I-95 Northbound Rappahannock River Crossing Project

Congestion Comparison with select Smart Scale projects

February 23, 2017

FAMPO
Fredericksburg Area Metropolitan Planning Organization

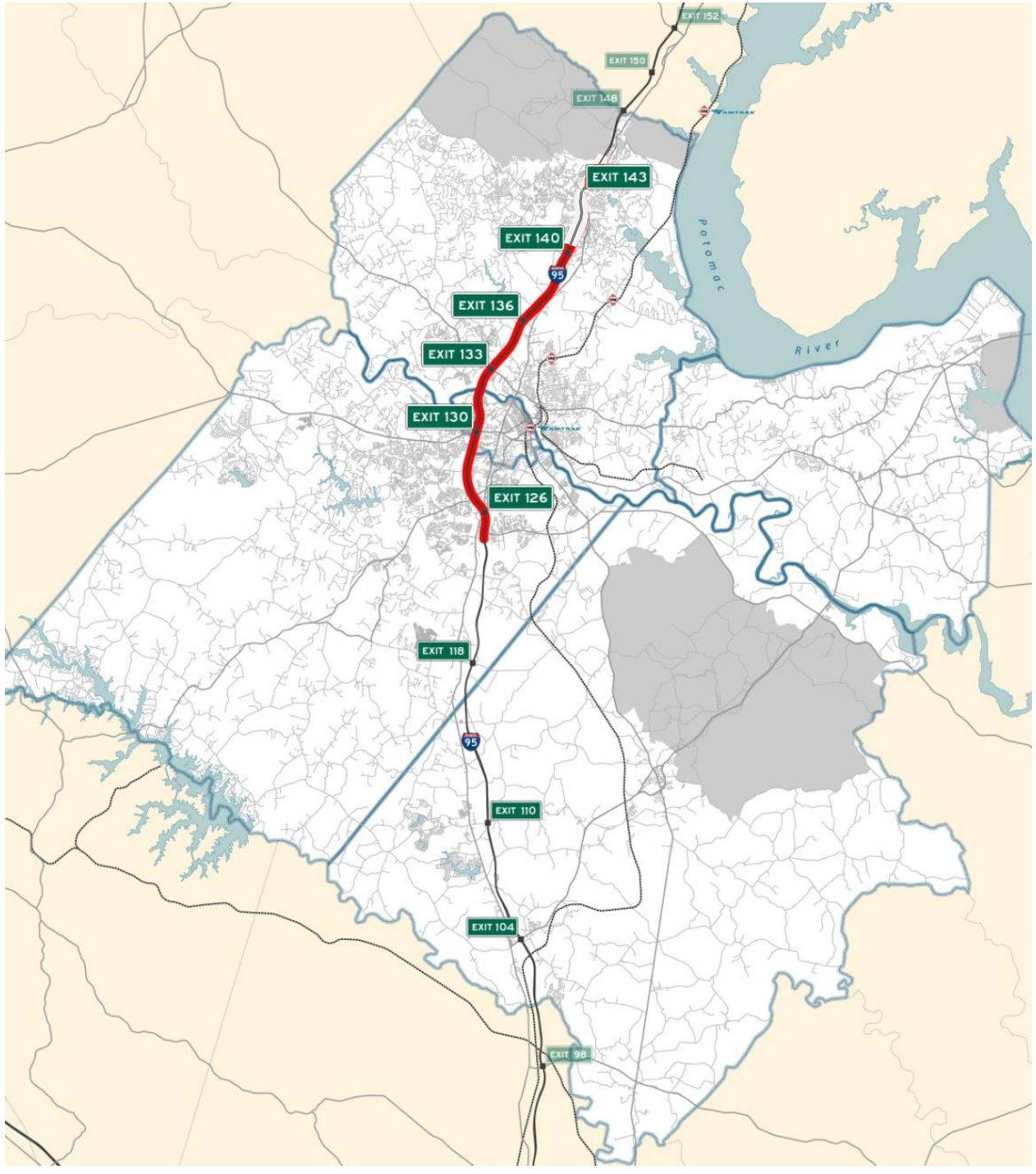
Study Objective

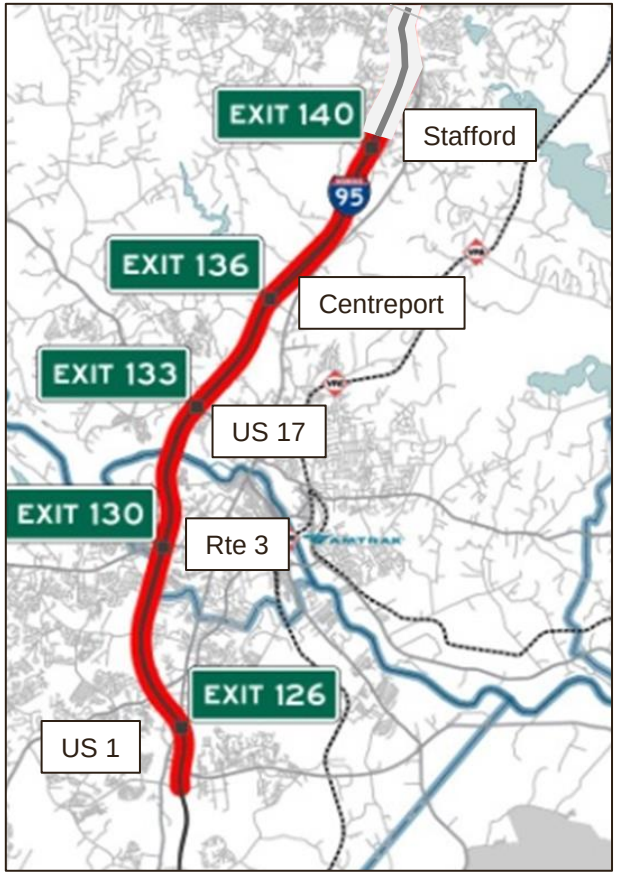
To develop a comparison of existing congestion levels between the I-95 Rappahannock River Crossing Project and select other projects that ranked higher in the 2016 Smart Scale program.

Of specific interest will be the significant Sunday congestion experienced during summer months along northbound I-95 in the FAMPO area. The Smart Scale evaluation process is not believed to adequately account for this day of the week and season of the year.

INRIX data used to illustrate the comparisons in this study

Rappahannock River Crossing Project Study Area





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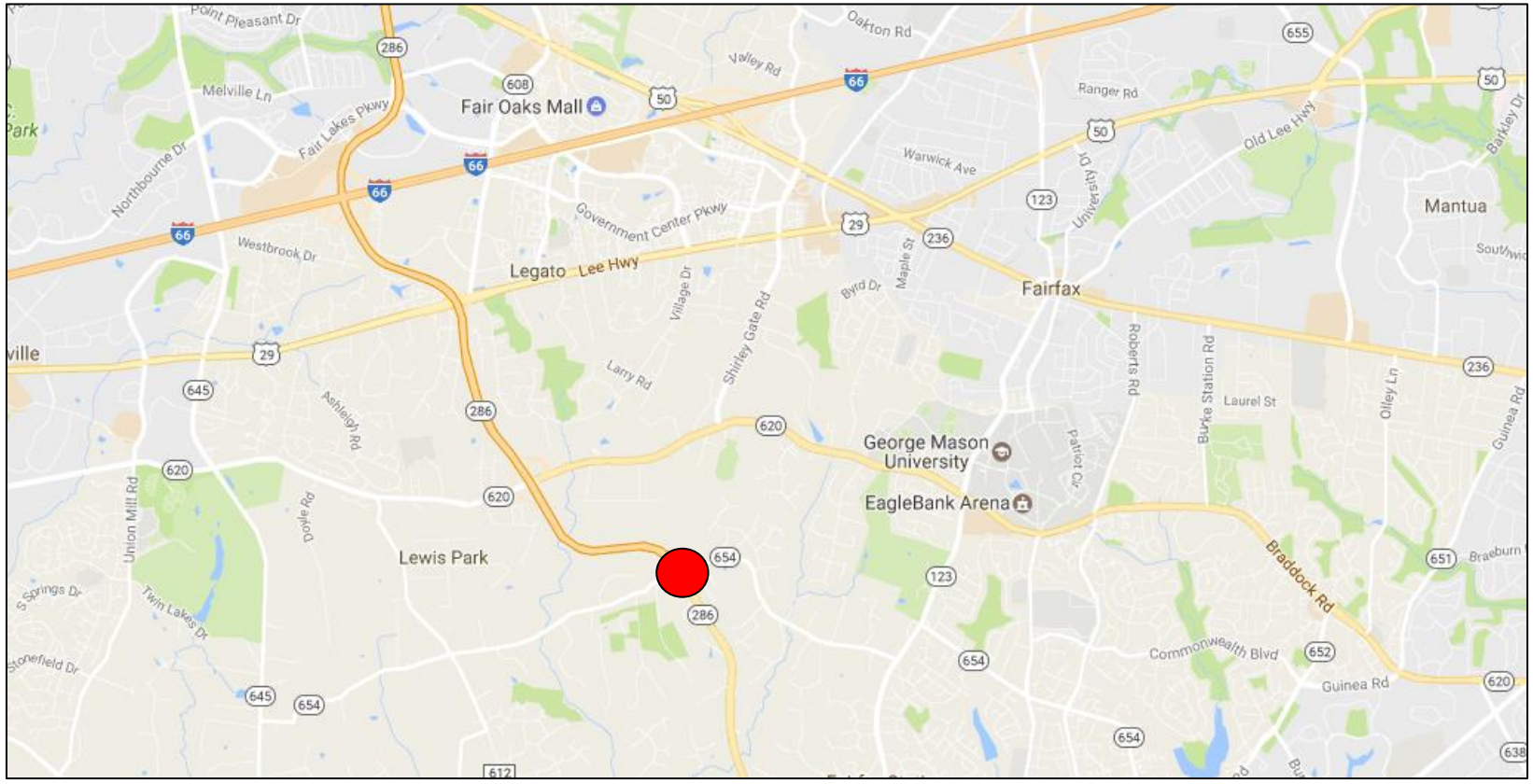
Select Projects for Comparison

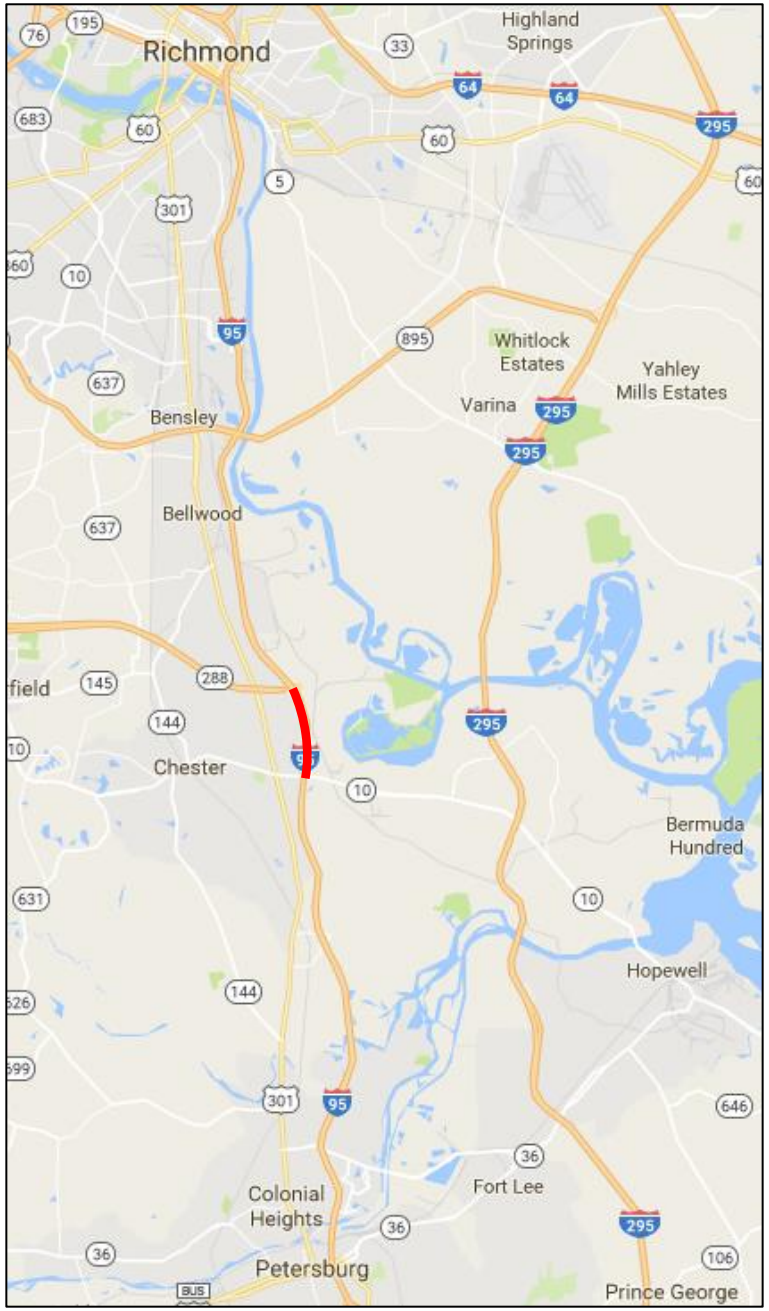
Route 286 (Fairfax County Parkway)

Construct interchange at the intersection of FF Co. Parkway, Popes Head Road and Shirley Gate Road Ext.
Total Cost: $64,303,070
Smart Scale Contribution: $50,558,370 (79%)



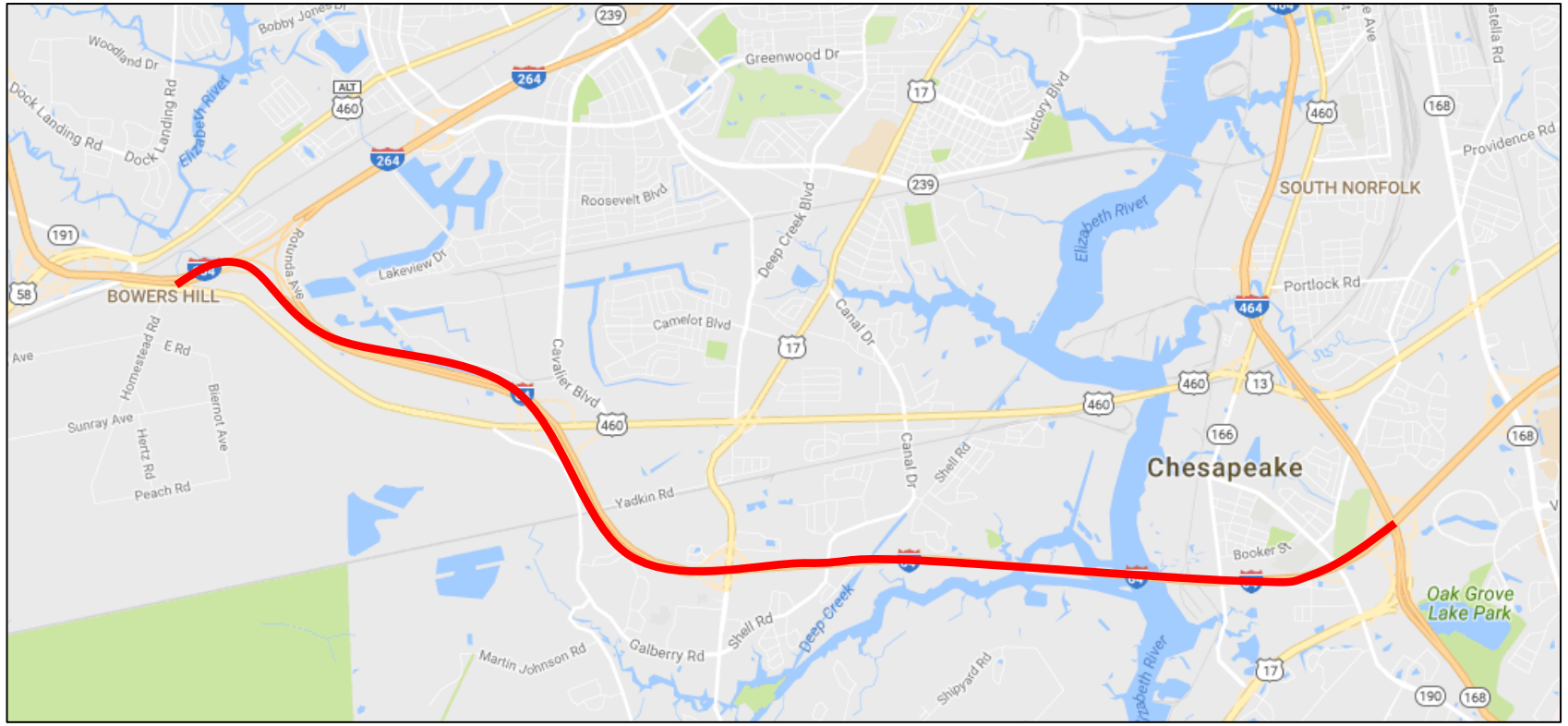
RVA I-95

Construct NB and SB auxiliary lanes from Route 10 to Route 288
Total Cost: $28,770,000
Smart Scale Contribution: $28,770,000 (100%)



I-64 In Hampton Roads

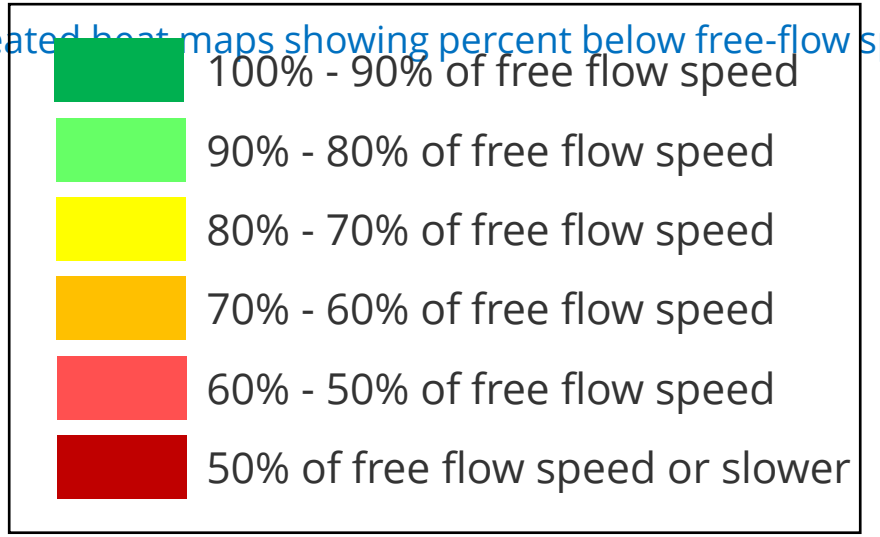
Widen I-64 between I-464 and the I-264/I-664 Interchange
Total Cost: $600,000,000
Smart Scale Contribution: $100,000,000 (17%)



INRIX Analysis

INRIX collects data streams (vehicle speeds) from local transport authorities, sensors on road networks, fleet vehicles such as delivery vans, long haul trucks, and taxis.
Compare vehicle speeds from FAMPO I-95 northbound to vehicles speeds on other roadways with projects selected for Smart Scale funding.

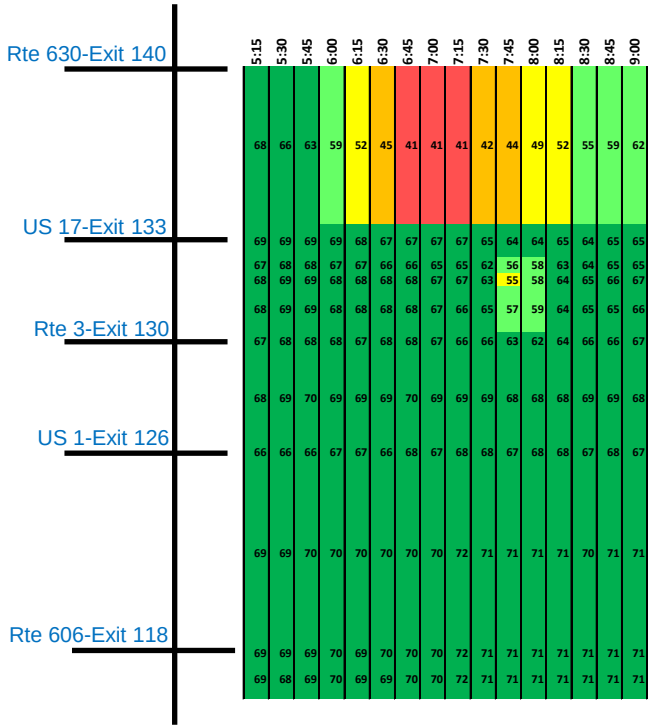
1. Collected speed data for comparable roadways from July to November
2. Developed macro to identify the free-flow speed for each road segment
3. Created heat maps showing percent below free-flow speed



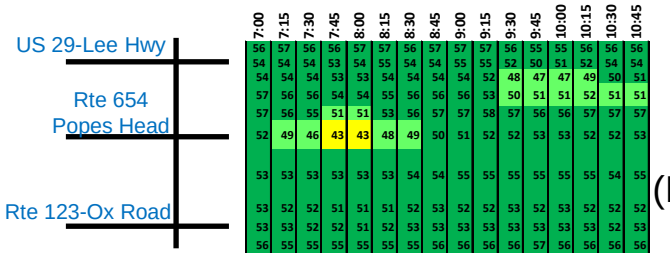
What we compared:

- **AM Peak Period: Worst 4 hours of each roadway (Tues.-Thurs.)**
- **PM Peak Period: Worst 4 hours of each roadway (Tues.-Thurs.)**
- **Saturday: Worst 8 hours of each roadway**
- **Sunday: Worst 8 hours of each roadway**

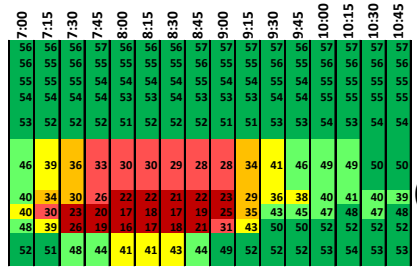
Avg. Weekday AM Peak Period Congestion (worst 4 hours of each roadway, Tues-Thurs.)



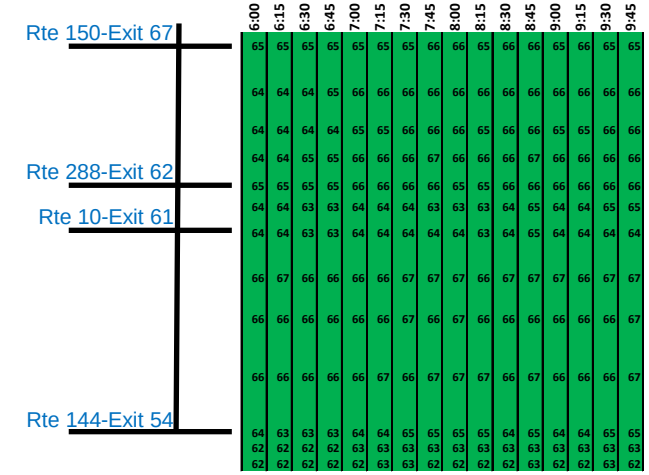
FAMPO I-95 Northbound



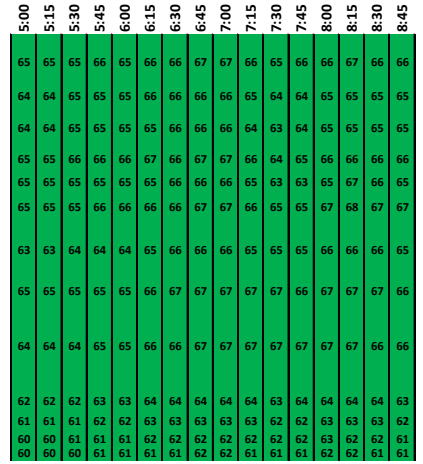
Route 286 Southbound (Fairfax Co Pkwy)



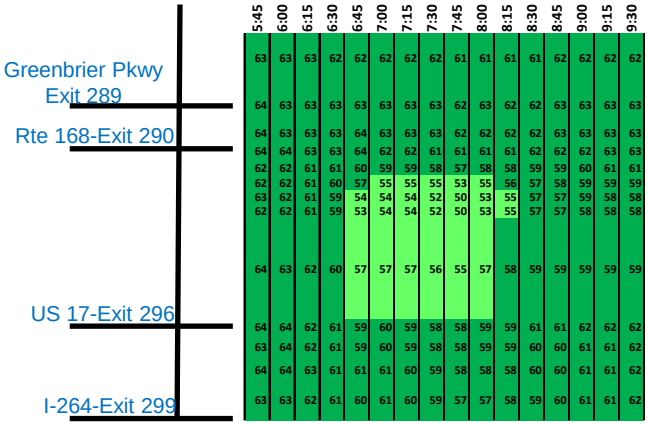
Route 286 Northbound (Fairfax Co Pkwy)



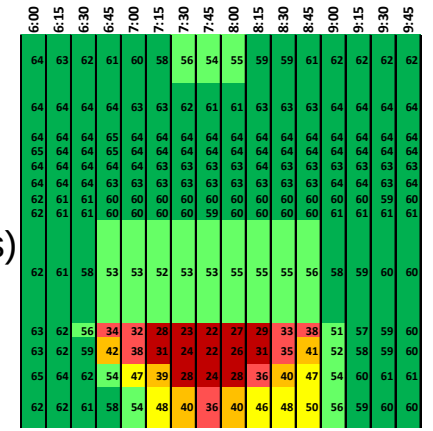
RVA I-95 Southbound



RVA I-95 Northbound

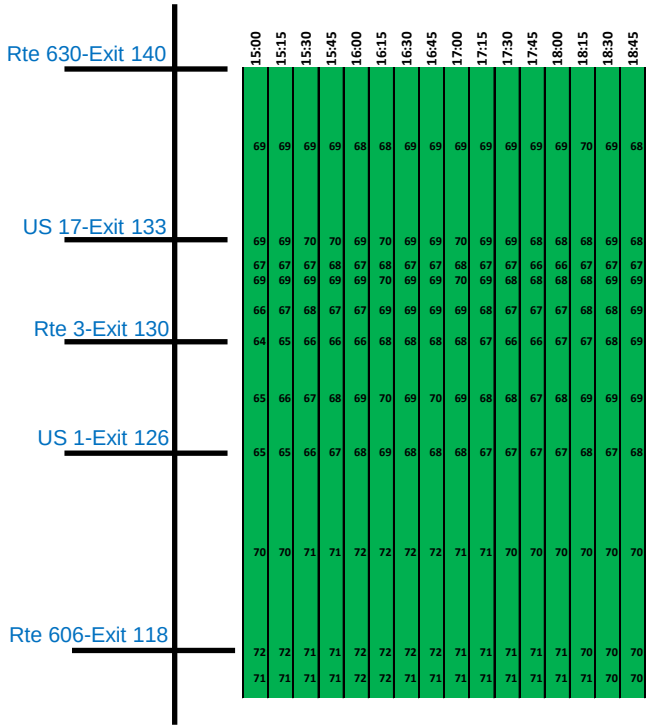


I-64 Eastbound (Hampton Roads)

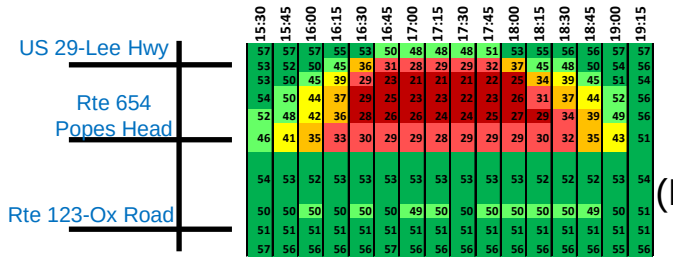


I-64 Westbound (Hampton Roads)

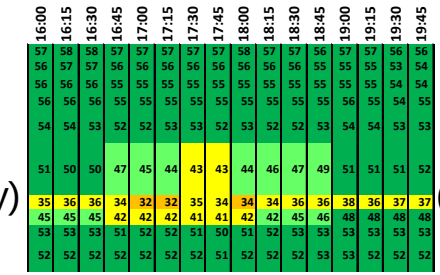
Avg. Weekday PM Peak Period Congestion (worst 4 hours of each roadway, Tues-Thurs.)



FAMPO I-95 Northbound



Route 286 Southbound (Fairfax Co Pkwy)



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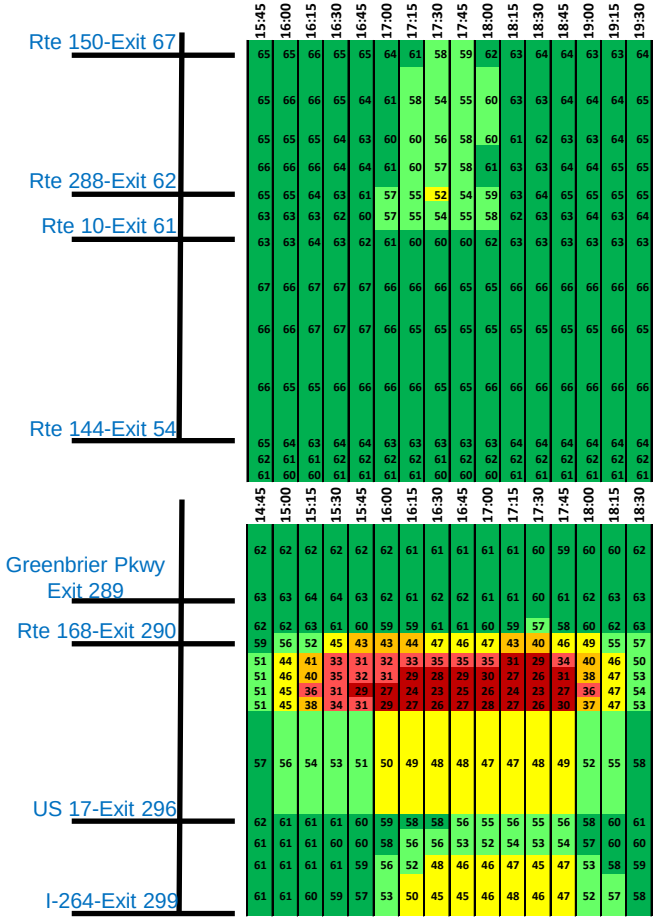
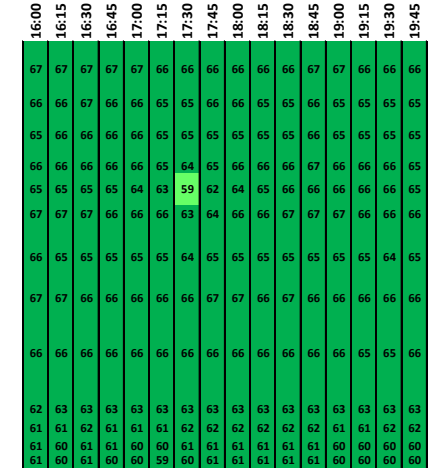
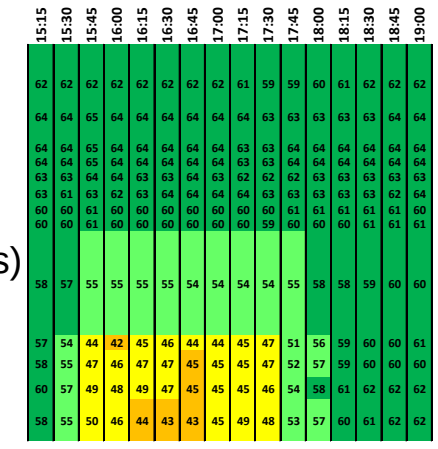


RVA I-95 Southbound



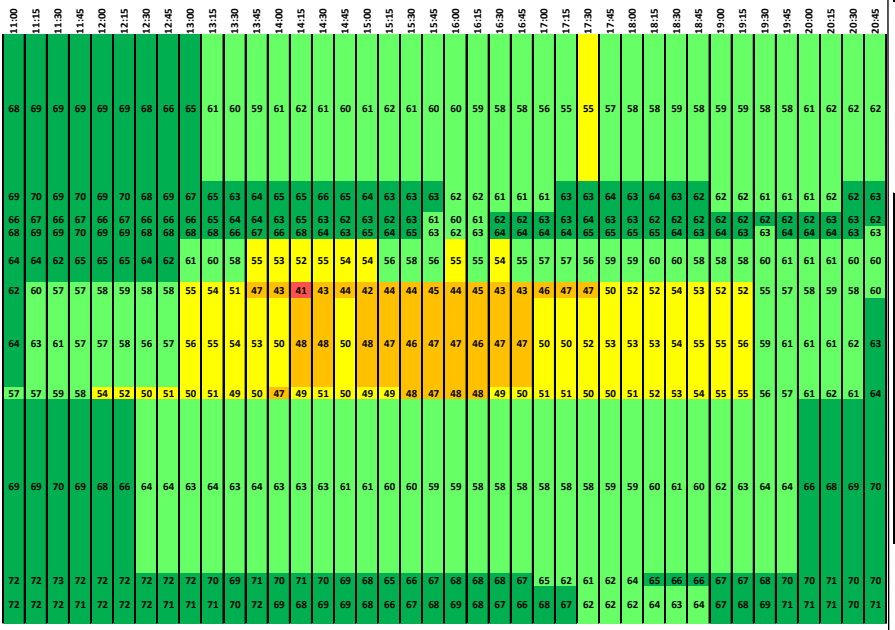
RVA I-95 Northbound

I-64 Eastbound (Hampton Roads)



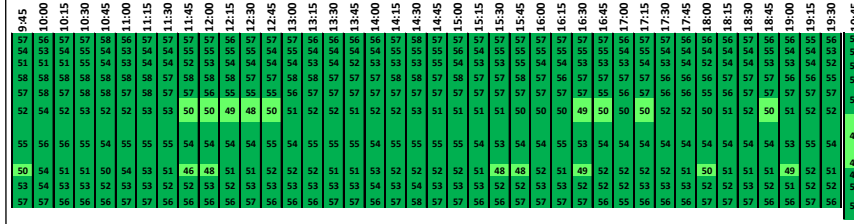
I-64 Westbound (Hampton Roads)

Saturday Congestion
(worst 10 hours of each roadway)

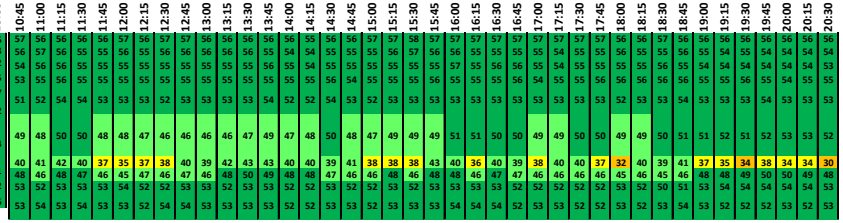


FAMPO I-95
Northbound

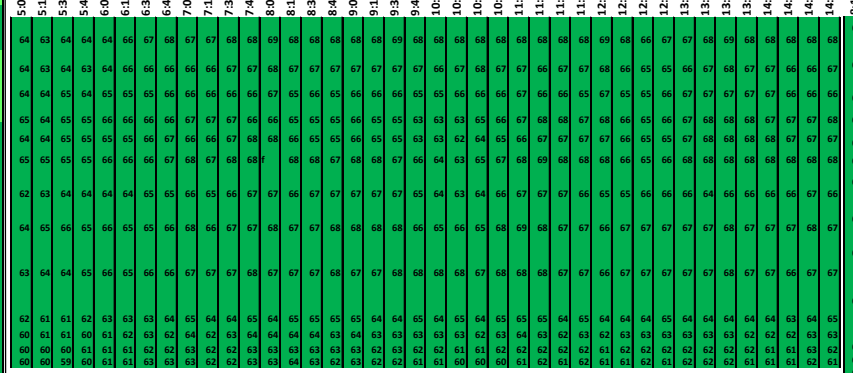
SB Rte. 286



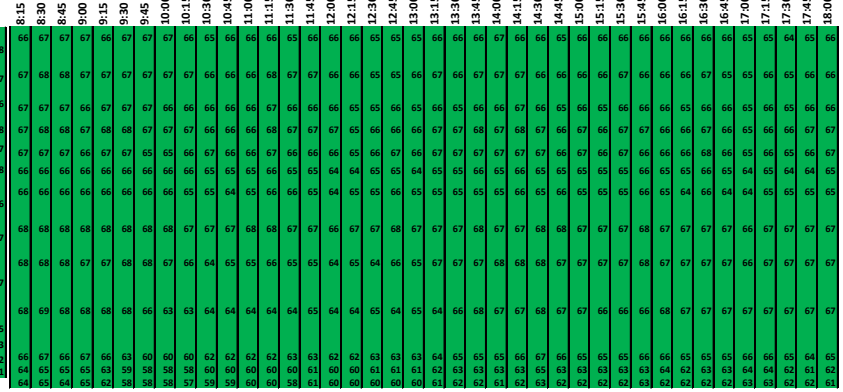
NB Rte. 286



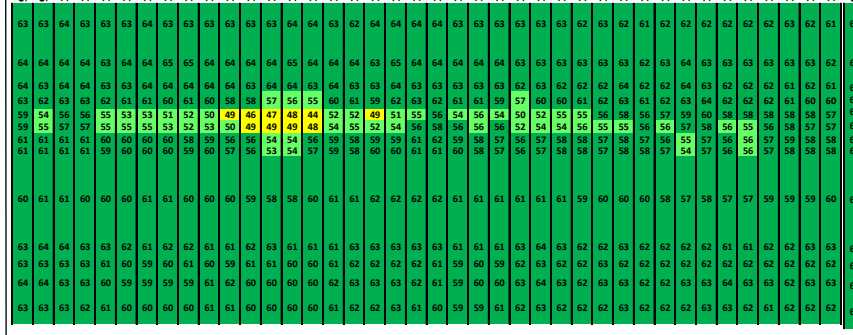
RVA I-95 NB



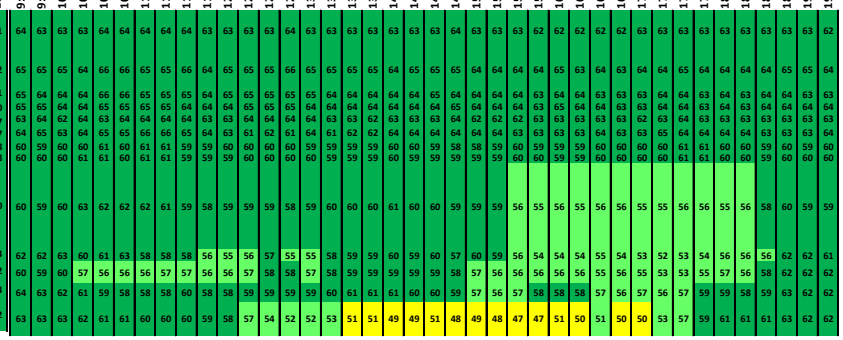
RVA I-95 SB



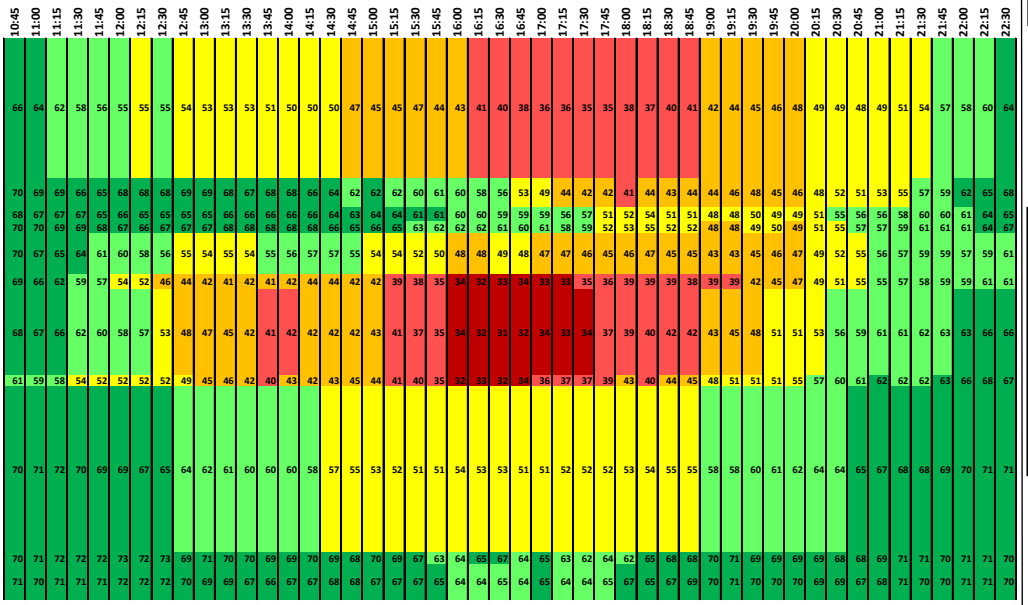
I-64 EB



I-64 WB

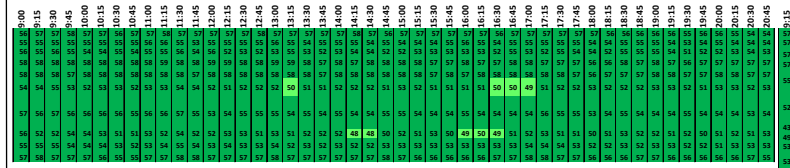


Sunday Congestion
(worst 12 hours of each roadway)

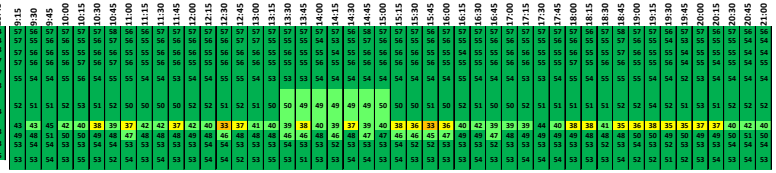


FAMPO I-95
Northbound

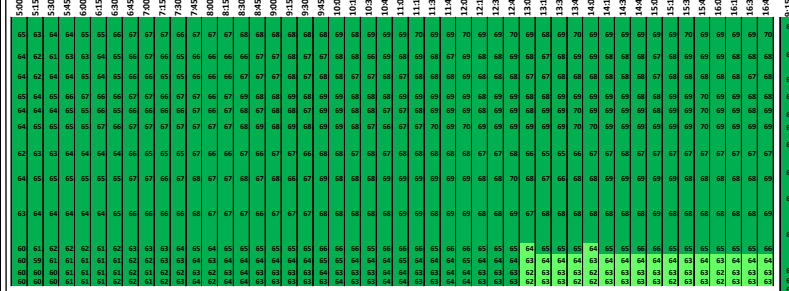
SB Rte. 286



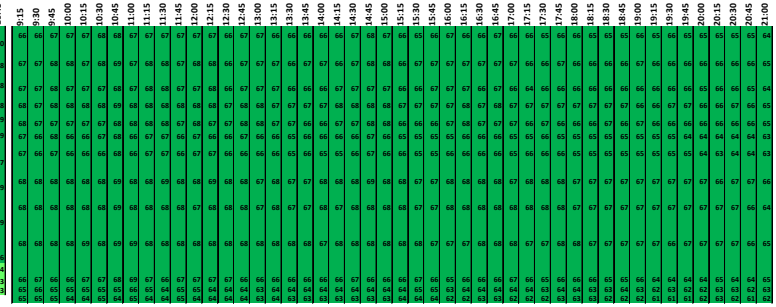
NB Rte. 286



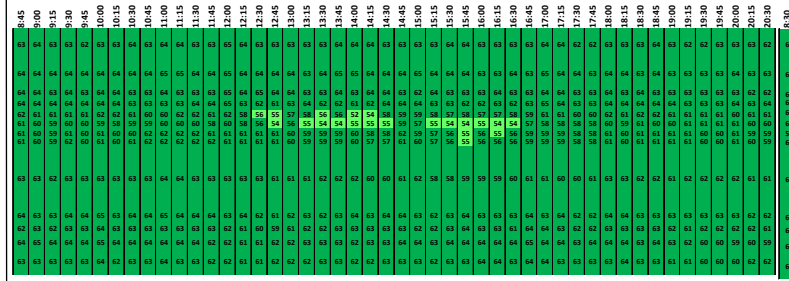
RVA I-95 NB



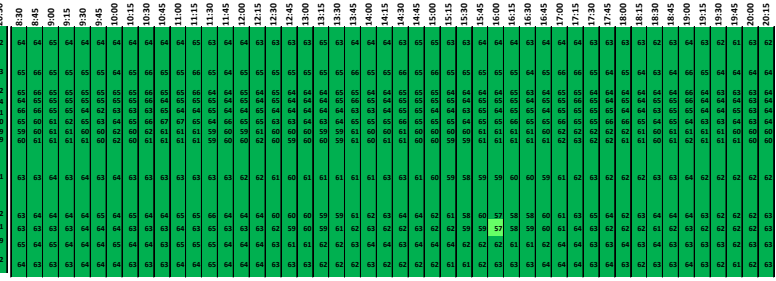
RVA I-95 SB



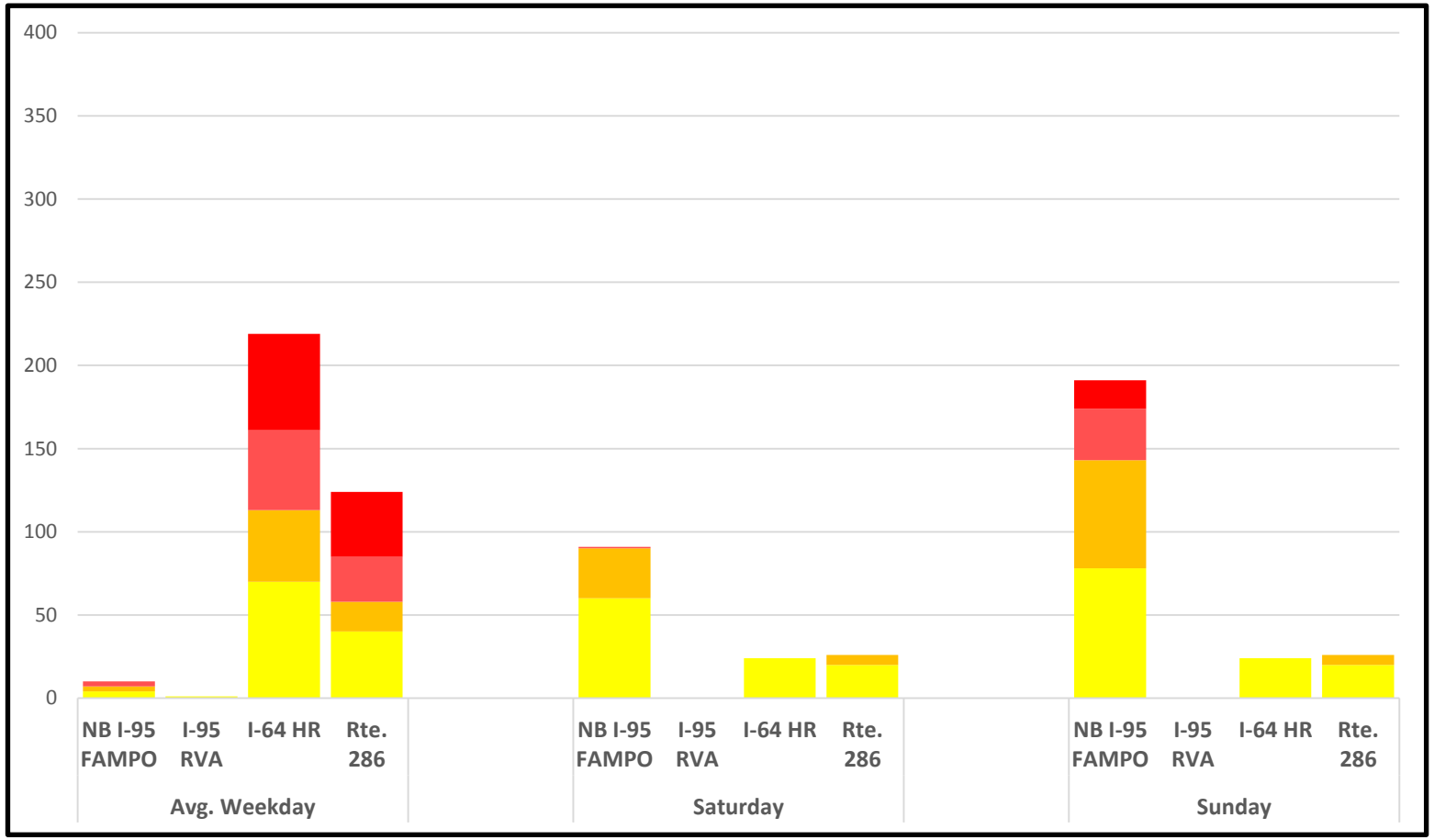
I-64 EB



I-64 WB



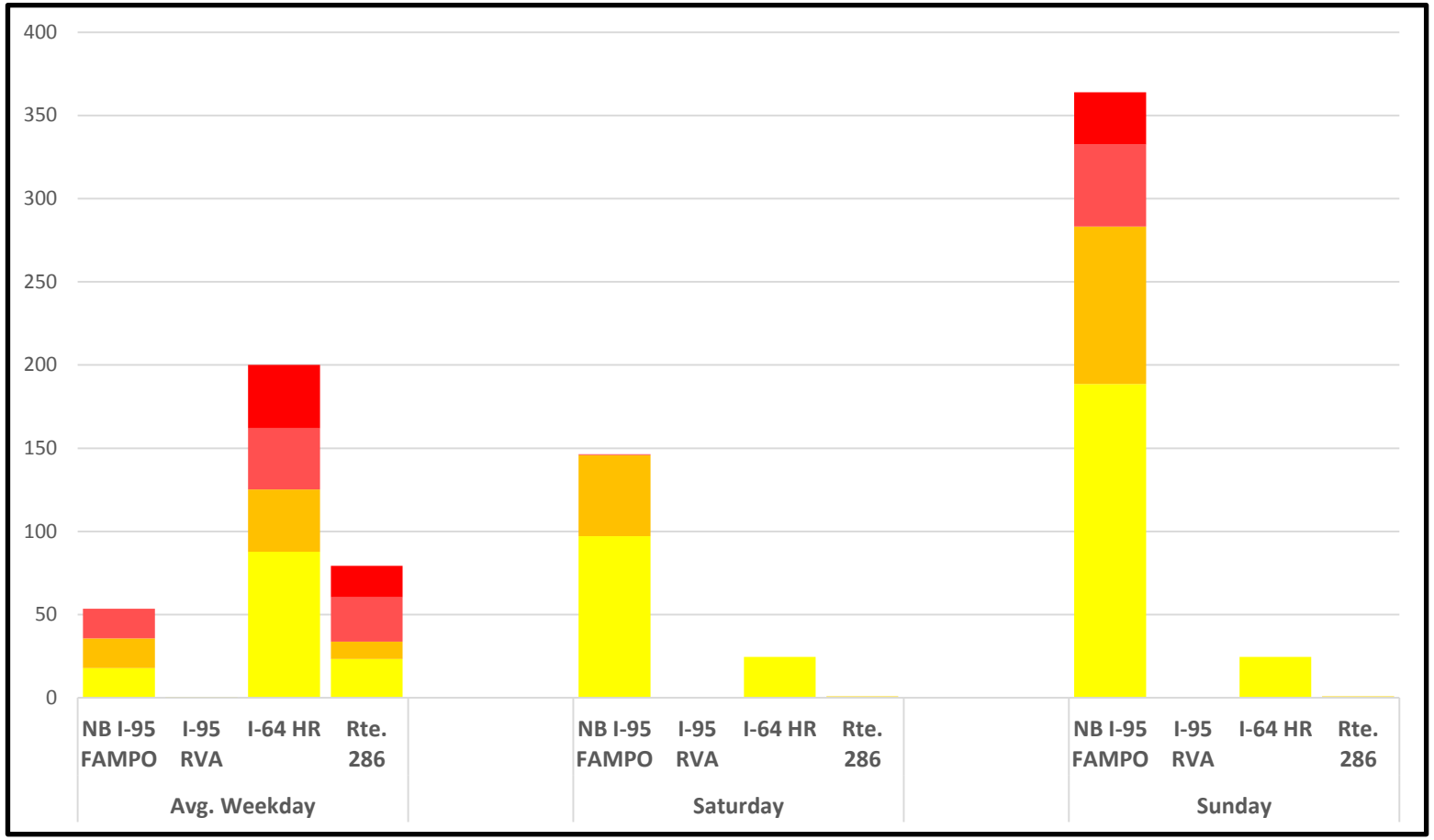
Number of Congested 15 Minute Intervals (count the little boxes)
Both Directions



- All projects consider both directions of travel with the exception of I-95 FAMPO. Only NB is considered for I-95 FAMPO.

- Average Weekday is defined as Tuesday – Thursday.

Number of Congested 15 Minute Intervals (weighted by distance)
Both Directions



- All projects consider both directions of travel with the exception of I-95 FAMPO. Only NB is considered for I-95 FAMPO.

- Average Weekday is defined as Tuesday – Thursday.

Based on results from previous slide

	I-95 (RVA)	I-64 Chesapeake	Rte 286 (NoVA)
Average Weekday	✓	✗	✗
Saturday	✓	✓	✓
Sunday	✓	✓	✓

I-95 NB Rappahannock Crossing NOT more congested

I-95 NB Rappahannock Crossing IS more congested

Roadway 2015 AADTs (Average Annual Daily Traffic)

FAMPO I-95 Northbound: 74,000 vehicles per day

Route 286: 91,000 vehicles per day

RVA I-95: 116,000 vehicles per day

I-64: 84,000 vehicles per day

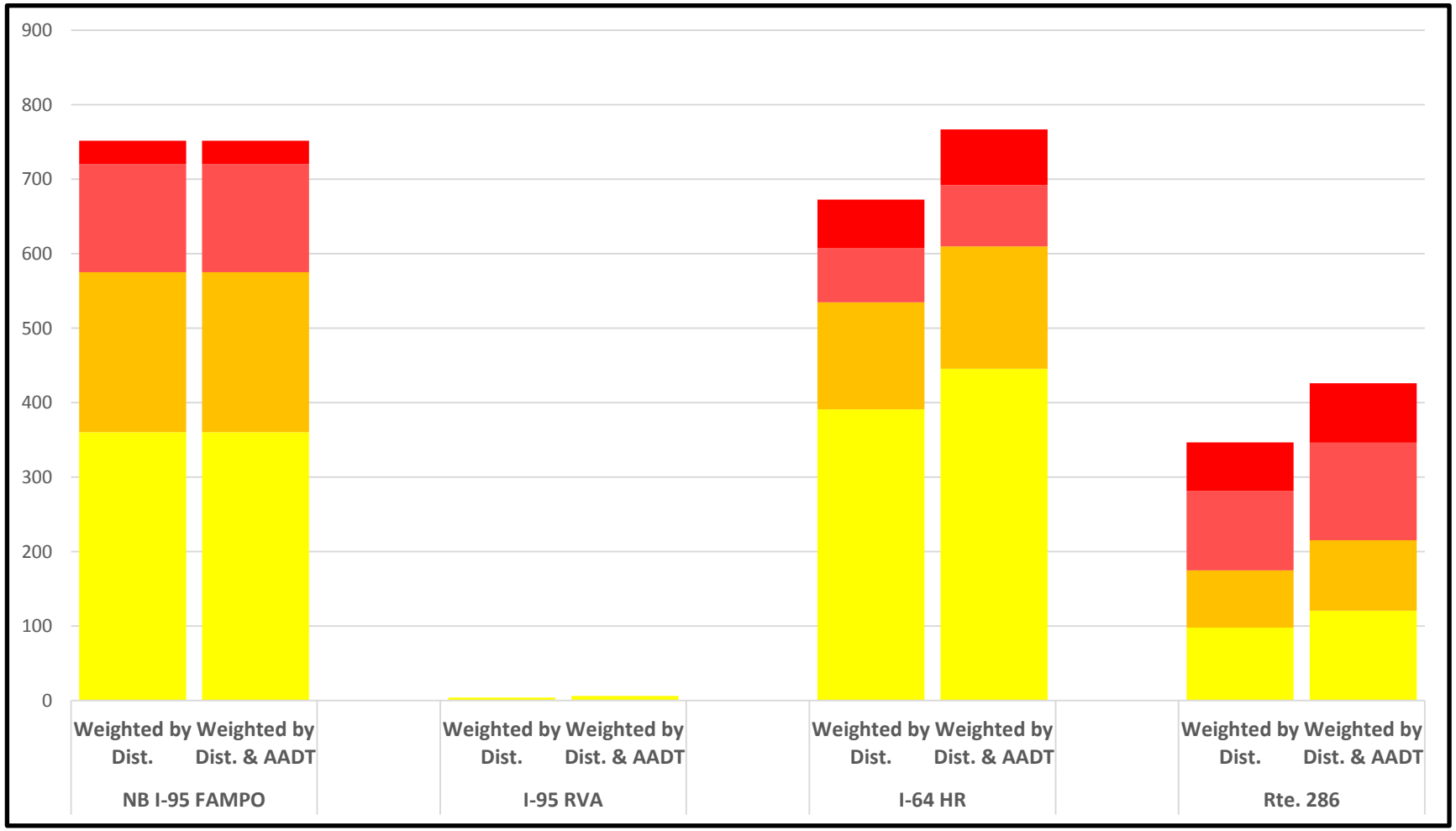
Roadway 2015 AADTs (Average Annual Daily Traffic)

FAMPO I-95 Northbound: 74,000 vehicles per day	Set as Baseline for comparison
Route 286: 91,000 vehicles per day	23% greater than Baseline
RVA I-95: 116,000 vehicles per day	57% greater than Baseline
I-64: 84,000 vehicles per day	14% greater than Baseline

Total Congestion

(Number of congested 15 minute intervals weighted by distance and by distance and AADT)

All days combined (Sunday - Saturday)



AADT for NB I-95 FAMPO is only for NB. All other AADTs are for both directions.

Total Congestion

(Number of congested 15 minute intervals weighted by distance and by distance and AADT)

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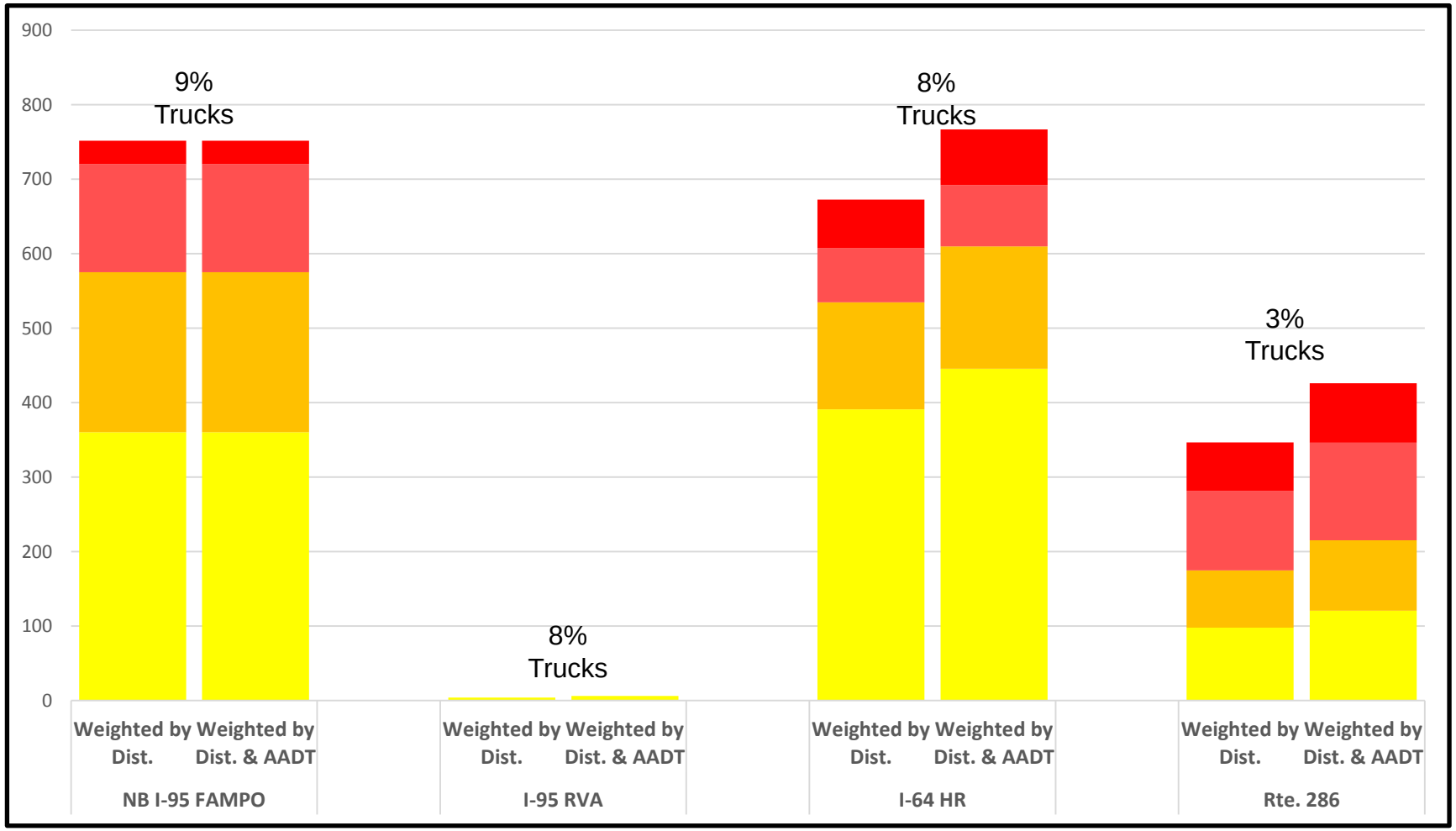

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