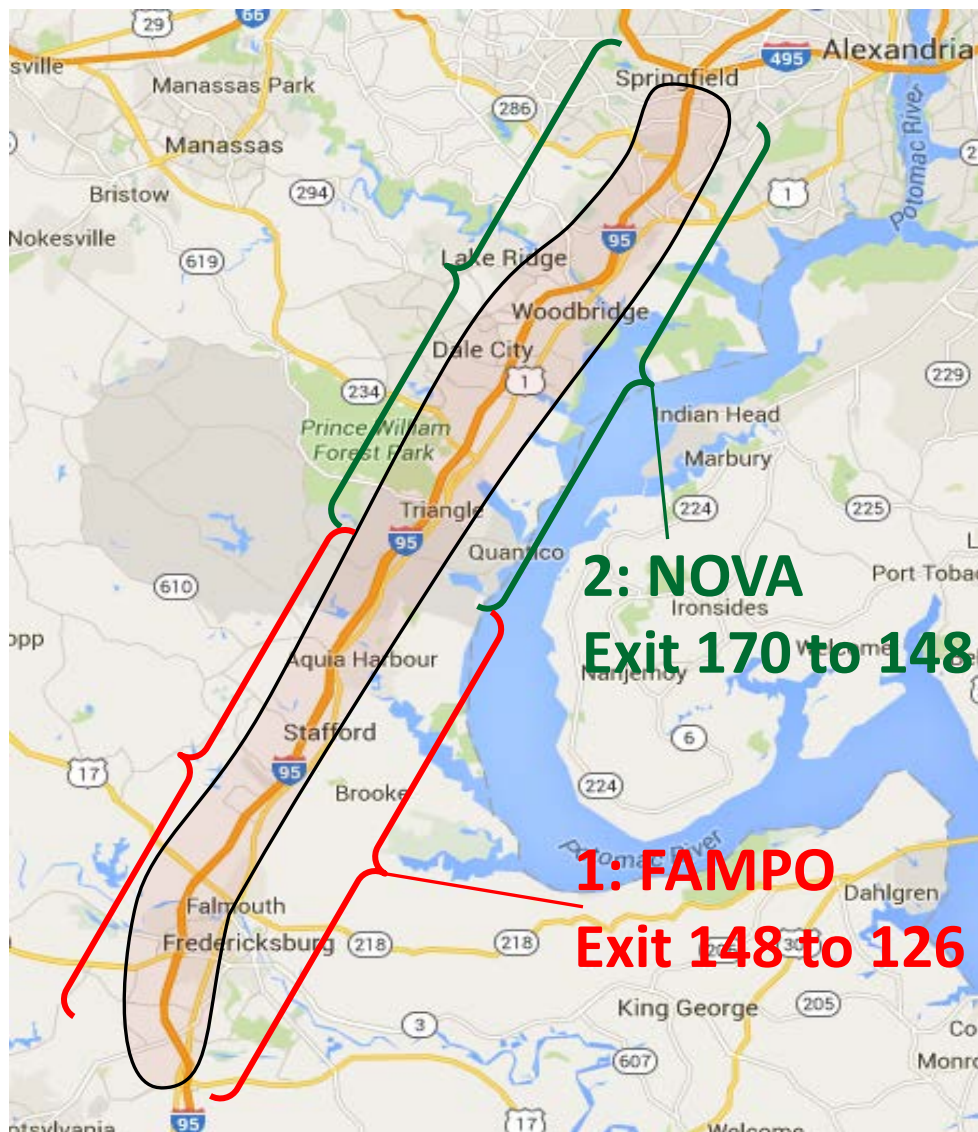
Speed Decreases from 2014 to 2015 shown in Red

I-95 Location	Monday		Tuesday		Wednesday		Thursday		Friday	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
Exit 170 to Exit 160	40.2	42.5	41.2	41.6	40.2	42.0	35.8	45.1	38.8	59.3
Exit 160 to Exit 150	36.7	61.0	42.1	63.1	39.7	61.4	28.3	48.8	25.7	37.2
Exit 150 to Exit 133	49.9	41.9	49.0	46.8	47.3	44.5	40.3	33.4	37.7	32.1
Exit 133 to 126	63.6	61.0	61.4	61.9	60.2	61.5	61.1	60.1	62.0	61.8
FAMPO: Exit 148 to 126	54.1	47.7	52.8	51.5	51.2	49.7	46.7	41.6	45.2	41.2
NOVA: Exit 170 to 148	38.4	51.9	41.7	52.5	39.9	51.9	32.0	47.0	32.1	48.0
Total: Exit 170 to 126	47.3	50.0	48.3	52.2	46.7	51.0	40.2	44.5	39.4	44.8

1. PM peak period appears to have a longer duration than AM peak period. Slow speeds prevalent throughout 4:00 to 6:30 PM timeframe, so entire period was used for comparison.
2. Thursday and Friday have the slowest travel speeds so were used for comparison.
3. Travel Speeds are significantly slower in 2015 vs. 2014 for the FAMPO part of I-95.
4. Travel Speeds are significantly below posted speed limit for entire I-95 corridor in both 2015 and 2014
 - Speed Limit is 55 mph between Exit 170 and 160
 - Speed Limit is 65 mph between Exit 160 and 126

Summary of Results: PM

I-95 SB General Purpose Lane Travel Times Between Exit 170 and Exit 126



Travel Times in Minutes

I-95 Location	Uncongested Travel Time (Based on Speed Limit)	Thursday & Friday		Delay in Minutes	2015 Difference from Uncongested Travel Time
		2014	2015		
Exit 170 to Exit 160	11	17	12	1	10%
Exit 160 to Exit 150	9	24	15	6	63%
Exit 150 to Exit 133	16	26	32	16	104%
Exit 133 to 126	7	8	8	1	10%
FAMPO: Exit 148 to 126	23	34	39	17	75%
NOVA: Exit 170 to 148	20	41	27	7	35%
Total: Exit 170 to 126	43	74	66	24	56%

1. Significant increase in I-95 Travel Times in FAMPO in 2015 vs. 2014
2. Travel Time in FAMPO Region is about 75% higher than Uncongested Time
3. Travel Time between Exit 150 and 133 was over double Uncongested Time
4. Significant Travel Delay Across Entire I-95 Corridor from Exit 170 to Exit 126

Conclusions

- 1. 95 Express Lanes have significantly increased I-95 Peak Period Travel Times in the FAMPO Region for both the AM and PM Peak Periods**
- 2. Travel delay on the I-95 General Purpose Lanes in both AM and PM Peak Times is significantly worse in FAMPO Region compared to NOVA Region**
- 3. I-95 Travel Times during Peak Periods are still significantly longer than Uncongested Travel Times even with 95 Express Lane improvements. Additional improvements to the I-95 corridor are needed.**

Questions?

