SERPM 8 Model Status

presented to

RTTAC-MS

presented by

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Outline

- Status overview

- Validation and sensitivity test update

- Next steps

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Project status

- Input data complete

- Model development complete

- Model updated and delivered for use in LRTP development

- Model sensitivity testing complete

- Current activity
  - » Model documentation and application support
  - » TNC scenario experiments

- Bi-weekly maintenance calls
  - » starting Monday, Feb 4 - 3-3:45pm

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Documentation

➤ Online documentation (https://sites.google.com/site/serpm8reference/)

➤ Development and Validation tech report

➤ Application and Maintenance Guide

➤ Parameters and Structure Guide

➤ Executive Summary

Known issues in current model (11/5/18) catalog

- Older VoyagerFileAccess.DLL included
  - » May cause problems when running on Windows10 / Server2012 systems

- Does not include vcredist_x64.exe in distribution

- Scenario default key values for Toll adjustments and Early AM period capacity factors are incorrect

- HOT=99 not excluded from assignment
  - » E+C and XCF networks use this to denote unavailable HOT access/egress links – Base network uses turn penalties.

- Windows 10 reports does not use full processor capability

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Validation and Sensitivity Test Update

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Transit resolution

Latest (11/5/2018) Base year showed increase in Metrorail and decrease in Metromover from previous presented results (9/15/2018)

- Recalibration to increase East-West flows and better match highway screenlines also generated more to/from CBD trips and fewer intra-CBD trips

OD Flow Difference		Miami-Dade					
		North	CBD	NorthWest	Central	West	South
Miami-Dade	North	-59,636	22,774	34,008	15,371	1,116	3,208
	CBD	20,414	-32,141	7,802	14,329	848	2,748
	NorthWest	33,960	7,078	-44,144	24,990	3,496	-704
	Central	16,263	13,013	24,230	-96,847	22,836	14,390
	West	1,592	664	3,508	22,825	-44,704	10,888
	South	3,452	2,780	-1,356	14,330	10,952	-27,260

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Sensitivity test summary

➤ Regionwide transportation cost change

» Both direct and indirect impacts on travel

➤ Socioeconomic and demographic change

» Impacts entire modeling process from PopSyn through Assignment

➤ Location specific socioeconomic or transportation supply change

» "Dynamic" sensitivity testing
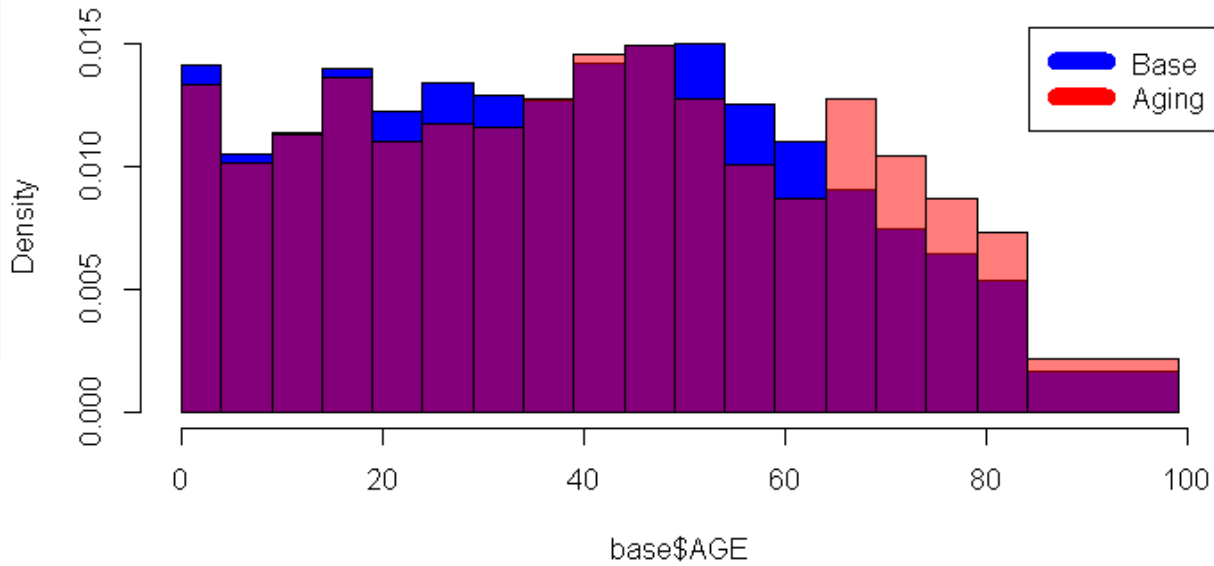
» Localized impacts

Transit sensitivity

➤ Reduce transit fare by 50%

➤ 20% increase in transit trips – elasticity around -0.4

➤ Small (-.23%) change in overall VMT

	VMT Change
Miami-Dade	-0.441%
Broward	-0.194%
Palm Beach	-0.042%

Tour Purpose	Percent Difference [(TransitFare - Baseline) / Baseline]
Work	
Auto	-0.7%
Transit	20.2%
Non-Motorized	-3.3%
University	
Auto	-0.9%
Transit	10.2%
Non-Motorized	-2.2%
School	
Auto	-0.5%
School Bus	-0.1%
Transit	25.3%
Non-Motorized	-1.4%
Home-Based Non-Mandatory	
Auto	-0.2%
Transit	14.2%
Non-Motorized	-0.5%
AT_WORK	
Auto	-0.5%
Transit	22.9%
Non-Motorized	1.0%
Visitors	
Private Auto	-0.5%
TNC	-0.8%
Transit	29.9%
Non-Motorized	0.0%

Aging demographic

Age Distribution

Legend: Base (blue), Aging (red)

Aging Sensitivity Test - Person Type

Categories (top to bottom):
- Non-working senior
- Driving age student
- College student
- Non-driving student
- Non-working adult
- Pre-school
- Part-time worker
- Full-time worker

Legend: Aging, Base

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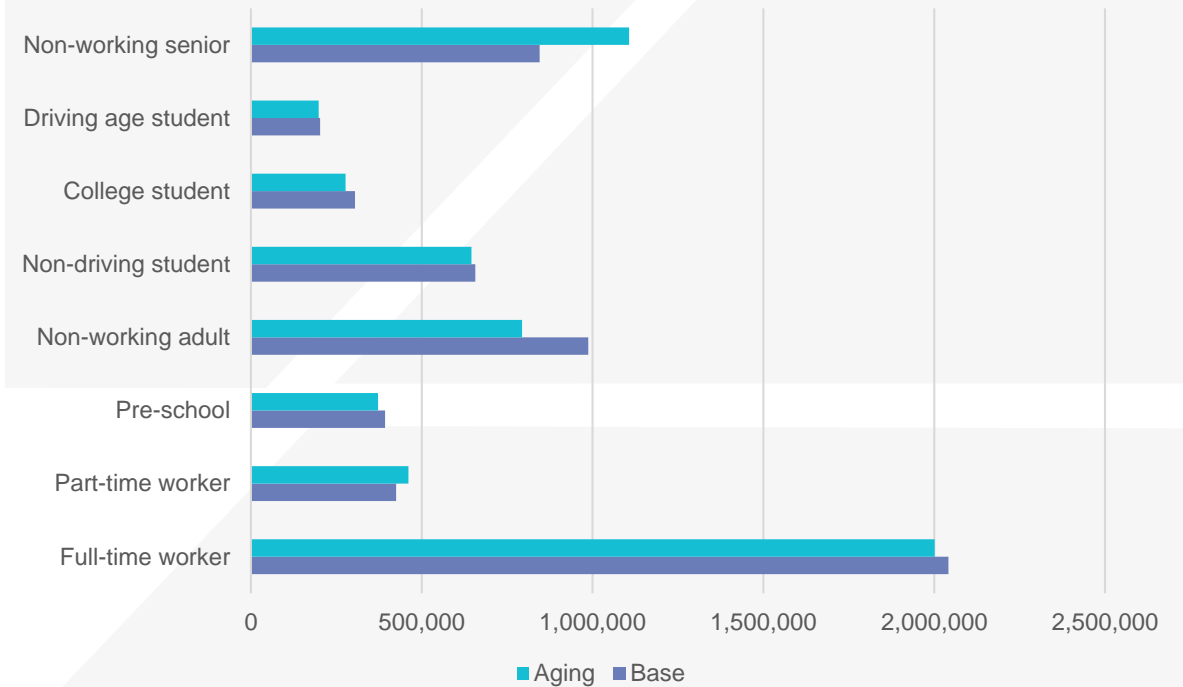
Aging demographic
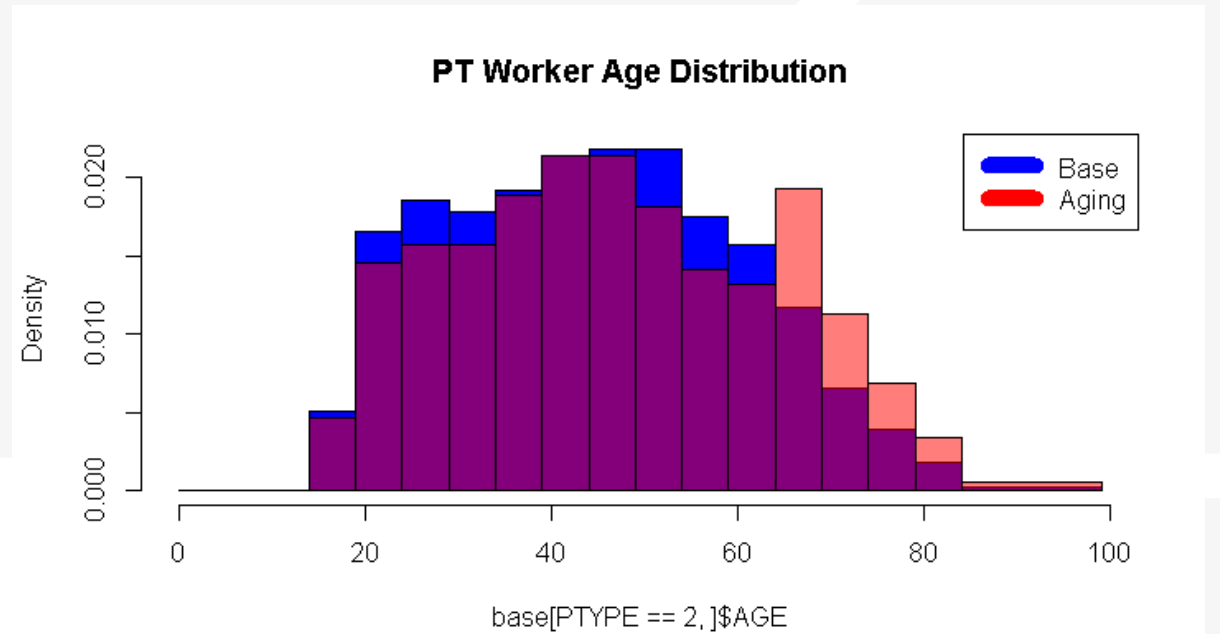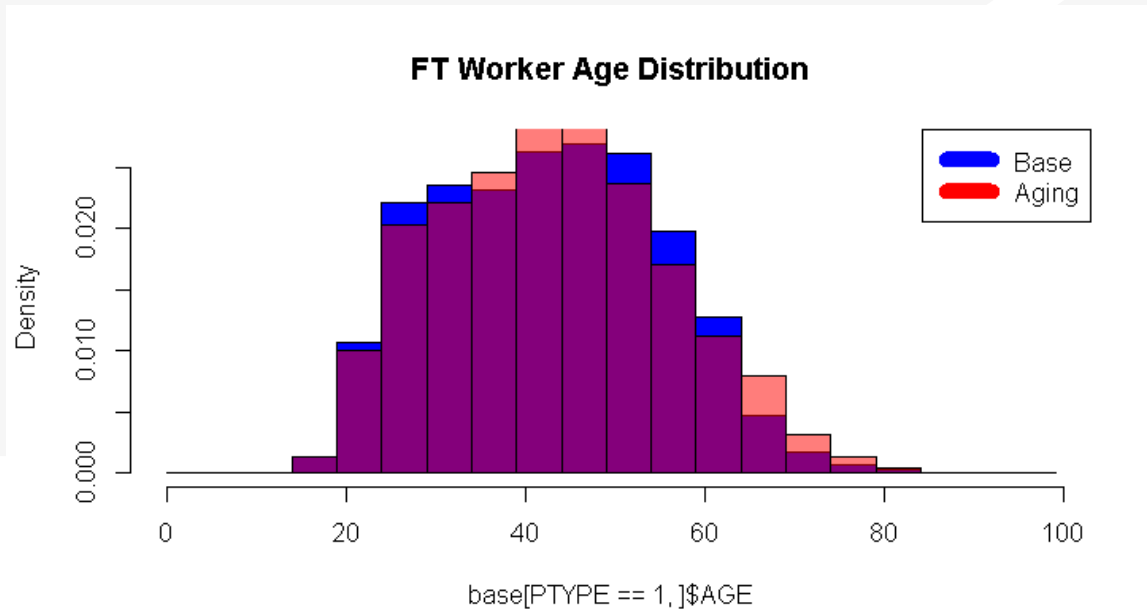
Average Age	Base	Aging
Full-time worker	43.10	43.70
Part-time worker	45.13	47.65

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Aging scenario results

Tour Categories	AgingPop	Base	Change in Tours
MANDATORY	3,291,884	3,344,528	-2%
INDIVIDUAL_NON_MANDATORY	2,991,016	2,999,864	0%
JOINT_NON_MANDATORY	606,984	602,656	1%
AT_WORK	278,080	286,344	-3%
Total Tours	7,167,964	7,233,392	-1%

VMT	AgingPop	Base	Change
Palm Beach	31,981,764	32,304,812	-1.00%
Broward	37,789,591	38,103,986	-0.83%
Miami-Dade	45,640,000	46,133,316	-1.07%
All Groups	115,442,230	116,573,563	-0.97%

VHT	AgingPop	Base	Change
Palm Beach	45,629,959	46,223,150	-1.28%
Broward	58,796,962	59,468,640	-1.13%
Miami-Dade	87,463,440	89,054,972	-1.79%
All Groups	191,890,361	194,746,761	-1.47%

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I-75 – managed lane scenario

I-75 Managed Lanes added between 595 and Turnpike

2 lanes each direction, access/egress at ends and 1 midpoint between 818 and 822

Opened after 2015 and by the end of 2017
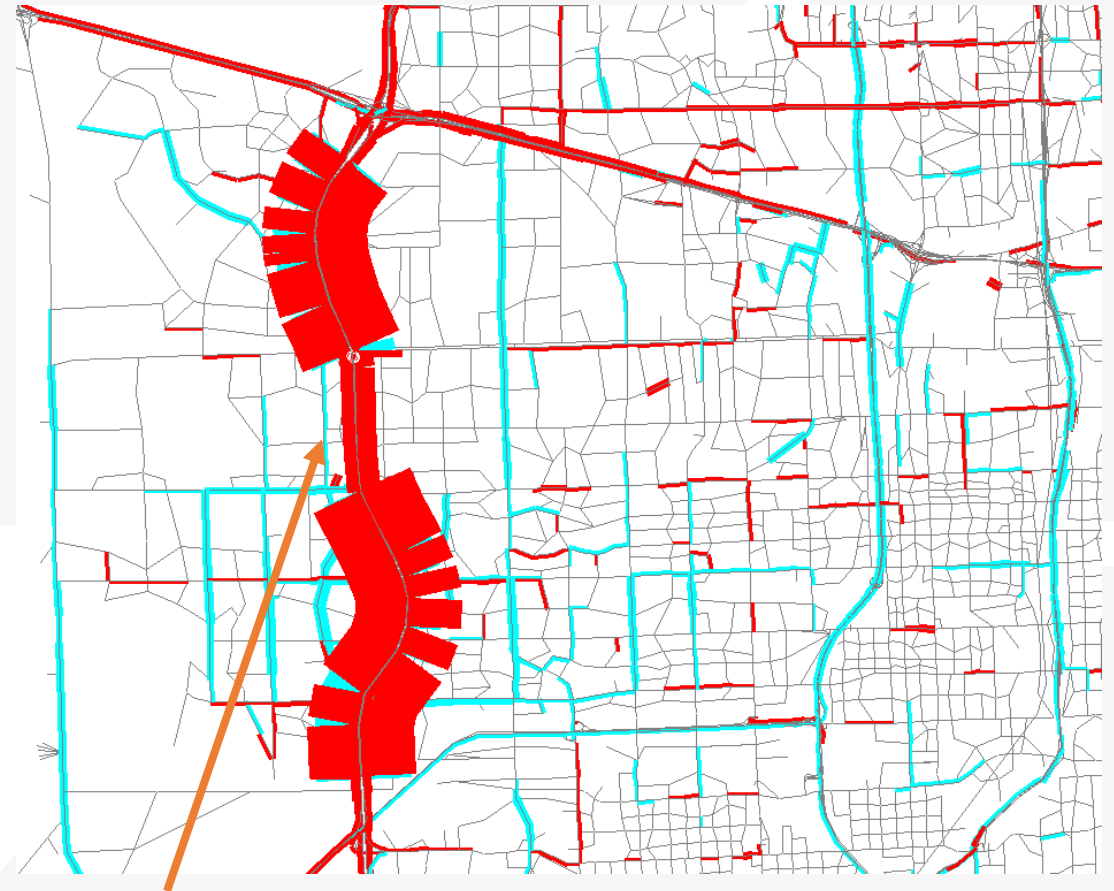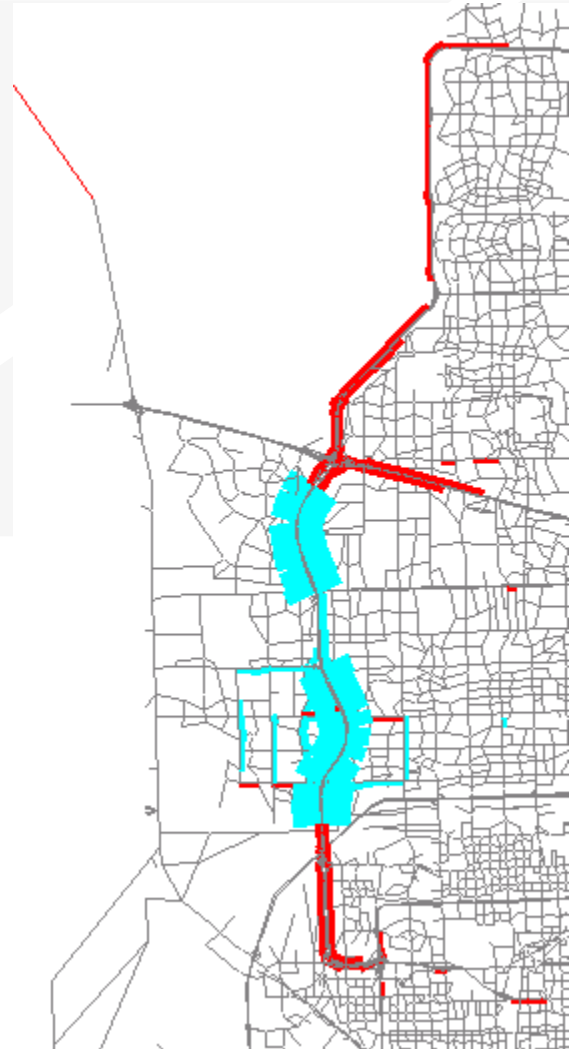
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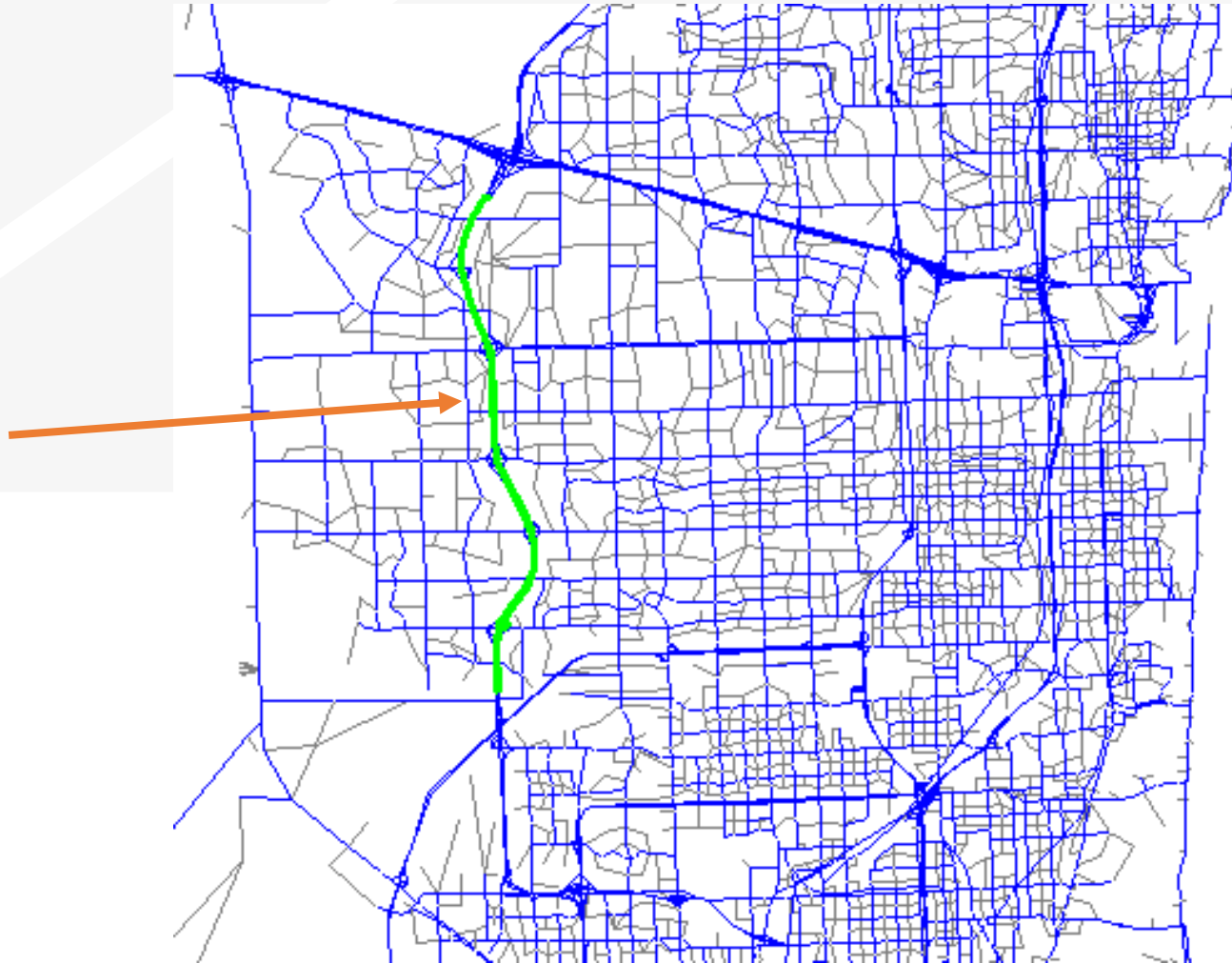
I-75 ML scenario results

Daily volume changes (red – increase, blue - decrease)

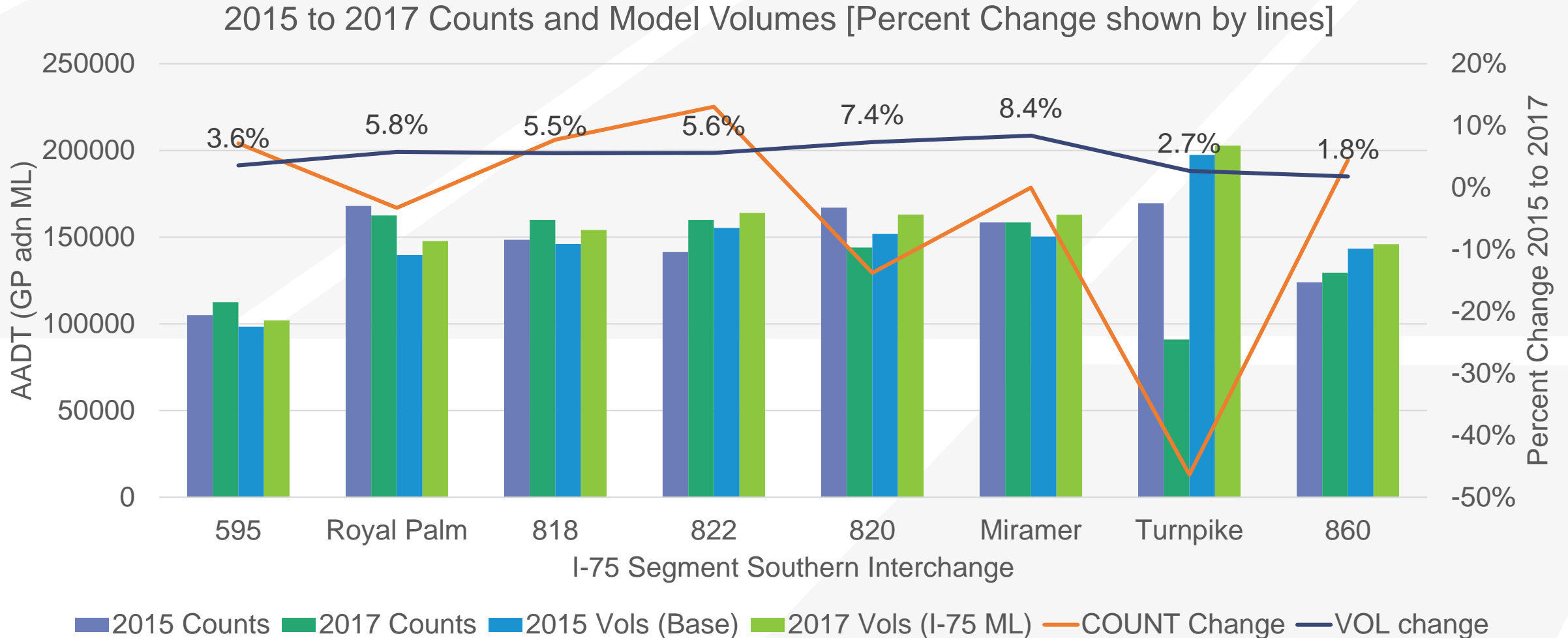GP lane decreases dominate through the corridor

Max difference 22.5K

Less shift at mid-point access/egress due to toll-by-distance

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I-75 ML scenario results

2015 to 2017 Counts and Model Volumes [Percent Change shown by lines]

Legend: 2015 Counts | 2017 Counts | 2015 Vols (Base) | 2017 Vols (I-75 ML) | COUNT Change | VOL change

X-axis: I-75 Segment Southern Interchange — 595, Royal Palm, 818, 822, 820, Miramer, Turnpike, 860

Percent labels: 3.6%, 5.8%, 5.5%, 5.6%, 7.4%, 8.4%, 2.7%, 1.8%

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Next Steps

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Next steps – application guidance

- Shadow pricing testing and application guidance

- Seed skim / loaded network usage guidance

- Model variability on different computers and thread counts – link level checks and application guidance

- Video-based tutorials

  » Setting up a scenario and starting a model run

  » Accessing reports

  » Viewing loaded networks and transit summaries

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Next steps – catalog improvements

➤ Incorporate SE data comparison

➤ Add checks on Voyager.exe existence

➤ Simplify assignment to remove pay/no-pay distinction

    » Review changing toll calculations with Turnpike

➤ Default to running max threads with user option to limit

Questions

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