



Baltimore  
Metropolitan  
Council

# SHRP2 C20 Maryland Behavior Based Freight Model: Update



Maryland Department of Transportation

Freight Movement Task Force Meeting

May 26, 2016

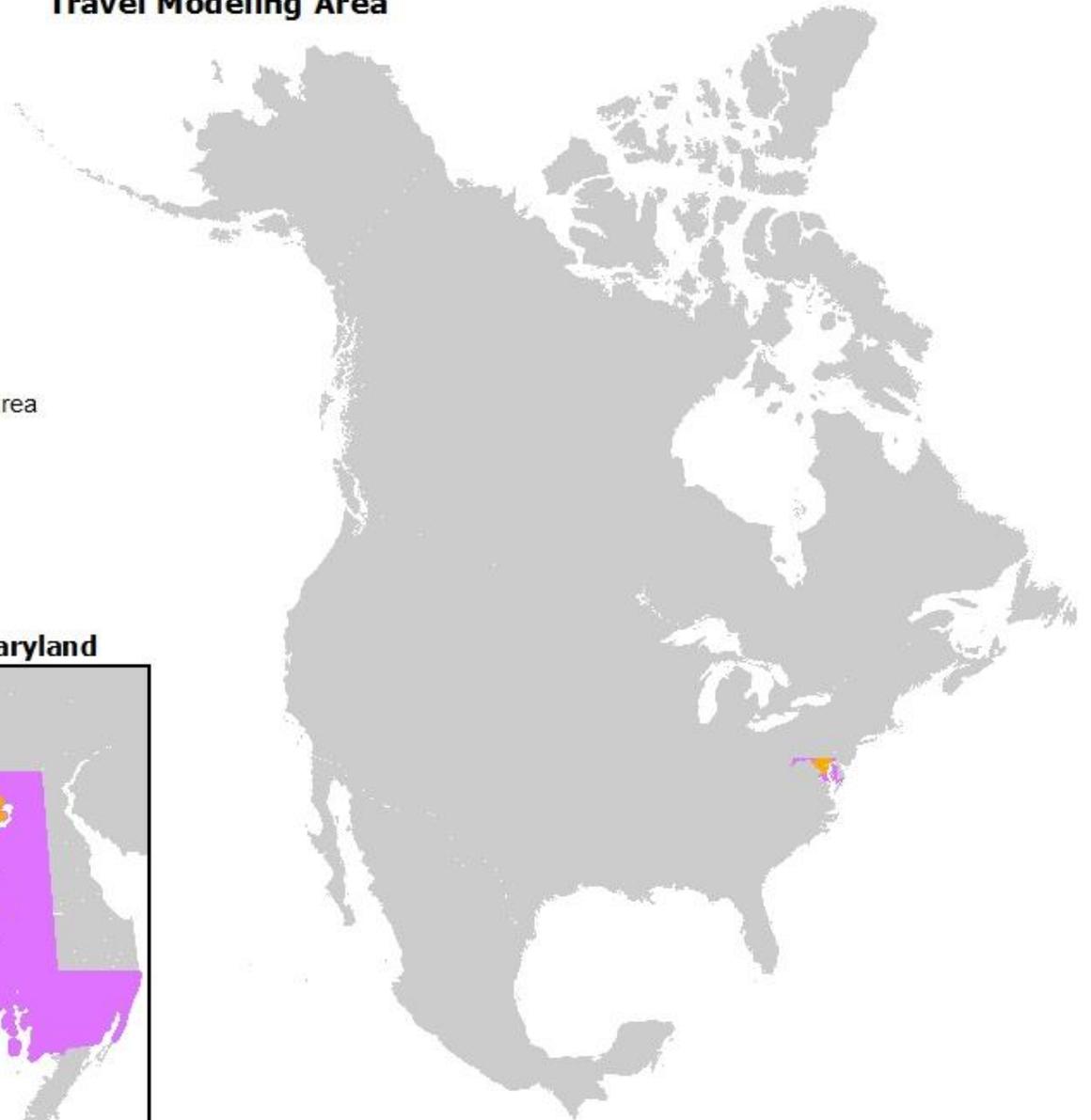
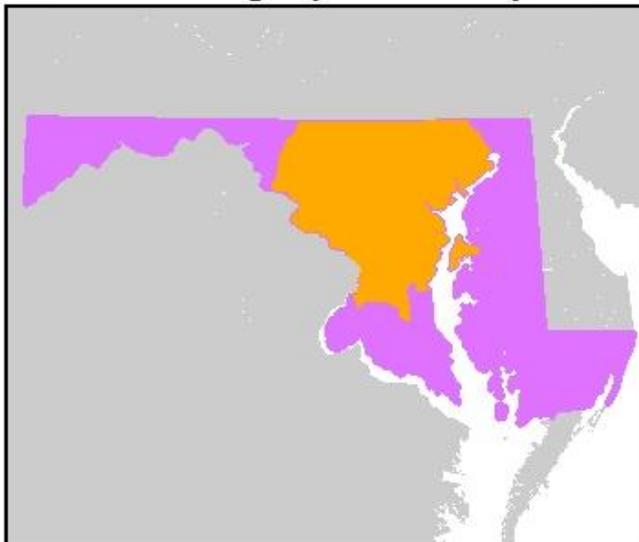


# Baltimore Metropolitan Council & Maryland State Highway Administration Travel Modeling Area

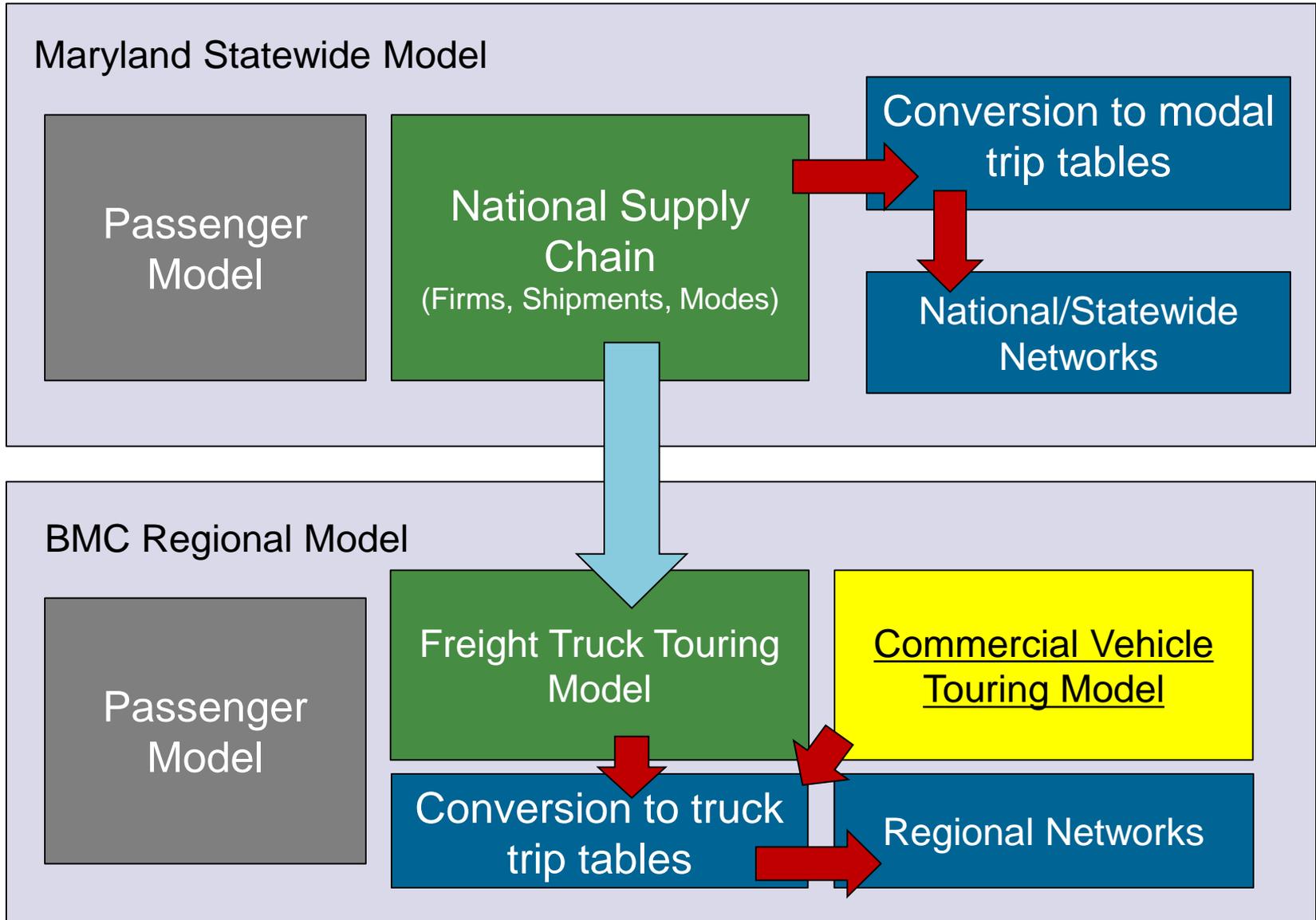
## Legend

-  BMC Model Area
-  SHA Model Area
-  SHA External Model Area

## Baltimore Region/State of Maryland

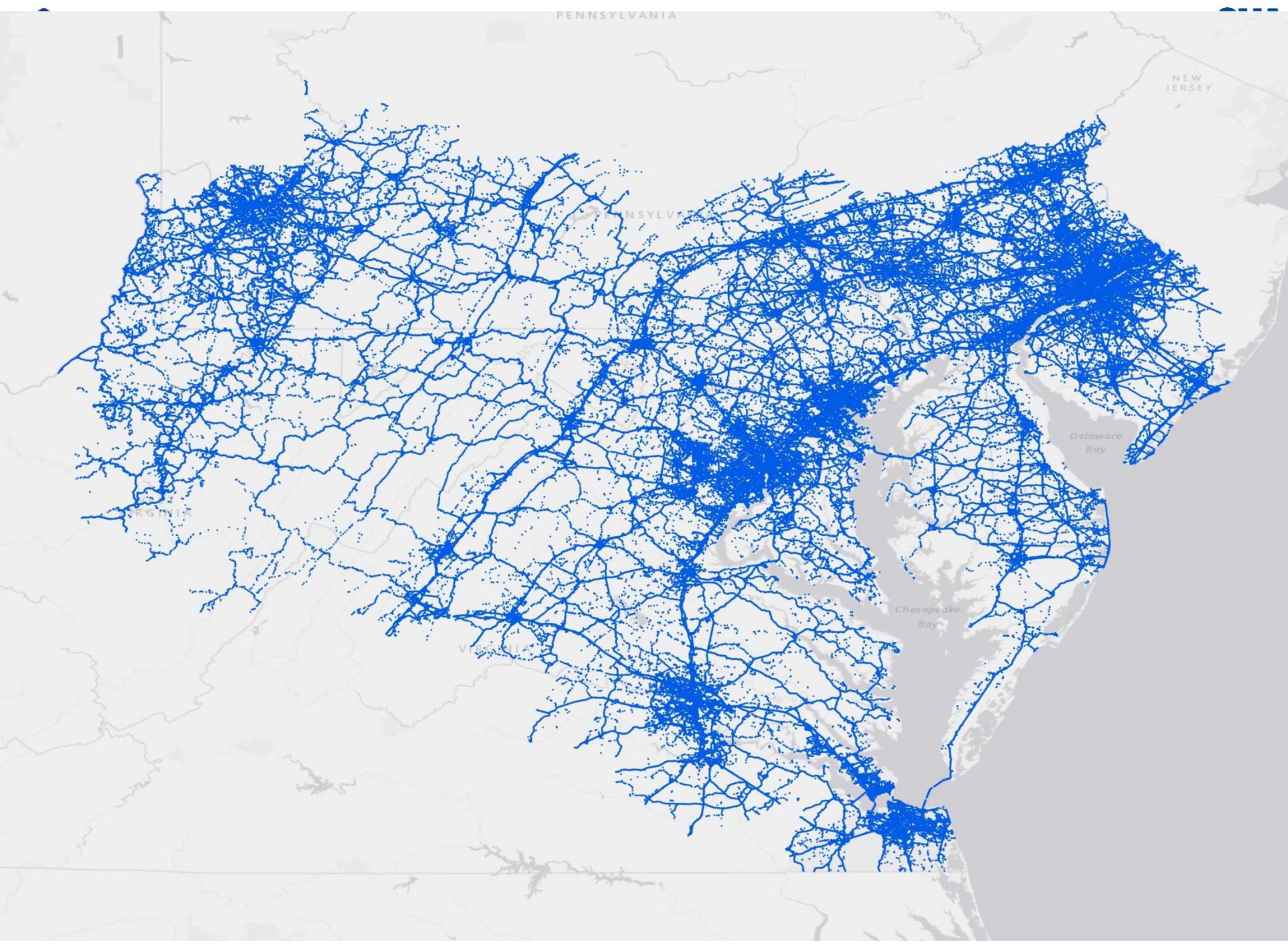


# Freight Model: Model Design



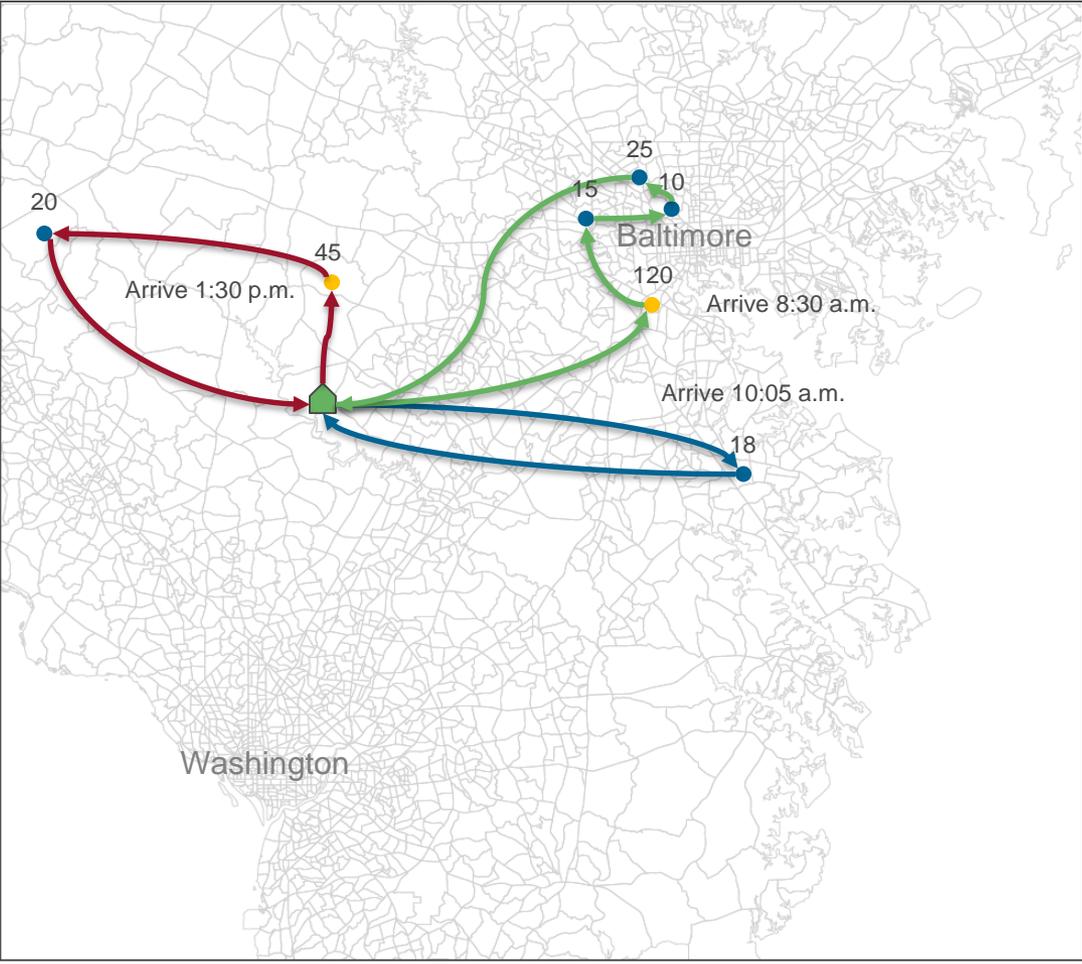
# Freight Model: Data

- **Business Data**
  - Establishment Survey: 2003 Ohio Statewide General Establishment Survey
  - Logistics Nodes: Intermodal facilities, warehouses and distribution center locations / [Leonard's Guide](#), [Bureau of Transportation Statistics](#) (BTS), [Center for Transportation Analysis](#) (CTA) & Maryland county planning departments
  - Employment: [Longitudinal Employer-Household Dynamics](#) (LEHD) / US Census
- **Freight Flow Data**
  - Goods Movement: 2012 [Freight Analysis Framework](#) (FAF) / FHWA & BTS
- **Modal Data**
  - Truck - Traffic Counts: [SHA](#), [MdTA](#) & [BMC](#)
  - Truck - GPS: [American Transportation Research Institute](#) (ATRI)
  - Port: 2012 State and Port Cargo Movement Data / US Army Corps of Engineers
  - Air: 2012 Air Freight Data ([T100](#)) / BTS

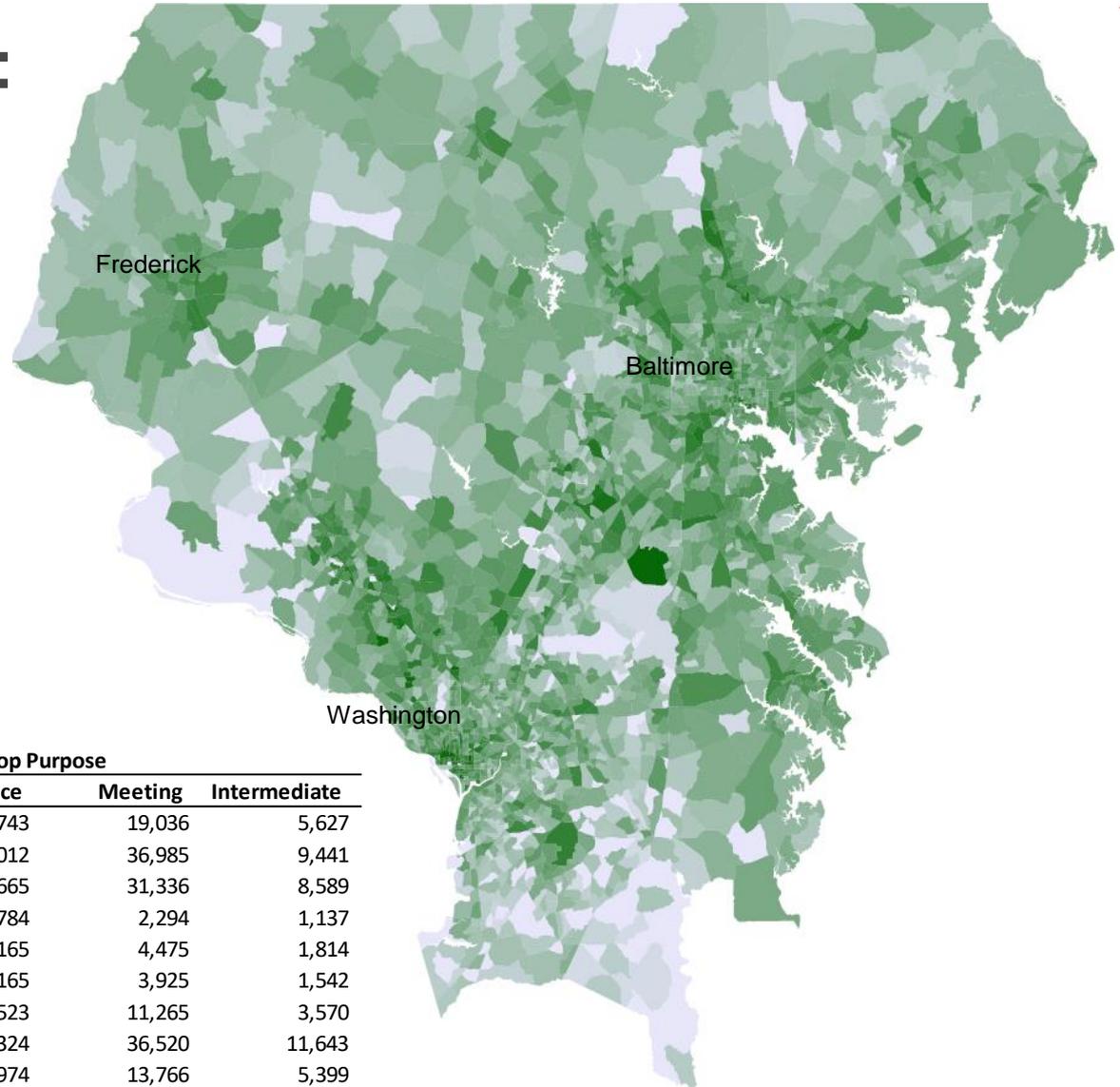


# BMC Commercial Vehicle Component

A portion of the model area



# Freight Model: Outputs

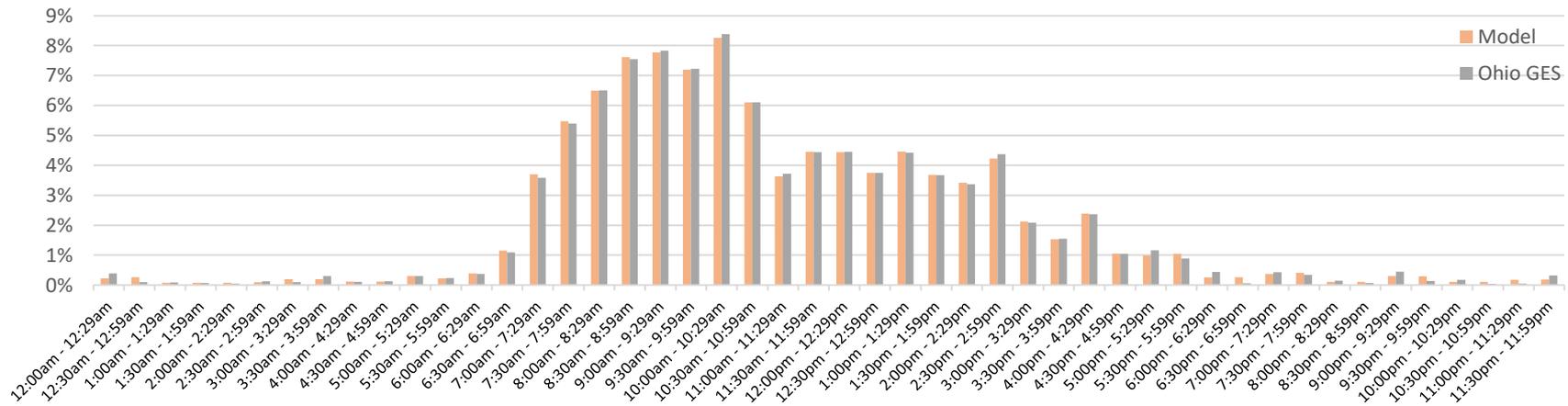


County	Stop Purpose			
	Goods	Service	Meeting	Intermediate
Anne Arundel County, MD	28,972	30,743	19,036	5,627
Baltimore City, MD	29,781	57,012	36,985	9,441
Baltimore County, MD	40,935	58,665	31,336	8,589
Carroll County, MD	3,467	6,784	2,294	1,137
Frederick County, MD	5,802	11,165	4,475	1,814
Harford County, MD	4,124	10,165	3,925	1,542
Howard County, MD	17,811	21,523	11,265	3,570
Montgomery County, MD	56,734	83,324	36,520	11,643
Prince George's County, MD	19,881	31,974	13,766	5,399
District of Columbia	52,629	143,370	70,374	19,004
<b>Total</b>	<b>260,136</b>	<b>454,725</b>	<b>229,976</b>	<b>67,766</b>

# Freight Model: Outputs

Vehicle Shares (All Activities)

	Simulation				Ohio GES			
	N (stops)	Light	Medium	Heavy	N (stops)	Light	Medium	Heavy
Agriculture	688	40%	53%	7%	1,007	40%	52%	8%
Construction	82,675	71%	22%	8%	606	71%	22%	8%
Government	49,513	90%	7%	3%	1,112	90%	7%	3%
Health	61,102	96%	4%	0%	302	96%	4%	0%
Hotel & Real Estate	36,115	93%	7%	0%	130	93%	7%	0%
Manufacturing	7,373	37%	35%	28%	211	36%	35%	29%
Other Services	247,519	89%	10%	2%	629	89%	9%	2%
Retail	249,715	68%	21%	11%	320	68%	21%	11%
Transportation Handling	35,051	4%	22%	74%	349	4%	22%	74%
Wholesale	46,368	29%	46%	25%	2,754	29%	46%	25%
<b>Overall</b>	<b>816,119</b>	<b>74%</b>	<b>16%</b>	<b>10%</b>	<b>7,420</b>	<b>74%</b>	<b>18%</b>	<b>8%</b>



# Freight Model: Applications / Implementation - BMC

- **Modeling**
  - Assess travel and economic benefits of freight infrastructure improvements
  - Create visuals of Goods and service delivery at TAZ-level
- **Environmental**
  - Emissions analysis (additional detail on vehicle type for freight travel)
  - Enhanced mode choice capability (addition of rail, water and air cargo modes)
- **Stakeholder Outreach**
  - Address local issues with last mile access and egress to freight facilities
  - Assess rail access constraints in Baltimore region

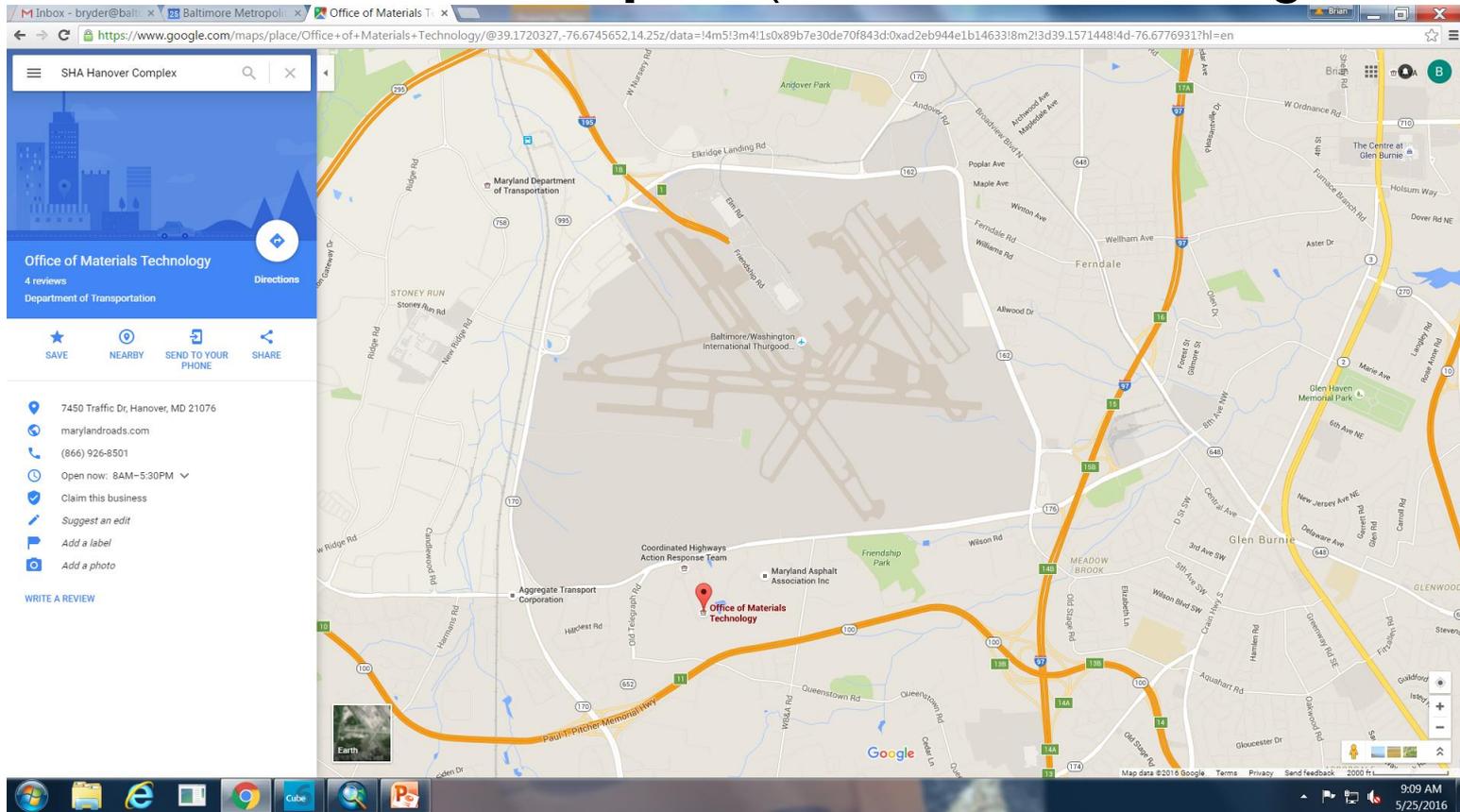
# Freight Model: Applications / Implementation - SHA

- **Modeling**
  - Volume and value of freight flows (current and future)
- **Trends**
  - Effect of supply chains, supply-demand interactions, external variables and agency policies
  - Balancing of goods and people movement, relation of freight to regional, statewide and national economy
- **Performance Management**
  - Infrastructure needs, effects for freight movement and economic value added
  - Communication and messaging of transportation investments

# Freight Stakeholder Briefing

Friday, June 17<sup>th</sup> – 10:00 am to 12:00 pm

## SHA Hanover Complex (OMT/OOC Training 3 O134)





## Contacts

[www.rsginc.com](http://www.rsginc.com)

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