



CAMBRIDGE
SYSTEMATICS

Think  Forward

Virginia Statewide Transportation Model

presented to

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presented by

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Objectives

- ➔ SMART SCALE and project prioritization
- ➔ Performance measures (accessibility and congestion)

Virginia's Travel Demand Model Responsibilities

CENTRAL OFFICE

- 1 Blacksburg/Christiansburg
- 2 Charlottesville
- 3 Danville
- 4 Fredericksburg
- 5 Hampton Roads
- 6 Harrisonburg
- 7 Lynchburg
- 8 Richmond/Tri-Cities
- 9 Roanoke
- 10 Winchester
- 11 Richmond/Hampton Roads Super Region
- 12 Statewide (not being shown in this map)

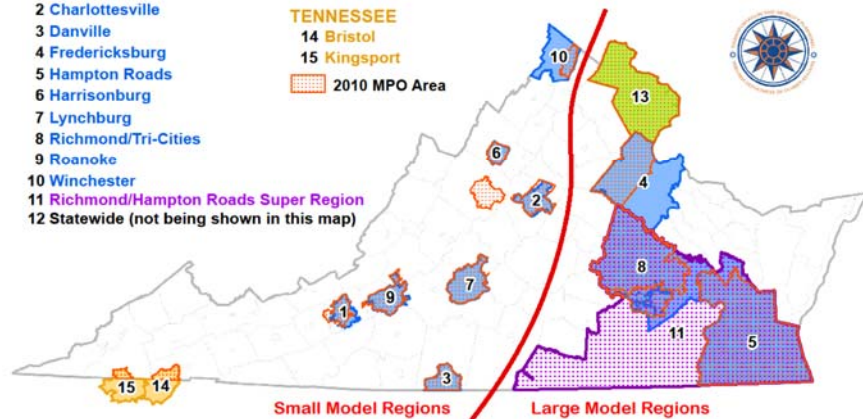
NOVA/MWCOG

- 13 Northern Virginia

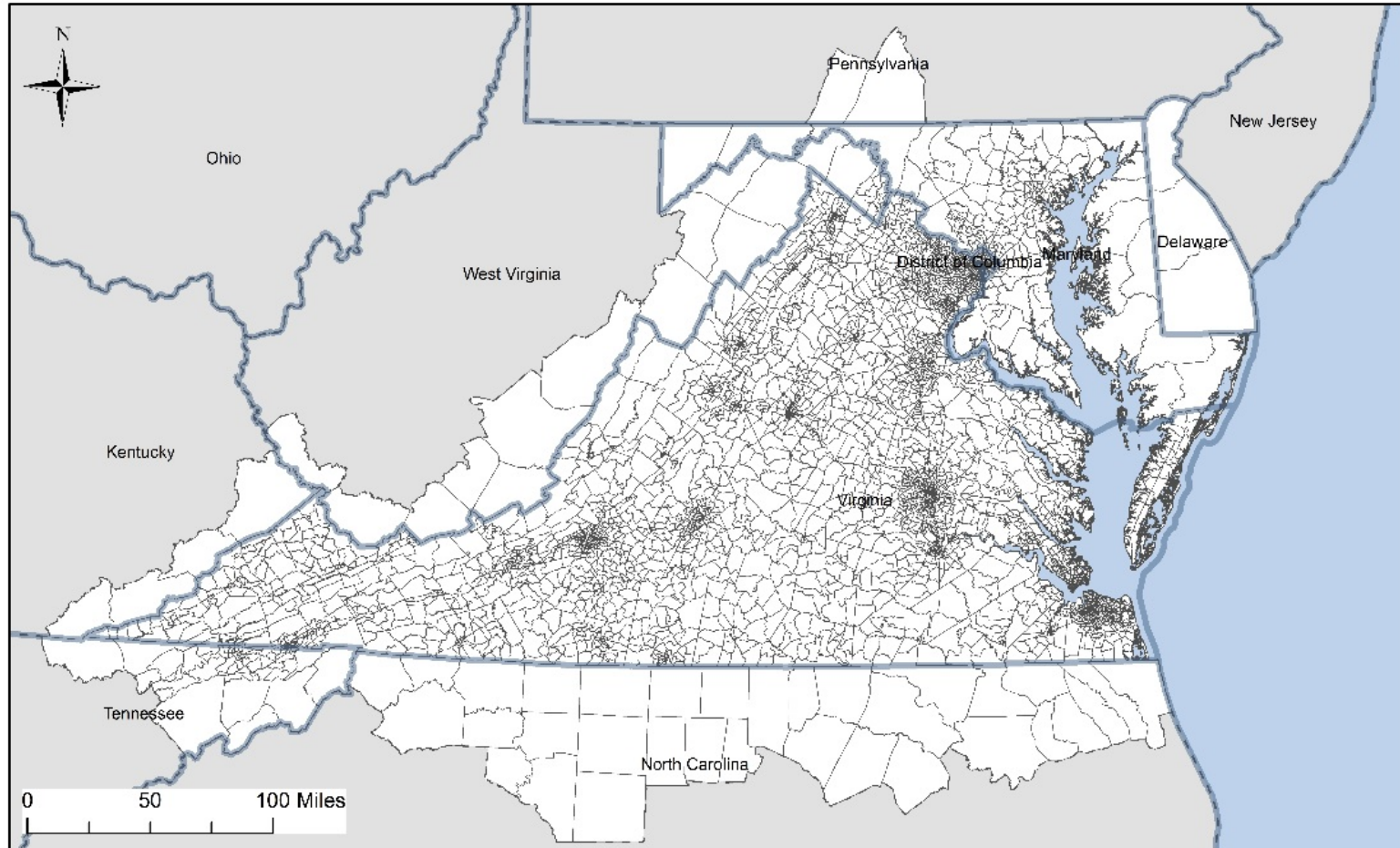
TENNESSEE

- 14 Bristol
- 15 Kingsport

2010 MPO Area





Model Domain (Passenger Travel)



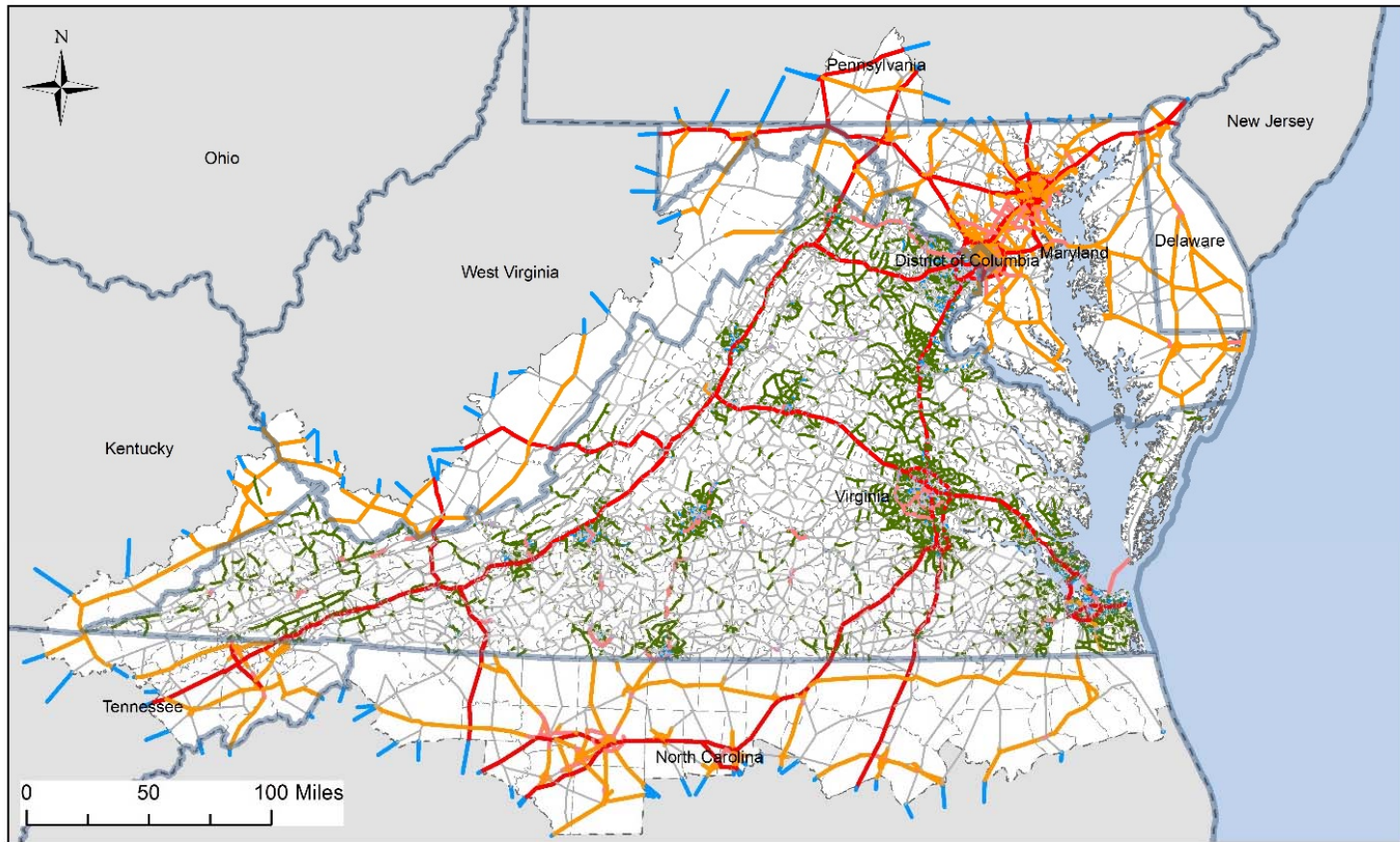
Virginia Statewide Model

Features




-  States
-  Traffic Analysis Zones in VA and Adjacent Areas



Model Network



Features

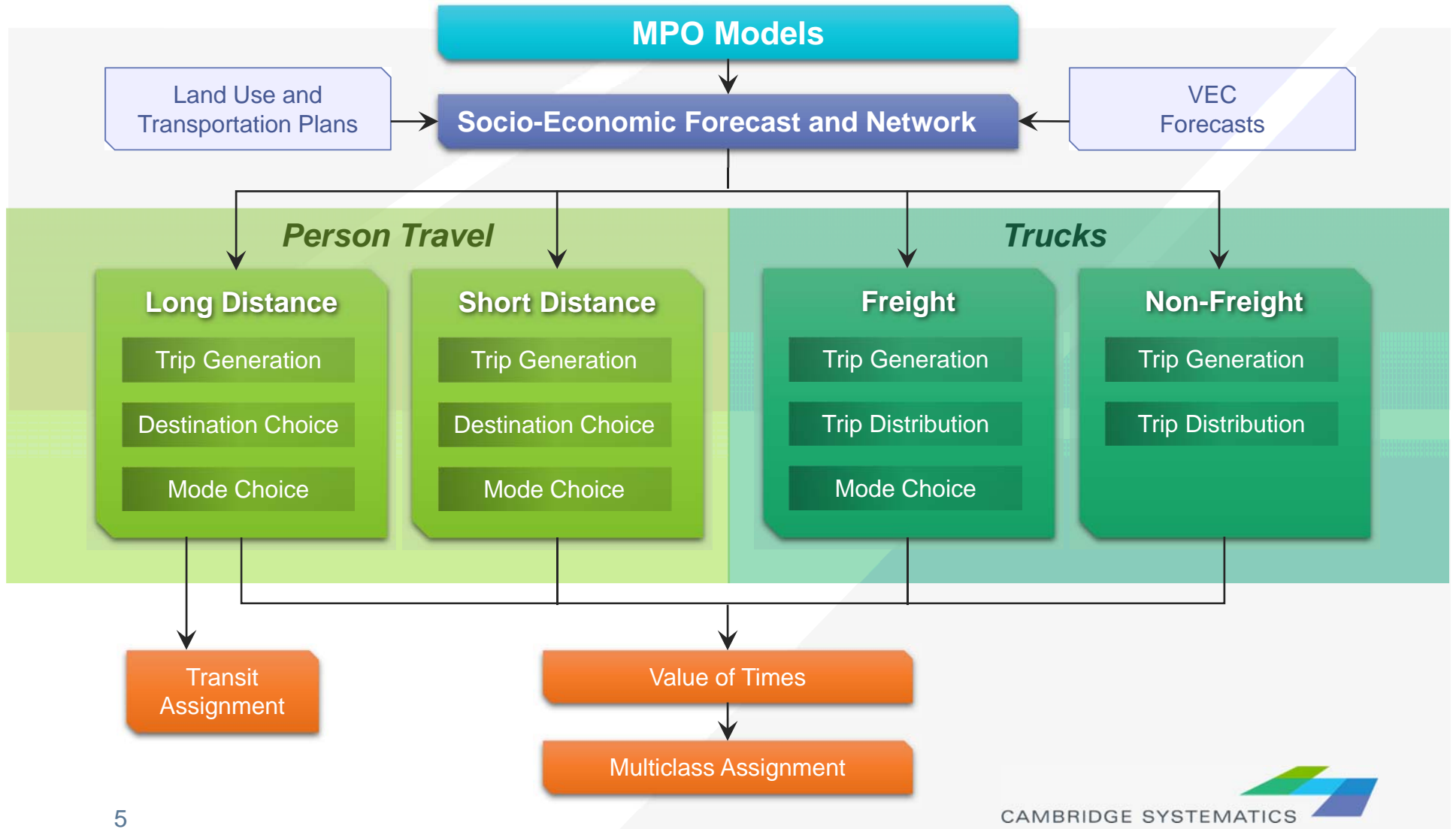
-  States
-  Traffic Analysis Zones in VA and Adjacent Areas
-  Traffic Analysis Zones

FACTYPE

-  Interstate
-  Minor Freeway
-  Principal Arterial/Highway
-  Major Arterial/Highway
-  Minor Arterial/Highway
-  Collector
-  Local
-  Ramp
-  External Station Connector

Virginia Statewide Model

Structure and Functionalities



Modeling Features

- Consistent framework for representing short and long distance passenger travel markets in terms of using the logit-based model structure
- Consistent use of NHTS, accessibility measures and socioeconomic variables in model estimation
- Big data in model development and validation:
 - » special generators
 - » external travel
 - » intra-state truck trips

Modeling Features

- Value of time segmentation is implemented in the assignment processes to reflect the sensitivity of tolls in route choice between toll and non-toll facilities
- Commodity based freight modeling with a logit-based mode choice model

