MARYLAND DEPARTMENT OF TRANSPORTATION

STATE FREIGHT ADVISORY COMMITTEE

presented to

Members of the Committee

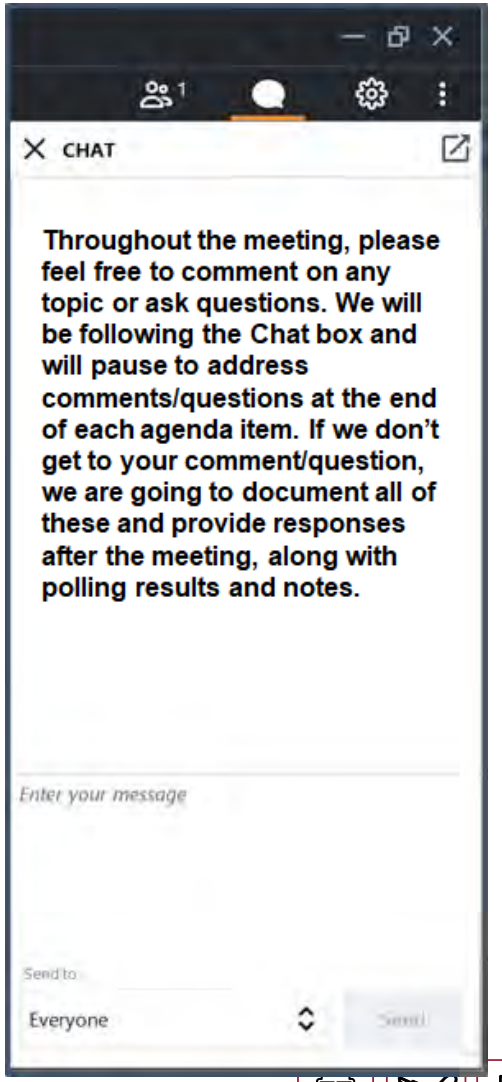
presented by

MDOT

WEDNESDAY, SEPTEMBER 1, 2021

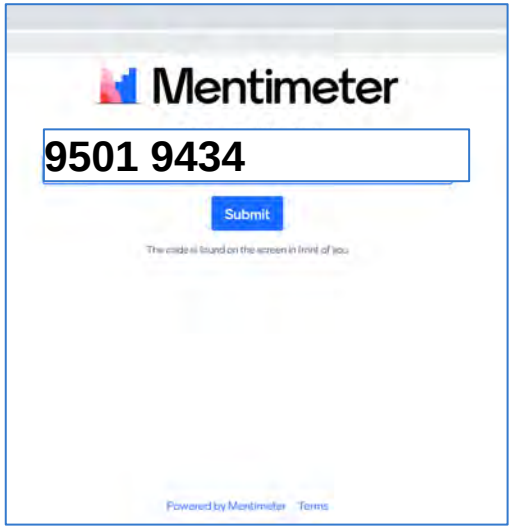
MEETING LOGISTICS

- Keep your computer/phone on mute
- Please keep your video off until/unless you are presenting
- Use Teams Chat window to share questions/thoughts
- We will pause at the end of each agenda topic/presentation to address comments/questions as time allows
- For Chat comments we do not address, we will document all comments and provide responses in meeting notes

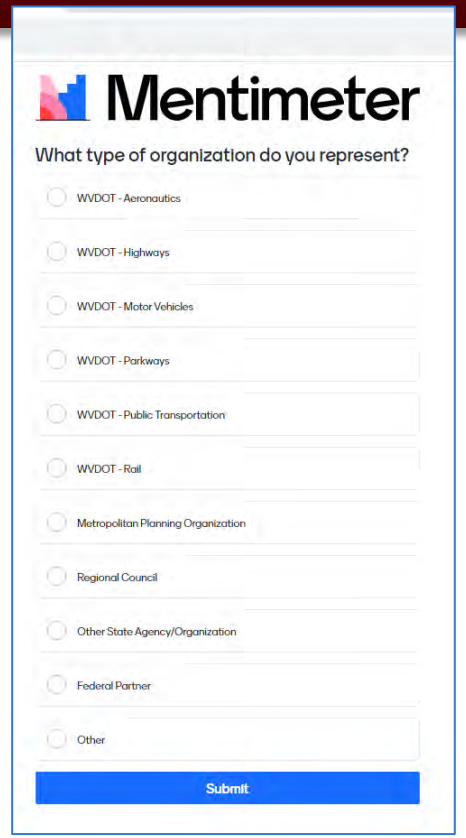


HOW TO POLL ON MENTI

1. Go to www.menti.com on any device with internet
2. Enter the code **9501 9434**



3. The first poll will open, follow the directions, when you are done, click Submit



4. The next poll will open once we are on that slide in the presentation

MARYLAND DEPARTMENT OF TRANSPORTATION

WELCOME & HEADLINES

Jeffrey Hirsch
MDOT Assistant Secretary
Office of Transportation Policy Analysis & Planning

STATE FREIGHT ADVISORY COMMITTEE

SB: 291 TRUCK PLATOONING

SB 726: PERSONAL DELIVERY DEVICES

DAIMLER, TRATON, VOLVO EV EFFORT

MARYLAND DEPARTMENT OF TRANSPORTATION

STATE OF THE PRACTICE

Personal Delivery Devices (PDDs)
Connected and Autonomous Vehicles
The Eastern Transportation Coalition

STATE FREIGHT ADVISORY COMMITTEE

MARYLAND DEPARTMENT OF TRANSPORTATION

Personal Delivery Devices

Jeff Cleland, State Transportation Public Policy
Amazon

STATE FREIGHT ADVISORY COMMITTEE

MEET SCOUT

MARYLAND DEPARTMENT OF TRANSPORTATION

Connected and Automated Vehicles in Freight

Nanette Schieke, CAV Program Manager, MDOT MVA
Louis Campion, President and CEO, Maryland Motor Truck Association

STATE FREIGHT ADVISORY COMMITTEE

MARYLAND DEPARTMENT OF TRANSPORTATION

STATE FREIGHT ADVISORY COMMITTEE MEETING OF SEPTEMBER 1, 2021

CONNECTED & AUTOMATED VEHICLE TECHNOLOGY INTEGRATION WITH FREIGHT PLANS

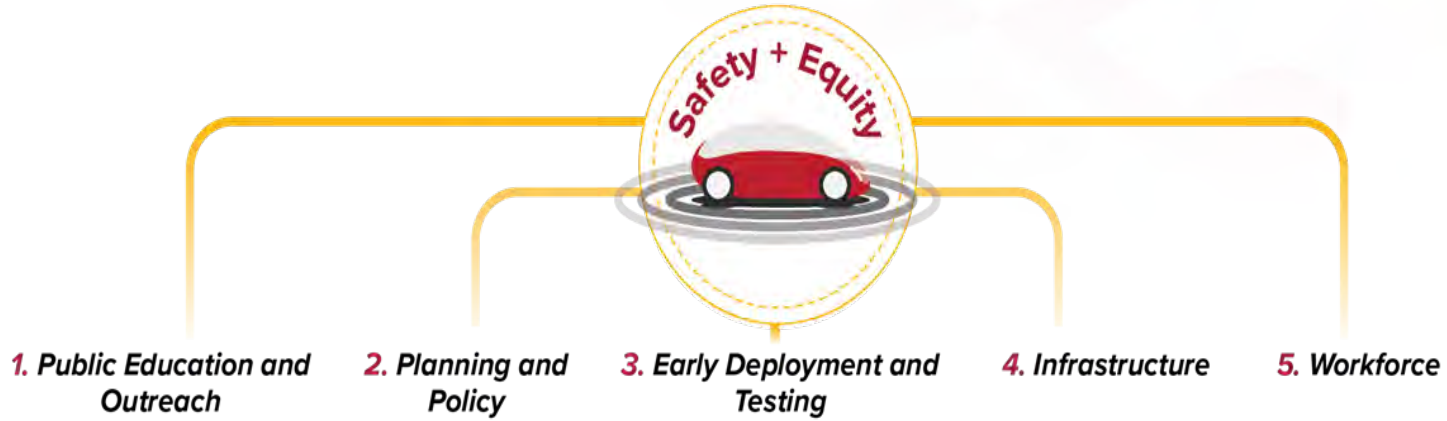
Louis Campion
President and CEO
Maryland Motor Truck Association

Nanette M. Schieke
CAV Program Manager
Office of Policy & Innovation
MDOT Motor Vehicle Administration

CAV VISION & STRATEGIC FRAMEWORK

VISION: Uphold & enhance a **Safe, Efficient, and Equitable** transportation future by delivering collaborative and leading-edge CAV solutions. Maryland is open for business and eager to realize the life-saving and economic benefits of CAV technology, while ensuring safety for all. We are embracing CAV technology and innovation through **continuing collaboration** with partners interested in **researching testing, and implementing** CAVs in MD.

FRAMEWORK: **Empowers** State and local agencies, the private sector, and the public to become part of the conversation and of the change that CAV technology can bring to our State.



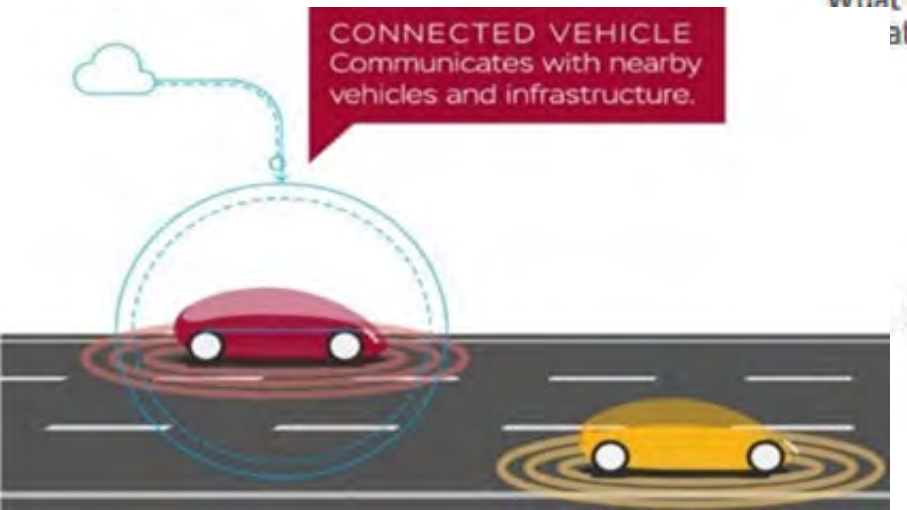
It's a **call to action** to work with the Maryland CAV Working Group so that CAV technology is advanced across the State with your needs in mind.

https://mva.maryland.gov/safety/Pages/MarylandCAV.aspx

FRAMEWORK: IMPORTANCE OF ***FREIGHT***

- Freight is an important component of State's economy – Maryland's global presence is dependent on PoB and BWI to move cargo rapidly / just-in-time through supply chain
- Freight industry experiencing unprecedented change – with that, already investigating and deploying CAV tech to support the vitality of businesses
- Framework suggests CAV has enormous role in shaping the future of mobility – should be included in all plans
- Framework suggests deployment of freight-focused CAV strategies can and should be prioritized
- Government and industry – working together – is critical to exploring potential benefits and challenges with CAV pilot programs

DIFFERENT TECH TYPES & MULTIPLE LEVELS



SAE J3016™ LEVELS OF DRIVING AUTOMATION™

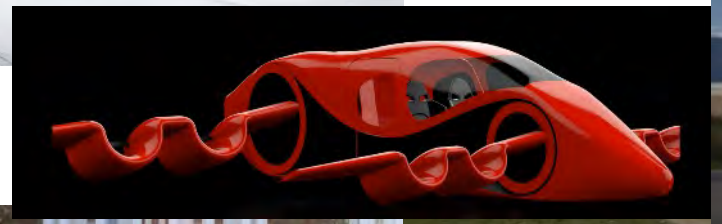
Learn more here: sae.org/standards/content/j3016_202104

	SAE LEVEL 0™	SAE LEVEL 1™	SAE LEVEL 2™	SAE LEVEL 3™	SAE LEVEL 4™	SAE LEVEL 5™
What does the human in the driver's seat have to do?	**You are driving** whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			**You are not driving** when these automated driving features are engaged – even if you are seated in "the driver's seat"		
	You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	
	These are driver support features			**These are automated driving features**		
What do these features do?	These features are limited to providing warnings and momentary assistance	These features provide steering **OR** brake/ acceleration support to the driver	These features provide steering **AND** brake/ acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met		This feature can drive the vehicle under all conditions
Example Features	• automatic emergency braking • blind spot warning • lane departure warning	• lane centering **OR** • adaptive cruise control	• lane centering **AND** • adaptive cruise control at the same time	• traffic jam chauffeur	• local driverless taxi • pedals/ steering wheel may or may not be installed	• same as level 4, but feature can drive everywhere in all conditions

ADAS FOR TRUCKS

- Both FCW & AEB associated w/strong reductions in crash rates + likely severity
- While AEB seems most promising, FCW can be added to existing trucks
- Increasing the use of these technologies is a major safety opportunity
  - Regulation: most effective way for new trucks
  - Voluntary use: partnerships like Tech-Celerate Now
- Find ways to promote the use of these technologies
- These technologies that work can help now, while *on the road* to automated vehicles or connected vehicles

CAV TECH FOR FREIGHT & BEYOND



STAKEHOLDER GOALS

- Improve Safety & Security
- Improve Efficiency
- Reduce Pollution

The technology is here…but it's not just about the technology.

TECHNOLOGY IS HERE NOW…

- Advance driver assist - In use in Maryland today.
  - Bendix Wingman Advanced
    - Collision mitigation
    - Electronic roll stability
    - Adaptive cruise control
    - Automated braking
    - Automated alerts
- 2019 - Starsky Robotics first unmanned test
- 2021 – Q4 TuSimple projections

…BUT IT'S NOT JUST ABOUT TECHNOLOGY

Speed of adoption/Path to implementation

- Safety
  - Perfect…or better than human?
- Regulatory barriers
  - Following too closely
- ROI
  - Does it lower costs/improve productivity
- Incentives
  - Insurance deductions
  - Hours of service modifications
- Societal acceptance

> Delivering driverless vehicles (or even advanced automated technologies) involves more than just the technology. Also important is the ecosystem around this technology – and it's this ecosystem that is likely to slow the process of getting to true autonomous vehicles. The technology will continue to advance, no doubt, and we'll see more automation coming fast – like water through a garden hose – but getting to truly driverless is still a long way off.

Bendix

AUTONOMY VS. CONNECTIVITY

- Autonomy gets headlines, but connectivity is in use.
- Enforcement
  - Drivewyze
    - Weigh station bypass
  - Virtual scales
    - 17 sites in MD

WHERE TO **NOW** ON FREIGHT & CAV…?

MARYLAND DEPARTMENT OF TRANSPORTATION

The Eastern Transportation Coalition

Carole Delion, P.E., Division Chief
CATS Division, MDOT SHA

STATE FREIGHT ADVISORY COMMITTEE

FREIGHT TECHNOLOGIES POLL

MARYLAND DEPARTMENT OF TRANSPORTATION

FEDERAL UPDATE

STATE FREIGHT ADVISORY COMMITTEE

MARYLAND DEPARTMENT OF TRANSPORTATION

Freight Analysis Framework & Freight Data

Birat Pandey, P.E., Freight Analysis and Data Manager
Federal Highway Administration (FHWA)

STATE FREIGHT ADVISORY COMMITTEE

Freight Analysis Framework (FAF): FAF5 Update

Presentation to the State Freight Advisory Committee, Maryland Department of Transportation

Birat Pandey, FHWA

September 1, 2021

U.S. Department of Transportation
Federal Highway Administration

Office of Operations
Office of Freight Management and Operations
1200 New Jersey Avenue SE
Washington, D.C. 20590
www.ops.fhwa.dot.gov/freight

Goal and Agenda

Cover key features of the FAF that are important to know for making data application decisions

- What is in FAF 5.1
- Updates and Product Schedules
- Strengths and Limitations
- Example Use Cases
- https://ops.fhwa.dot.gov/freight/freight_analysis/faf/

FAF 5.1: Core Data

Provides a comprehensive picture of freight movement in the U.S. based on 2017 survey

- Delineates the U.S. into 132 FAF Regions
- Includes 30-year forecasts for three scenarios
- Describes freight flow by 42 commodity groups
- Includes freight truck flow on the National Highway System (NHS)

Source: USDOT, FHWA, Freight Analysis Framework FAF5.0

Flows of Commodities Between Metro Areas

Source: USDOT, FHWA, Freight Analysis Framework FAF4.5

Long Distance Freight Truck Flows on Highways

FAF 5.1: Key Changes and Schedule

FAF 5.1 Base Year Data

Published - https://ops.fhwa.dot.gov/freight/freight_analysis/faf/

- New base year 2017 and Updated Historical Series 1997,2002,2007 and 2012
- Tallapoosa County, AL included in Birmingham–Hoover-Talladega FAF zone
- Fannin County, TX included in Dallas-Fort Worth FAF Zone
- Jefferson Davis Parish, LA included in Lake Charles-Jennings FAF Zone

FAF5 30 Years Forecasts

Estimated publication by October 2021

- New horizon year 2050 with 5-year increments, and three forecast scenarios
- Shorter-term forecast 2022, 2023
- Improved documentation of forecast assumption

FAF5 Truck Flow Estimates

Estimated publication by Fall 2021

- New Base Year 2017
- New Horizon Year 2050
- Improved Modeling Tools (improved analytical capability, transparent process and portable tool

CFS 2017 Sub Area Table

Published - https://ops.fhwa.dot.gov/freight/freight_analysis/faf/

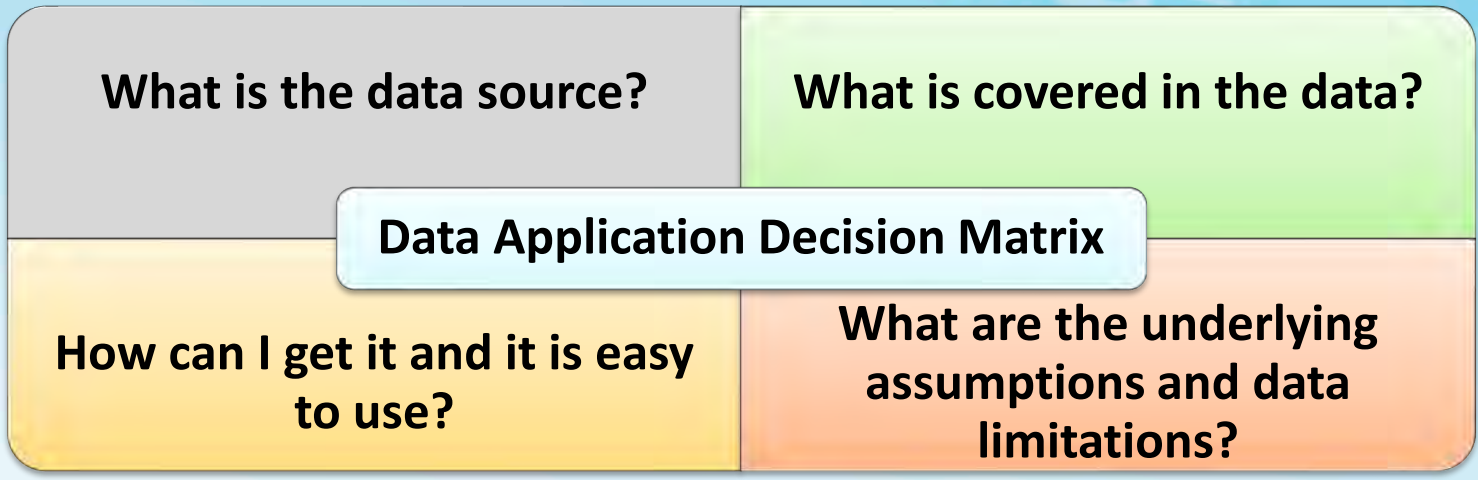
- More detailed CFS 2017 truck flow data (increased geographical details but reduced commodity details)

Web Based Tools, Prepopulated Summary, and Maps

Published and throughout 2021

- Updated web-based data tabulation
- Update interactive data visualization tool
- Update maps for each state (Base Year Highway Flow , Future Truck Flows and Through Truck Flows)

FAF 5.1: Data Application is a Tradeoff Decision



Benefits

- National level survey of shippers
- Regular data from federal program since 1997
- Considers national and international trade
- Includes freight transported by various modes
- Includes 42 types of commodity groups
- Forecast assumptions are balanced nationally
- Publicly available and ready to use
- Supports national, State and large metropolitan areas
- Supports network flow analysis on the national highway system, higher functional class roadways, and for a large multi-county corridors

Limitations

- Survey is not tailored for a specific region
- Potential inconsistency with local growth scenarios
- Limited granularity for local analysis; local roadways are not fully captured
- Likely requires supplemental data for local analysis
- Commodity details may not be sufficient

Use Case Example: Pre-populated Tables

Top Five Freight Destinations States for Maryland

Origin State	Destination States	Tons (Million)	Percentage
Maryland	Maryland	124.8	64%
	Virginia	27.8	14%
	Pennsylvania	11.4	6%
	Delaware	4.8	2%
	New York	3.3	2%
	Remaning FAF Zones	22.8	12%
Total Freight Originated in Kentucky		**194.8**	**100.0%**

Source: U.S. Department of Transportation, Federal Highway Administration(FHWA), Bureau of Transportation Statics (BTS), Freight Analysis Framework Version 5 (FAF5.1)

Top Five Freight Destinations for Baltimore, Maryland

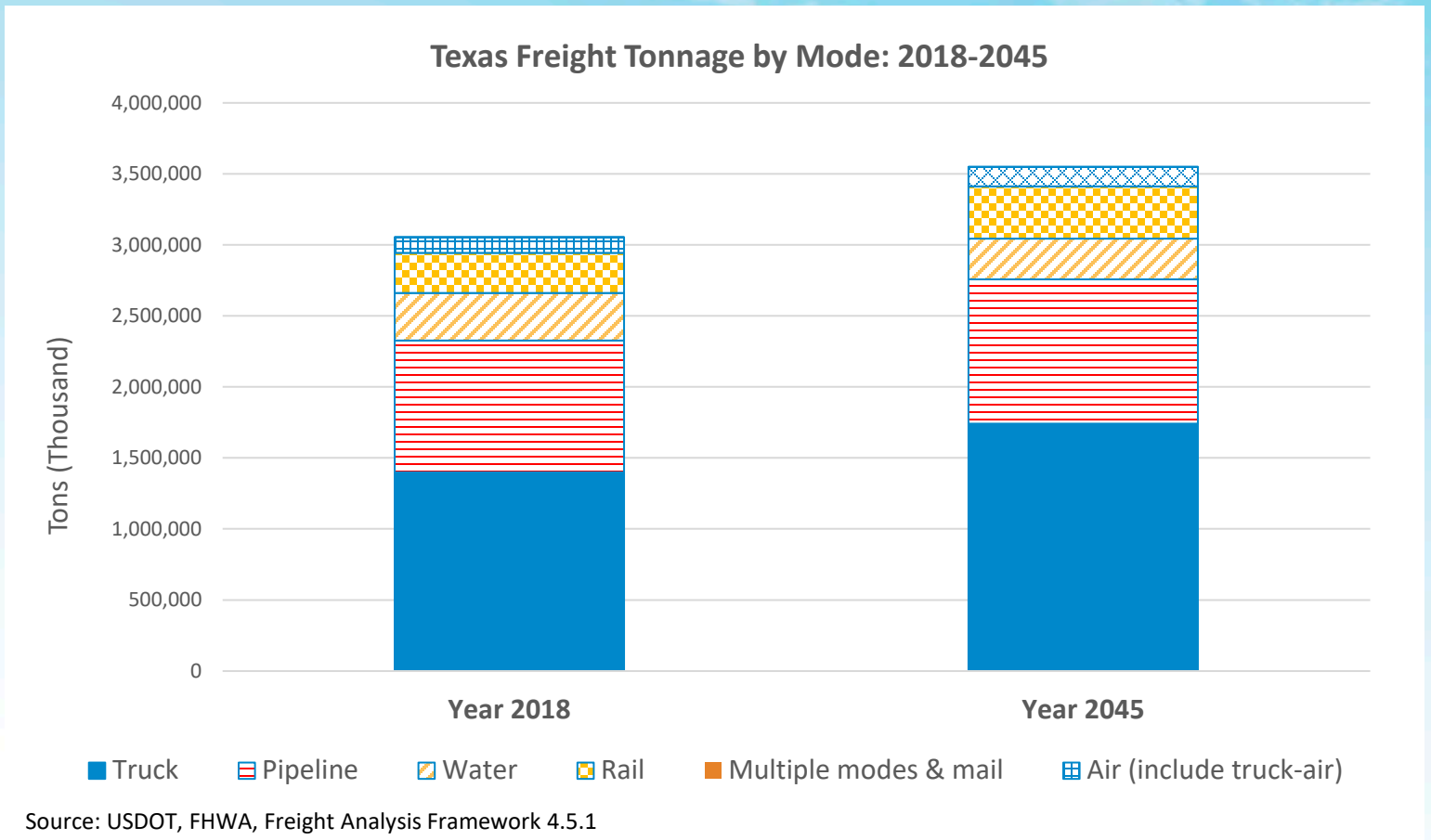
Origin FAF Zone	Destination FAF Zone (D)	Tons (Million)	Percentage
Baltimore MD	Baltimore MD	41.7	51%
	Washington DC-VA-MD-WV (MD Part)	9.8	12%
	Washington DC-VA-MD-WV (VA Part)	3.8	5%
	Rest of PA	3.4	4%
	Rest of MD	2.6	3%
	Remaning FAF Zones	21.0	26%
Total Freight Orginated in Baltimore, Maryland		**82.2**	**100.0%**

Source: U.S. Department of Transportation, Federal Highway Administration(FHWA), Bureau of Transportation Statics (BTS), Freight Analysis Framework Version 5 (FAF5.1)

FHWA Pre-populated Summary Tables : https://ops.fhwa.dot.gov/freight/freight_analysis/faf/

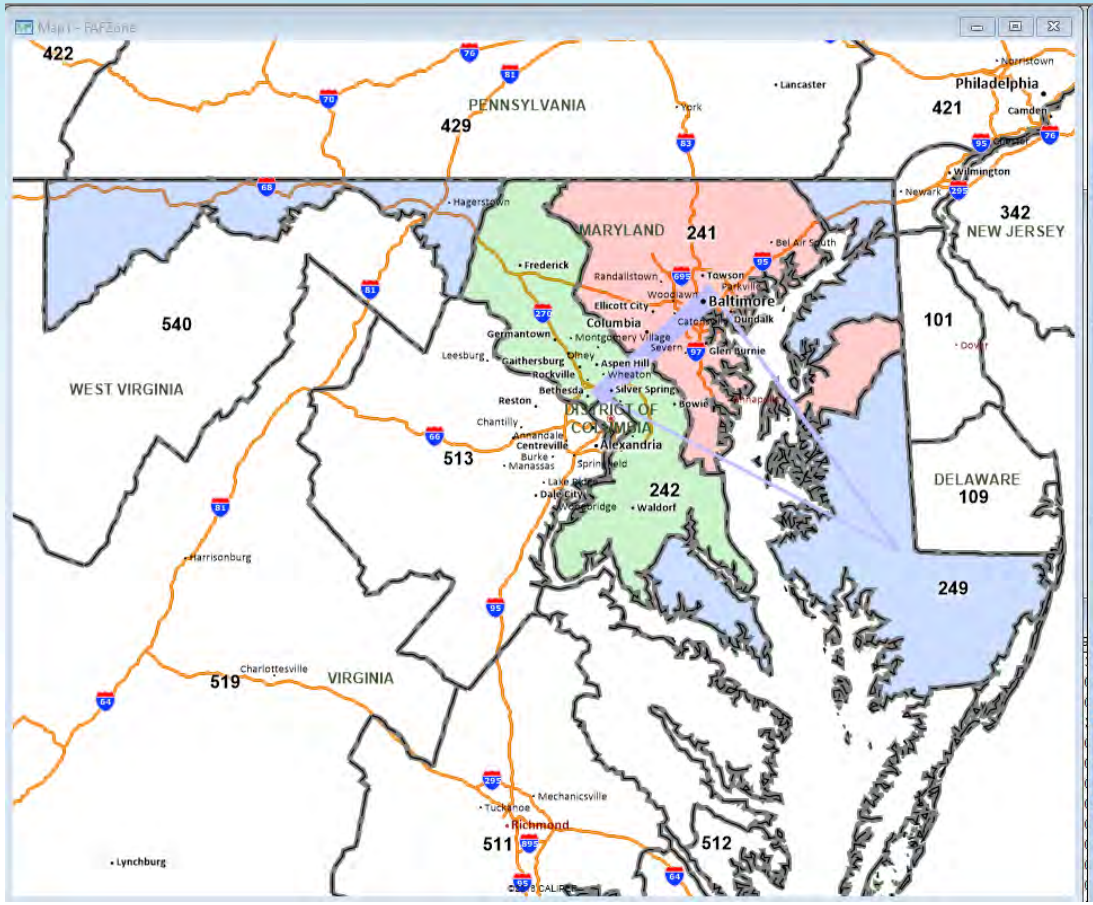
Use Case Example: Forecast

- Example: Trucks carry 46 percent of the freight for Texas by weight
- Freight tonnage by truck in Texas is projected to increase by about 25 percent by year 2045
- FAF 5.0 forecast is planned to be released in 2021
- FAF 5.0 forecast horizon year is 2050



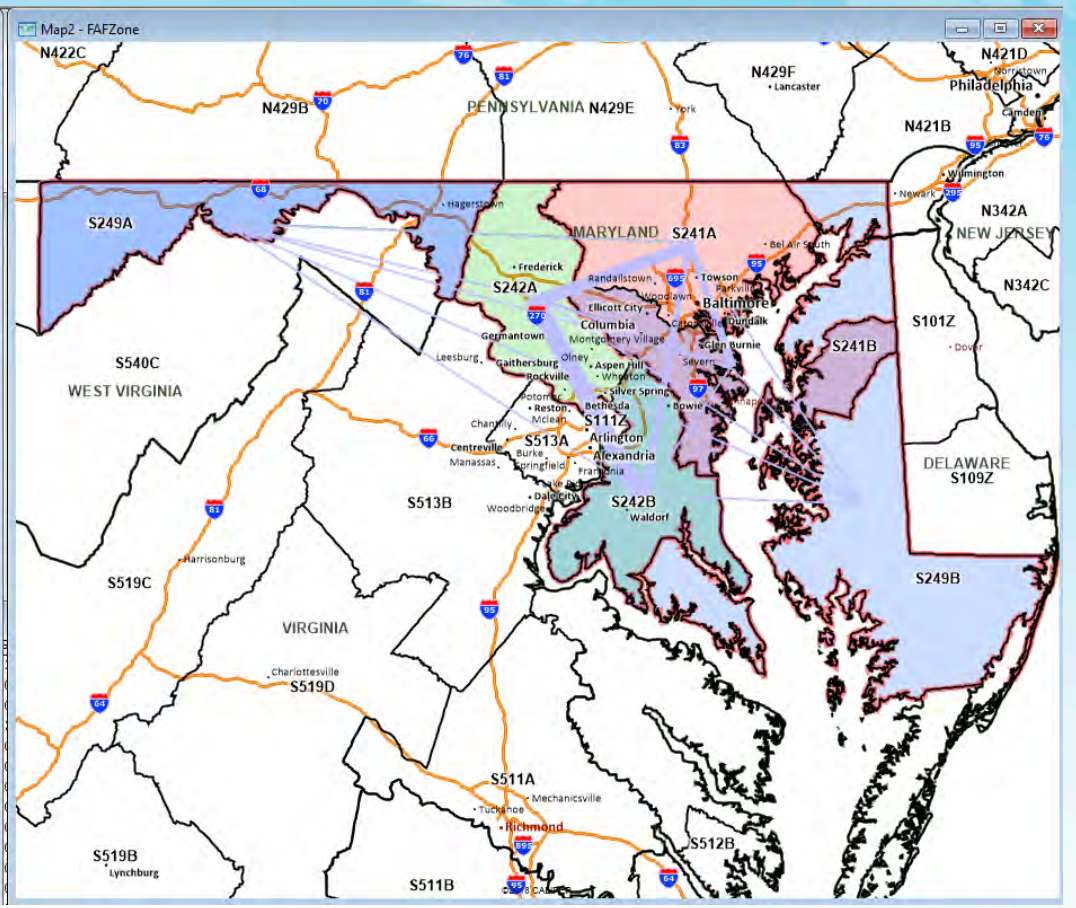
Source: USDOT, FHWA, Freight Analysis Framework 4.5.1

Use Case Example: Sub Area Data Maryland



Geographical Definition: FAF5

Source: FHWA FAF 5.0

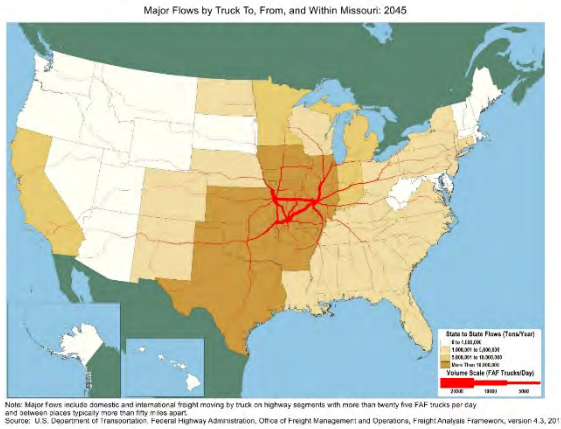


Geographical Definition: CFS Sub Area Data

Use Case Example: Truck Flows

National Level

State Level & Key Link



Within State & Regional

Source: FHWA FAF 5.0

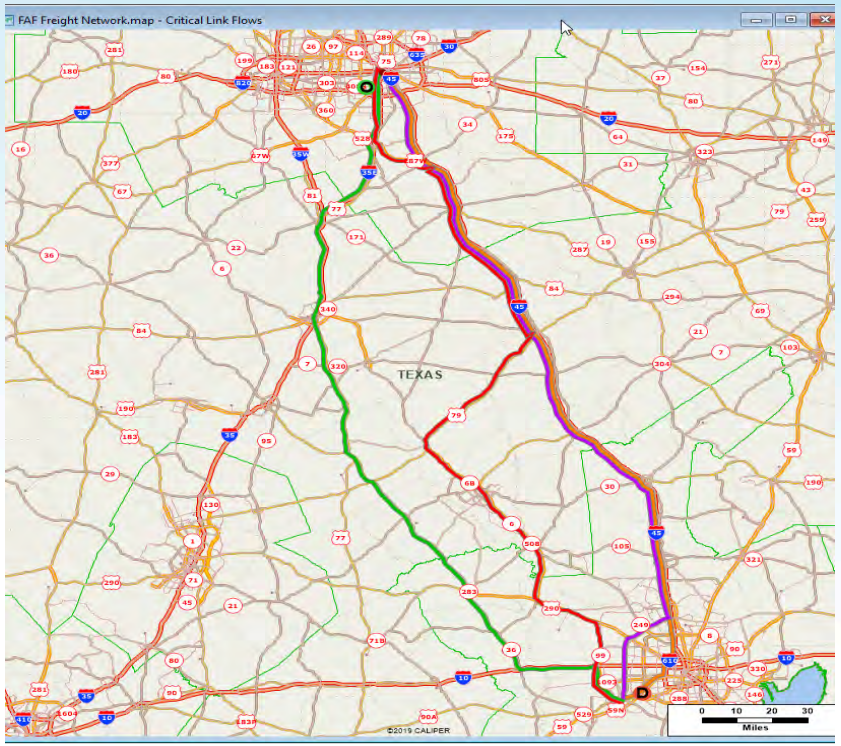
Key Network Outputs

Truck Volume | **Truck Tonnage** | **Commodity Flows**

Updated Features Example: Major Paths and Selected Zones

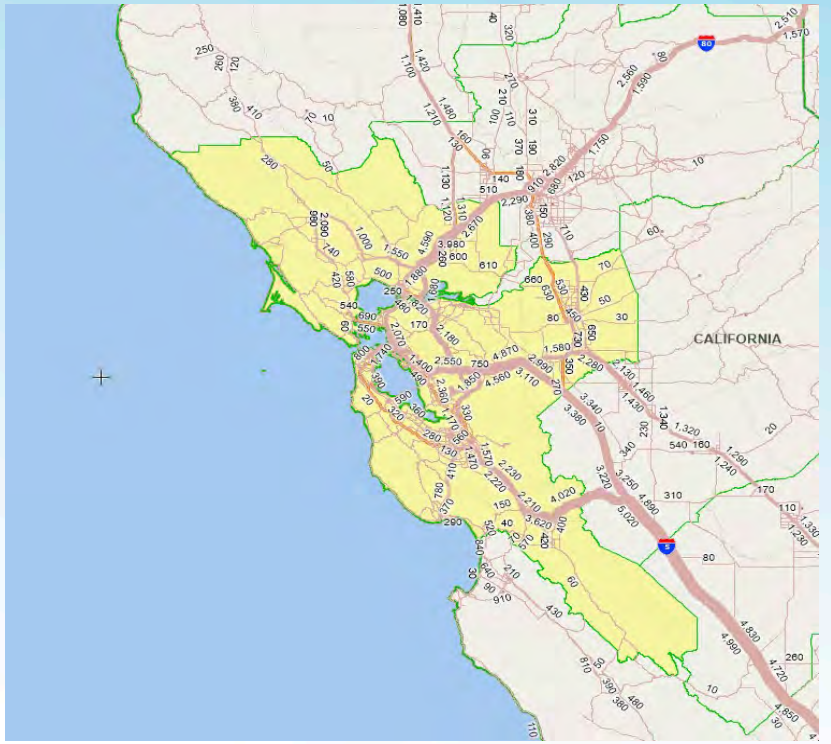
Truck paths between Dallas and Houston, TX

Source: FHWA FAF 5.1



Flows to/from San Francisco, CA

Source: FHWA FAF 5.1



Questions

Birat Pandey
FHWA FAF Program Manager
birat.pandey@dot.gov

Federal Highway Administration
Office of Operations
Office of Freight Management and Operations
U.S. Department of Transportation Headquarters
Building E84-444
1200 New Jersey Avenue, SE
Washington D.C., 20590

MARYLAND DEPARTMENT OF TRANSPORTATION

BREAK: Stretch, Coffee, Well-Being

STATE FREIGHT ADVISORY COMMITTEE

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MARYLAND STATE UPDATE

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Freight Plan

Michelle D. Martin
Deputy Director, Office of Planning & Capital Programming
MDOT

STATE FREIGHT ADVISORY COMMITTEE

MARYLAND DEPARTMENT OF TRANSPORTATION

Maryland State Freight Plan

State Freight Advisory Committee Meeting

September 1, 2021

Discussion Topics

1. **Status** Freight Plan Status Update
2. **Background** Freight System Trends
3. **Needs** Freight System Performance, Needs, and Issues
4. **Actions** Freight Action Planning, Strategies, Areas of Focus
5. **Next Steps** Future Milestones

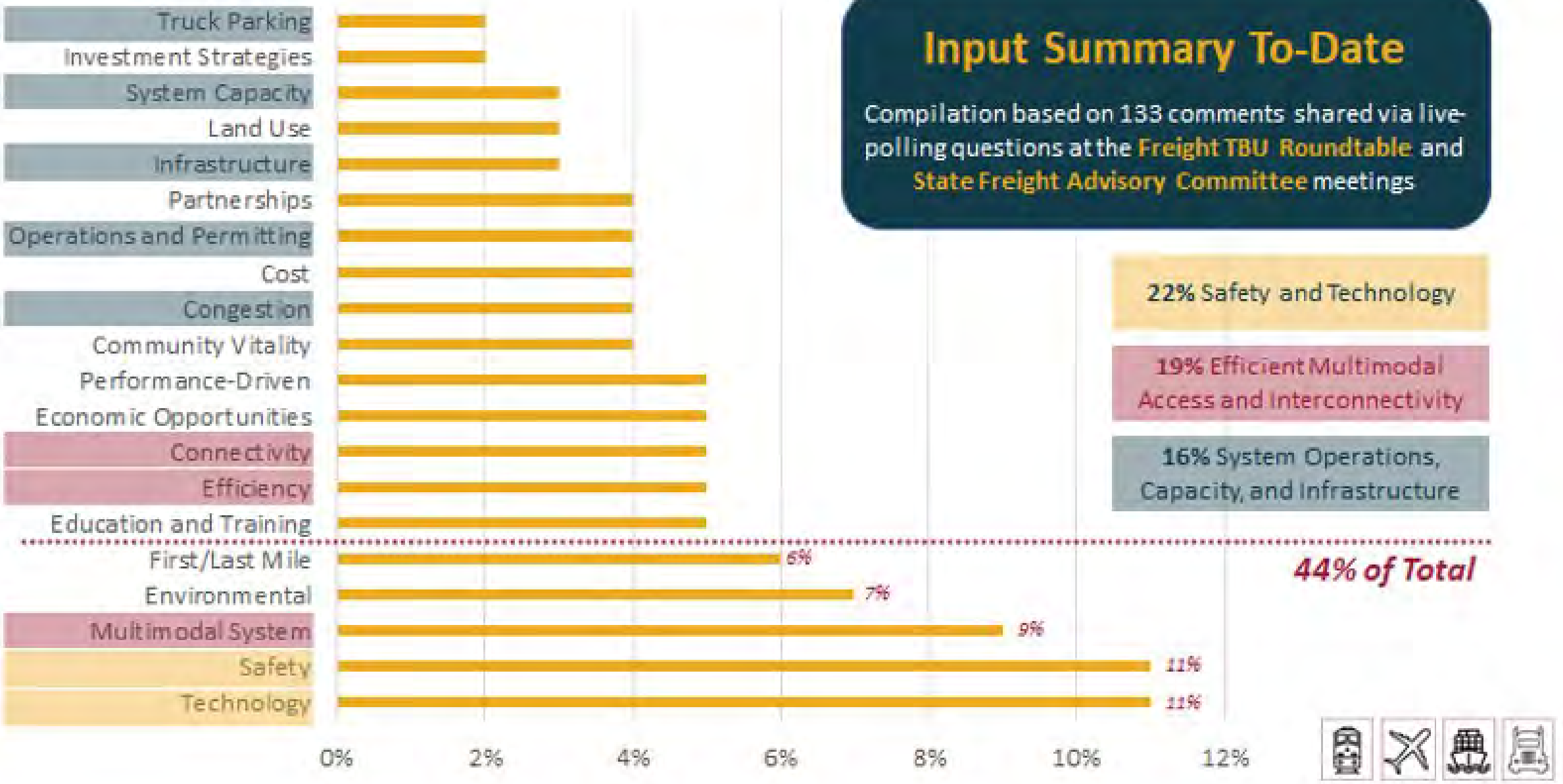
Freight Plan Schedule

Freight Vision

Freight travels freely and safely through a modern, resilient, and interconnected multimodal network contributing to sustainable economic viability and growth for Maryland businesses and communities.

Input Summary To-Date

Compilation based on 133 comments shared via live-polling questions at the **Freight TBU Roundtable** and **State Freight Advisory Committee** meetings



22% Safety and Technology

19% Efficient Multimodal Access and Interconnectivity

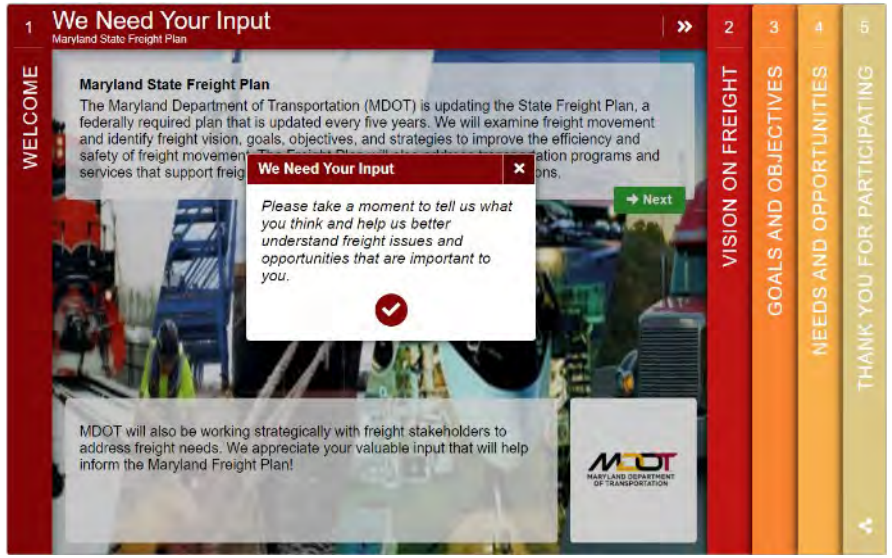
16% System Operations, Capacity, and Infrastructure

44% of Total

MetroQuest Survey Summary

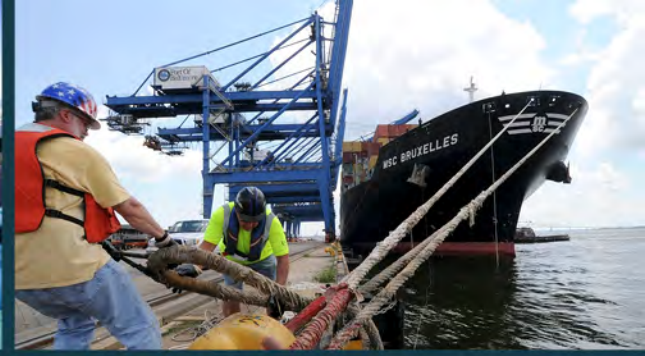
MDOT

- Vision on Freight
- Goals and Objectives
- Needs and Opportunities
- Other Input (Email, web updates)
- 191 participants
- Survey (closed on May 14, 2021)
- Over 200 comments received, covering the vision, goals/objectives, and projects



TAKE OUR SURVEY

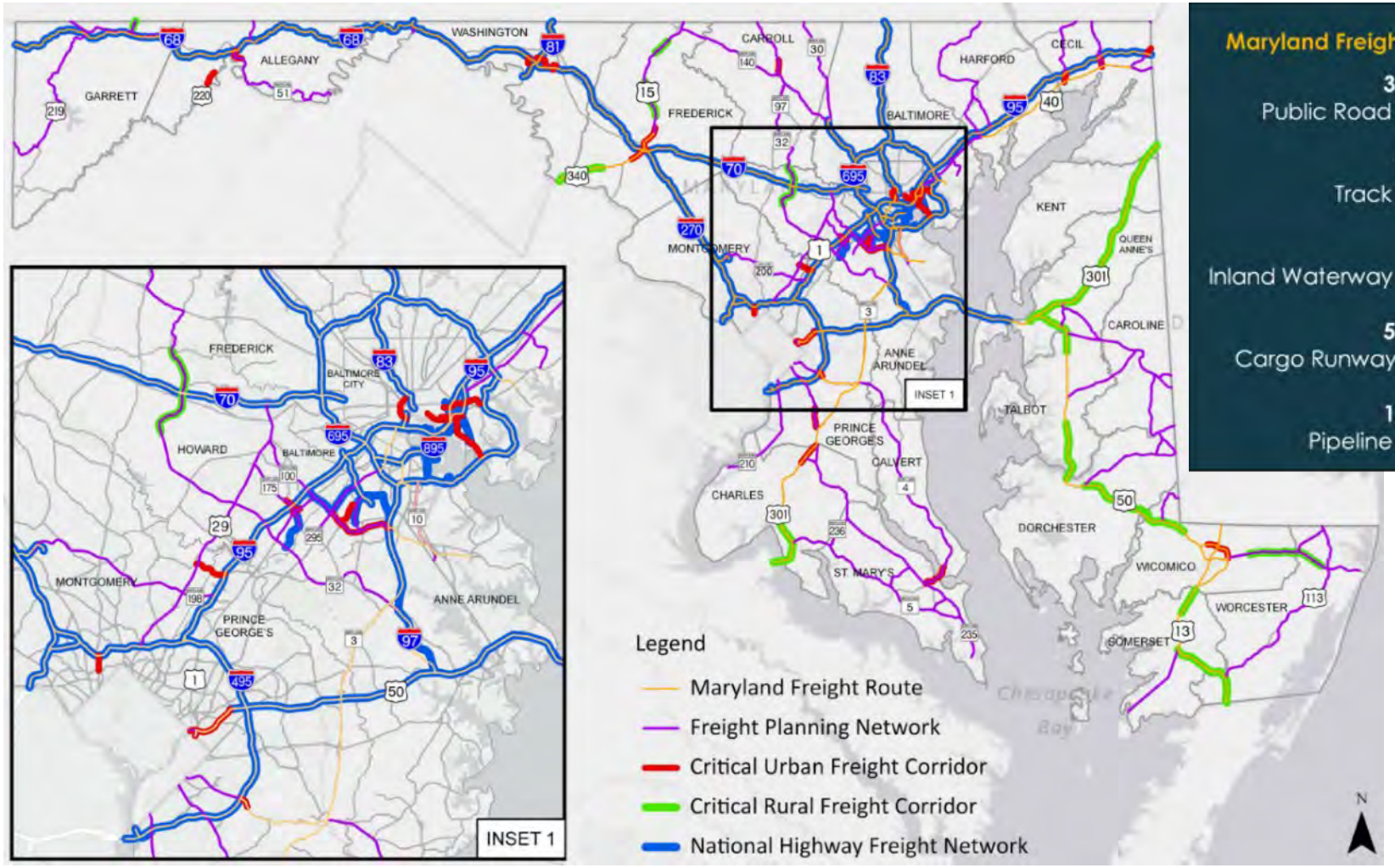




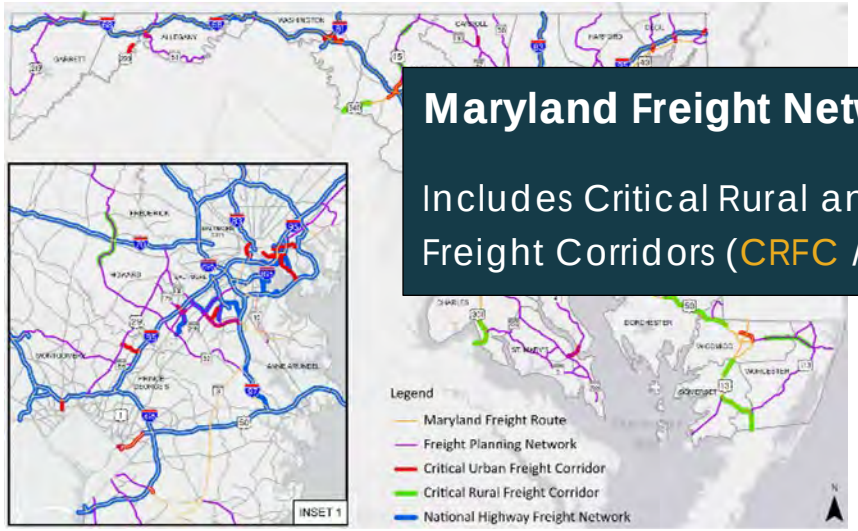
Freight System Background and Trends

Freight System and Trends

FREIGHT DEMAND AND THE ECONOMY	
↑	Maryland's population
↑	Maryland's economy
↑	Freight volumes
↓	Transportation and logistics workforce
FREIGHT NETWORK AND INFRASTRUCTURE	
↔	Modal shares
↔	Truck volumes
↔	Intermodal port and rail access
↓	Preservation/modernization
FREIGHT TRENDS AND FOCUS AREAS	
↓	Environment
↑	e-commerce
↑	Freight technologies
↔	Resilience



Freight Network and Infrastructure



Maryland Freight Network

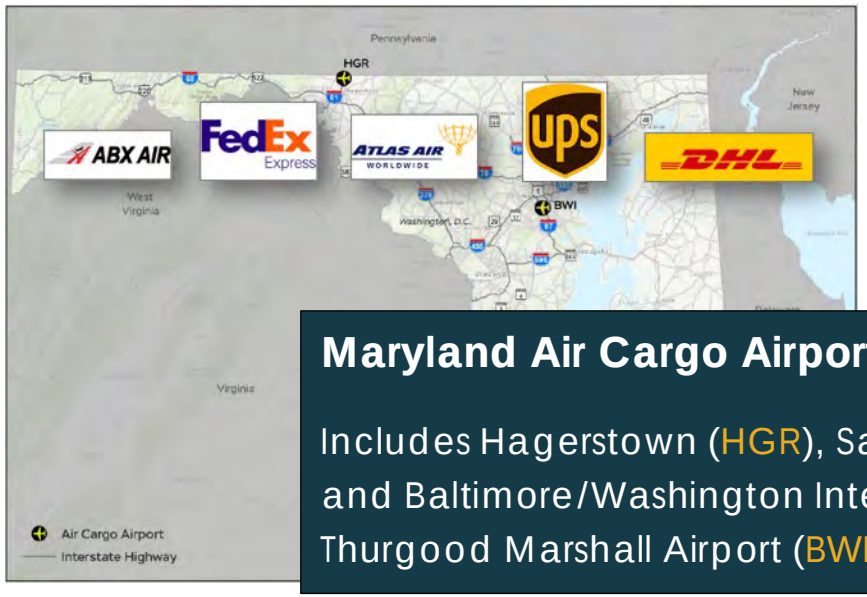
Includes Critical Rural and Critical Urban Freight Corridors (CRFC / CUFC)

Maryland Ports and Waterways

Includes Port of Baltimore, public/private terminals, and Eastern Shore rivers

Maryland State Rail Plan

2021 Plan Update in-progress



Maryland Air Cargo Airports

Includes Hagerstown (HGR), Salisbury (SBY), and Baltimore/Washington International Thurgood Marshall Airport (BWI/Marshall)

Freight Demand

Maryland Freight Demand

2017 freight = 290M tons worth $381 billion

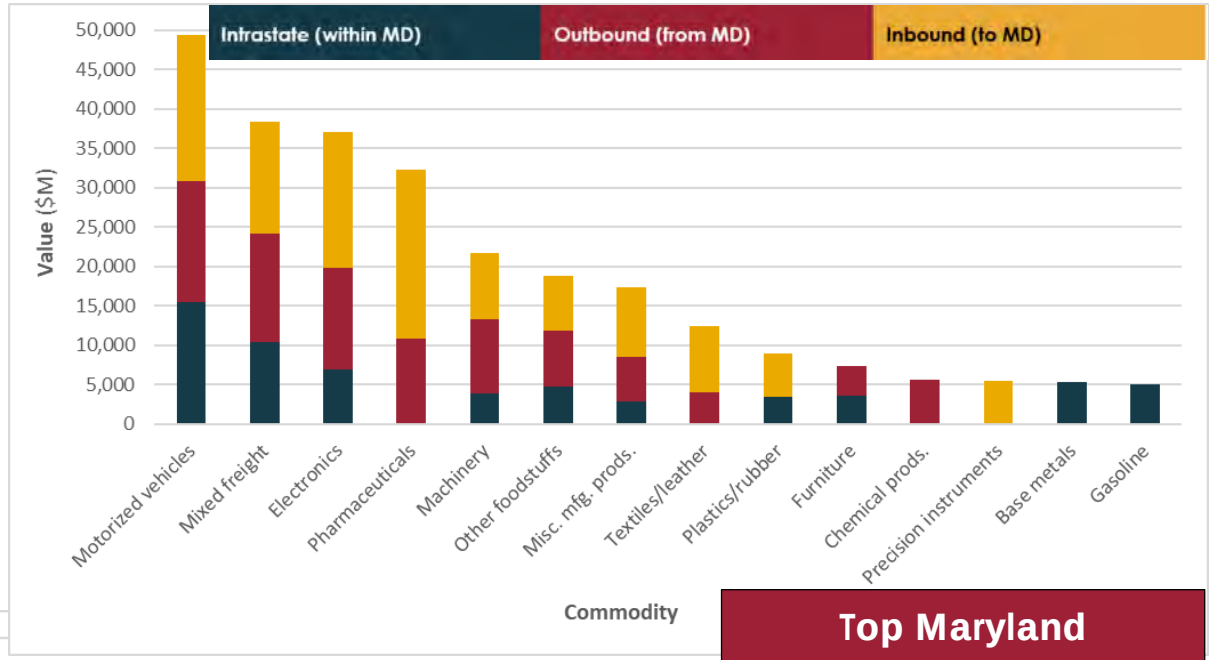
Excludes pass-through freight, which accounts for ~2/3 of total freight

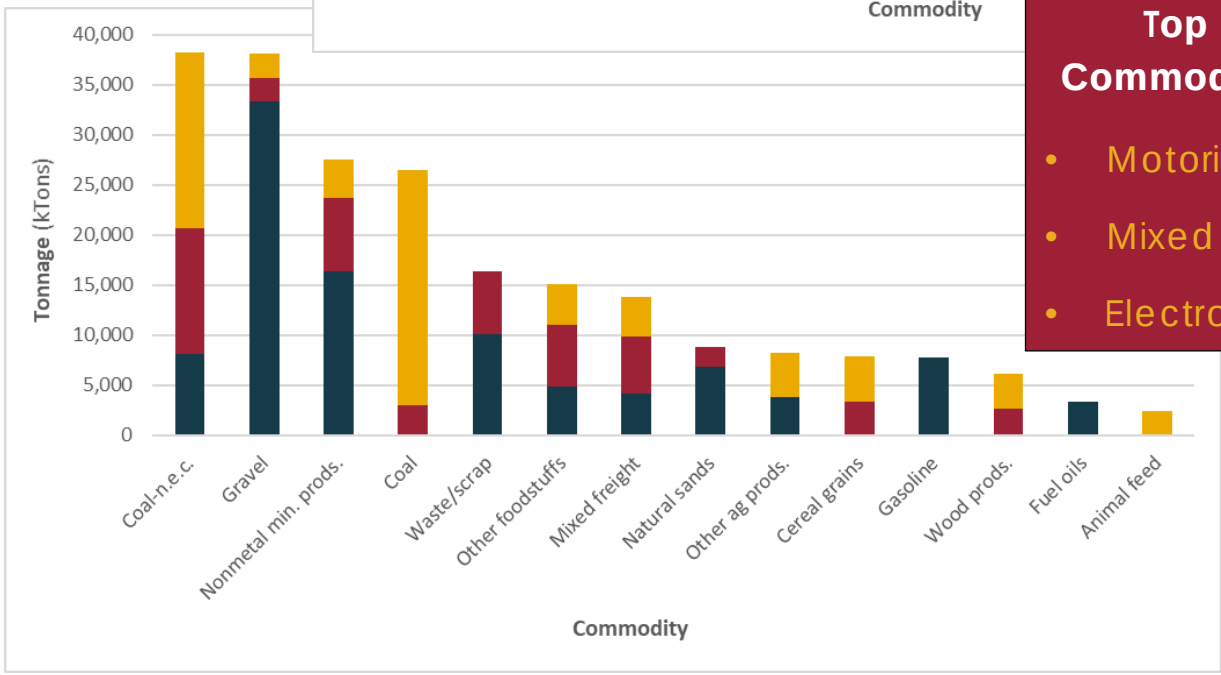
90% tonnage or 70% value moves between surrounding states plus NY and CA

76% freight moves by truck

Top Maryland Commodities by Tonnage

- Coal-n.e.c.
- Gravel
- Nonmetal min. products





Top Maryland Commodities by Value

- Motorized vehicles
- Mixed freight
- Electronics

Freight and the Economy

Maryland Economy

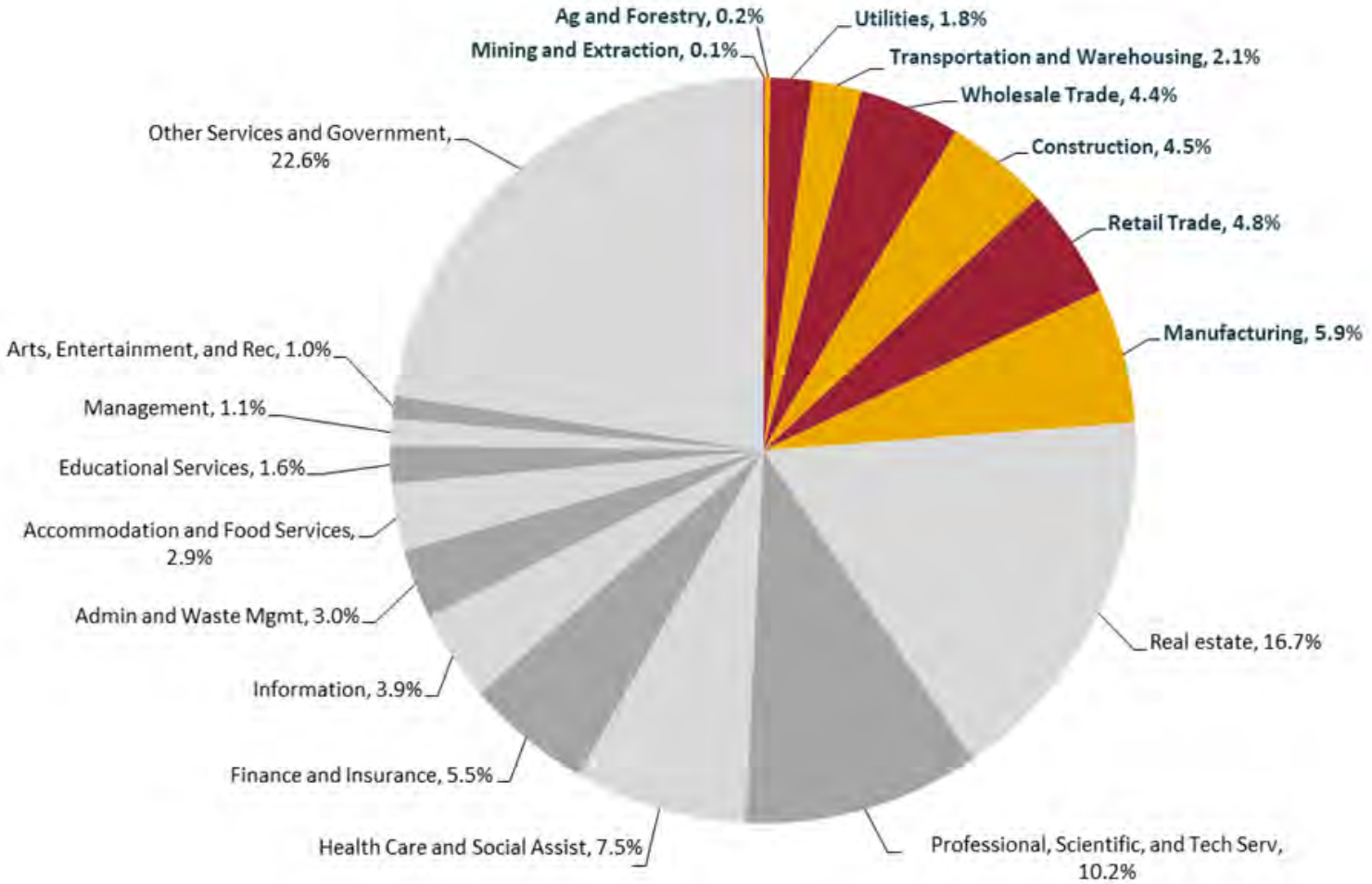
2020 population ~ 6.1M persons

2045 population ~ 6.8M persons (+13%)

2019 GDP ~ $427 billion
2020 GDP ~ $423 billion (15th in US)

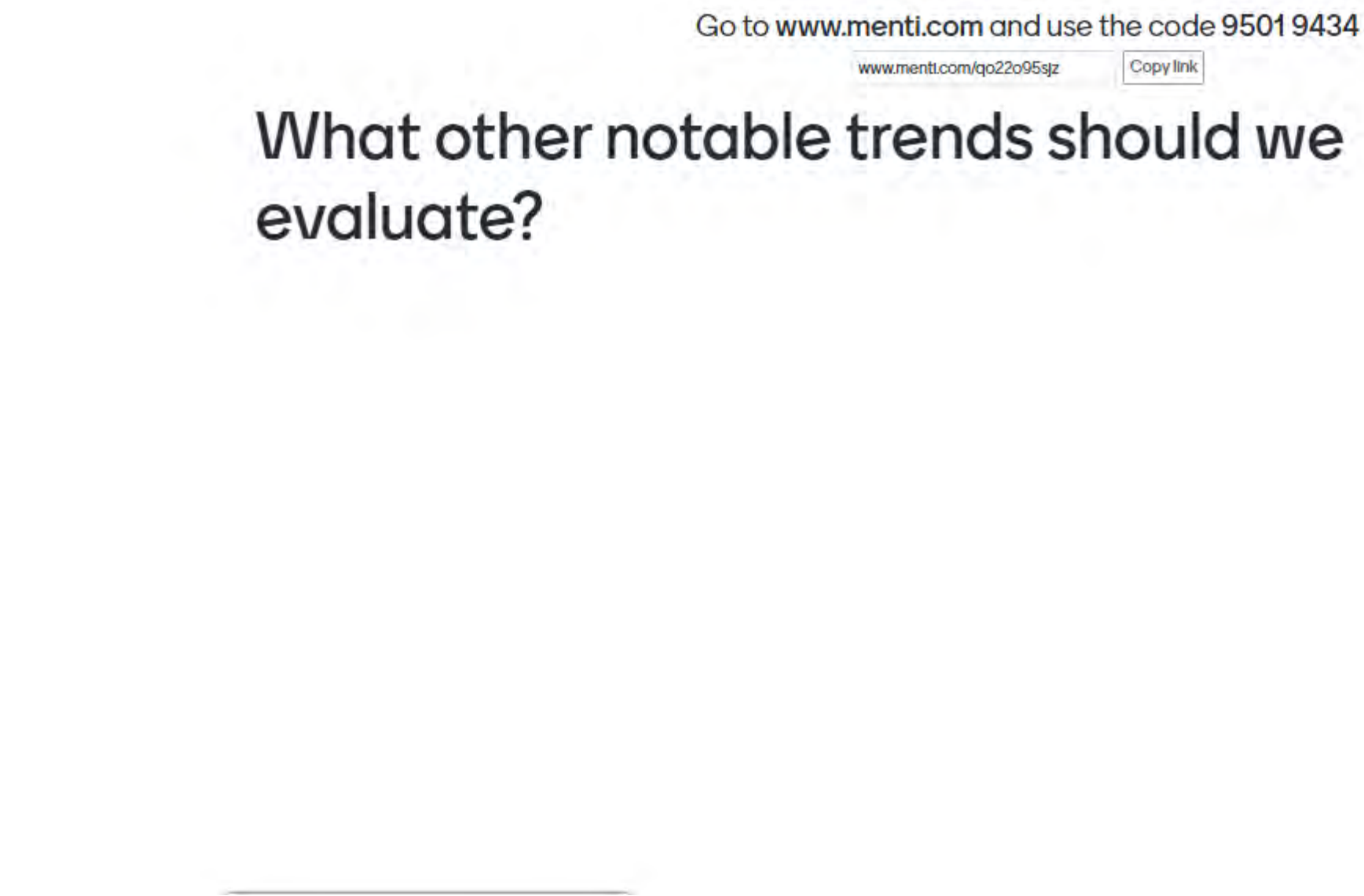
Freight-related industries directly account for ~1/4 of State GDP

Freight industry annual taxes and fees generate > $4.4 billion in State revenue

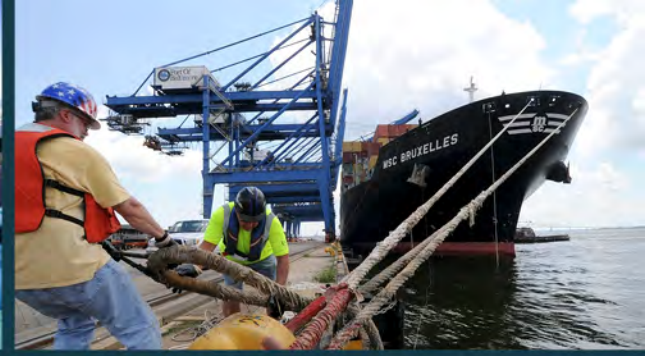


Poll

Feedback?





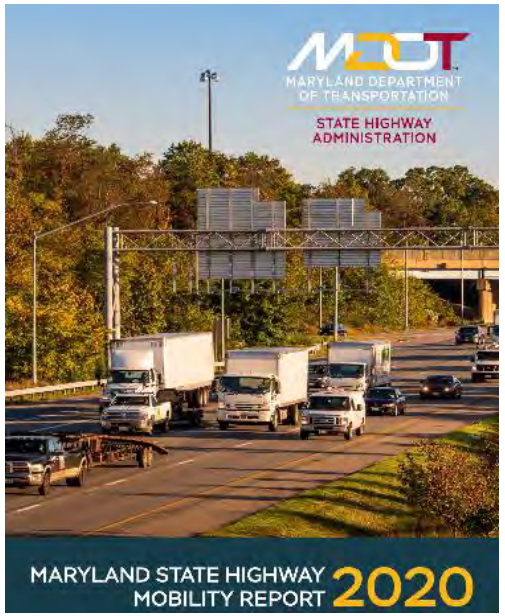


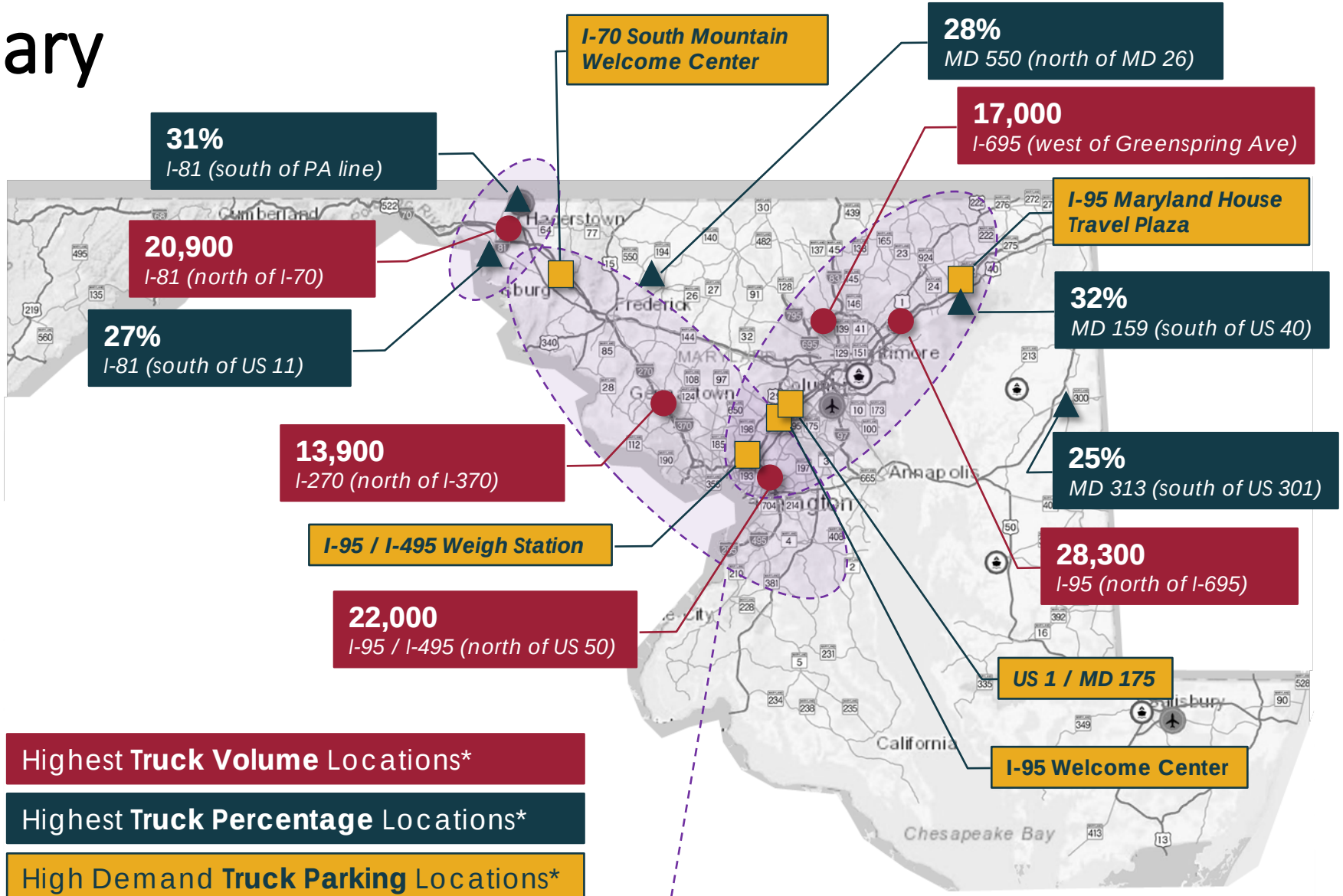
Freight System Performance, Needs, and Issues

Statewide Summary

Truck Activity Levels

- Maryland State Highway Mobility Report
- Truck Volume, Percentage, and Parking Insights





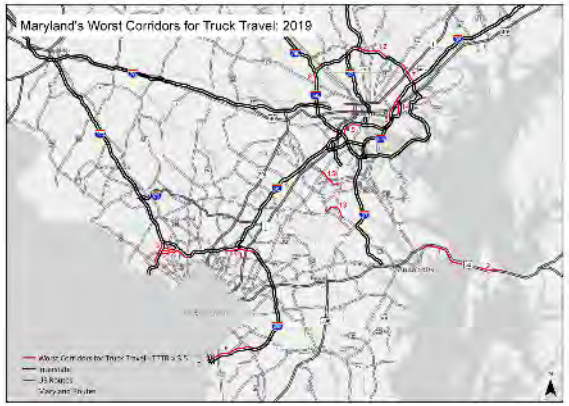
* *Top 5 locations statewide based on 2019 data from the 2020 Mobility Report (Tables 24-26)*

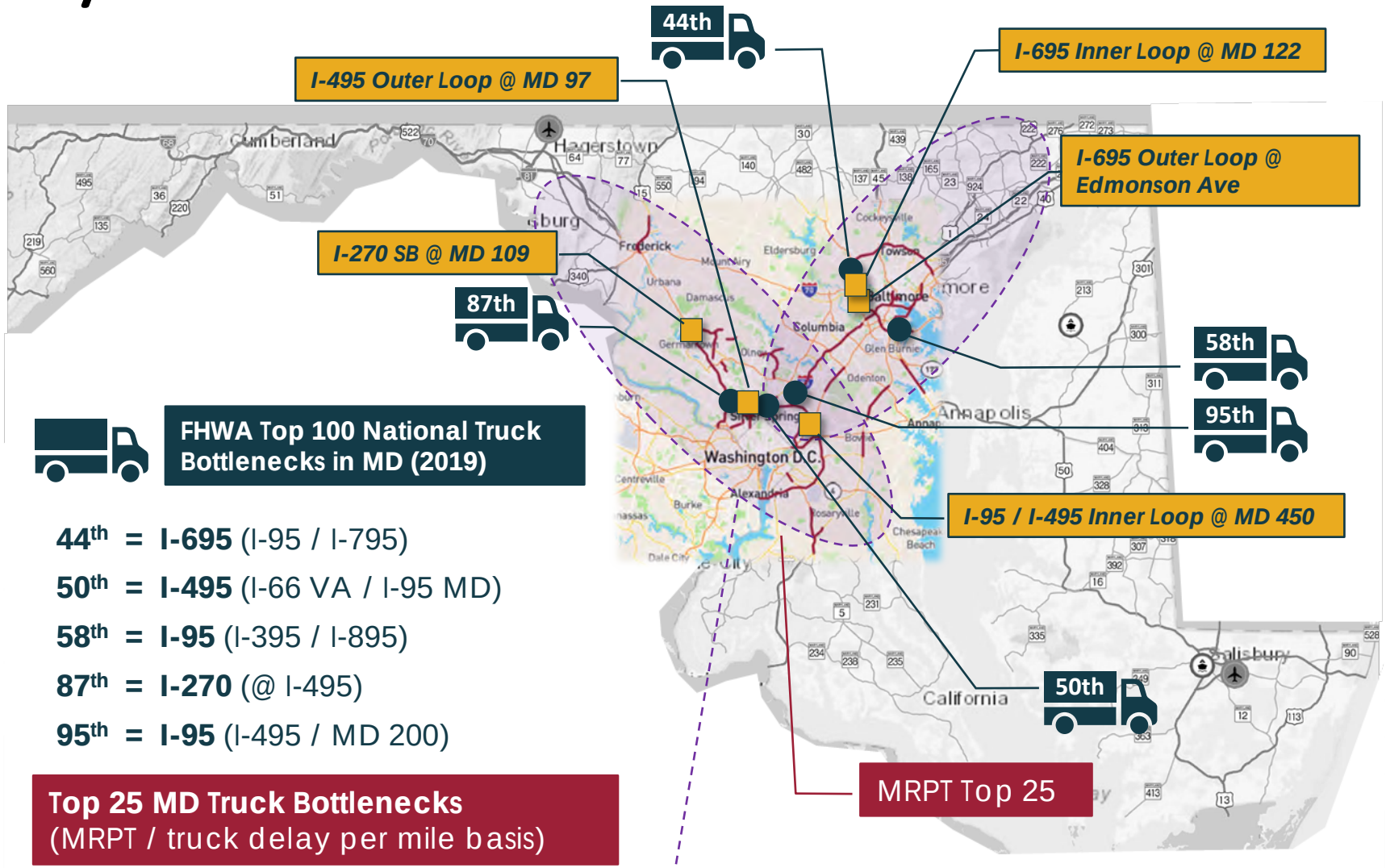
Statewide highest locations clustered around Baltimore/ Washington metro areas and the I-81 corridor through Washington Co.

Statewide Summary

Truck Bottlenecks

- FHWA Freight Mobility Trends Resource
- Maryland Roadway Performance Tool (MRPT)
- Maryland CATT Lab / Vehicle Probe Project (VPP)
- Truck Travel Time Reliability Index (TTTR) (*below*)





FHWA Top 100 National Truck Bottlenecks in MD (2019)

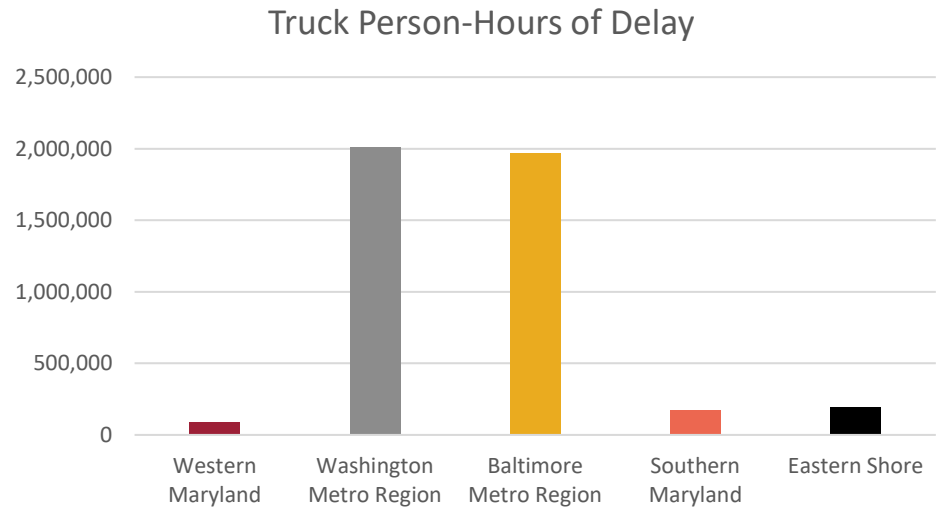
44th = I-695 (I-95 / I-795)
50th = I-495 (I-66 VA / I-95 MD)
58th = I-95 (I-395 / I-895)
87th = I-270 (@ I-495)
95th = I-95 (I-495 / MD 200)

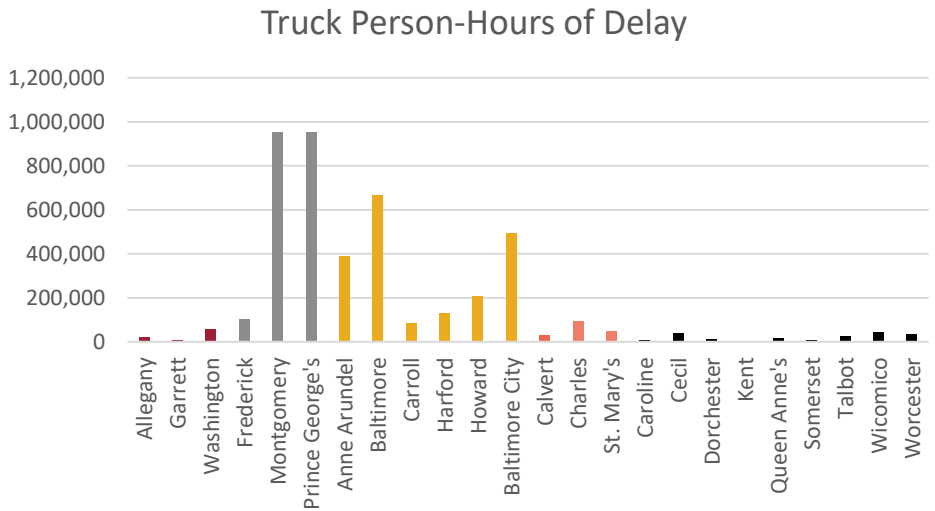
Top 25 MD Truck Bottlenecks
(MRPT / truck delay per mile basis)

Top 5 MD Truck Bottlenecks
(VPP / speed-congestion-delay basis)

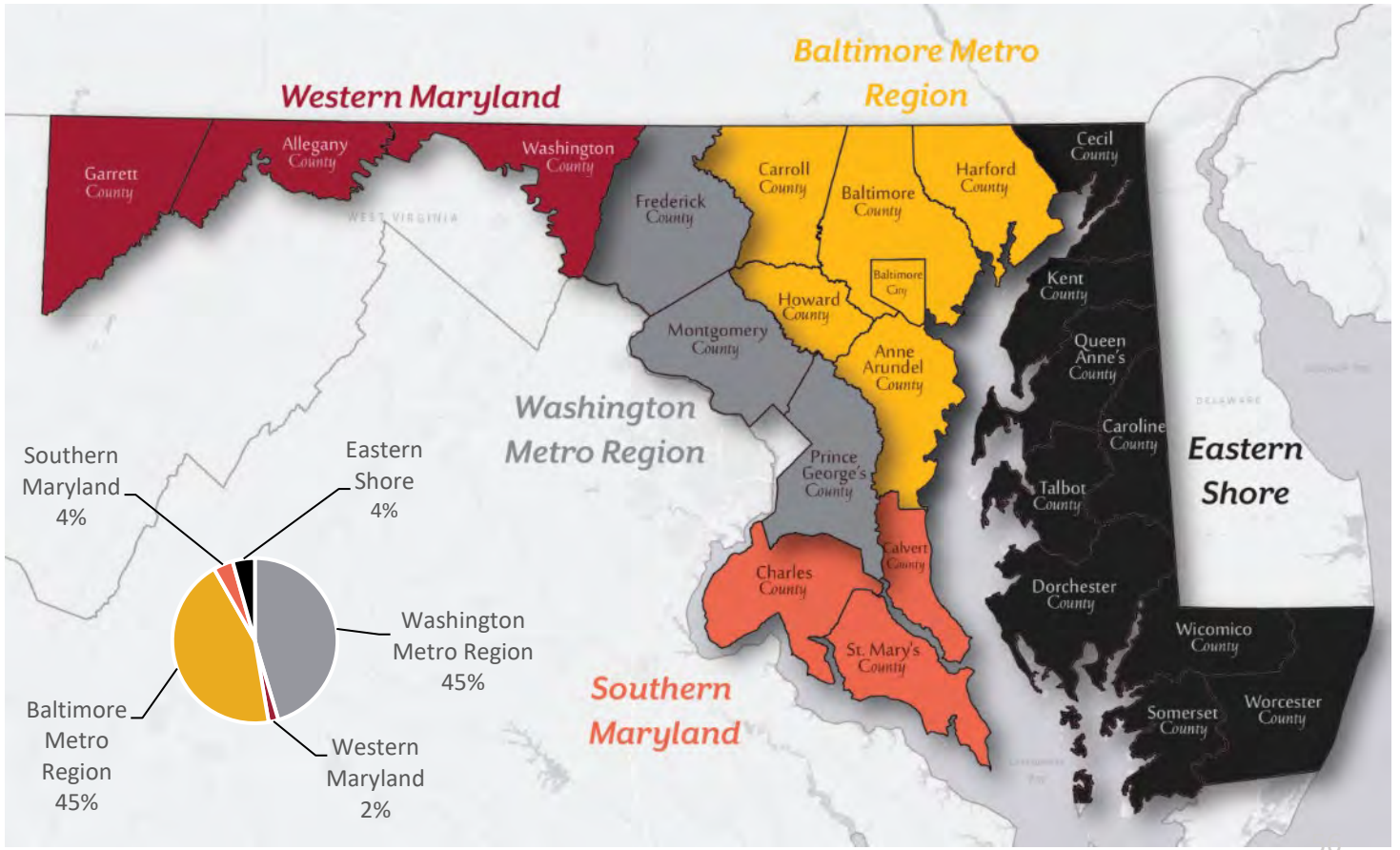
Statewide top bottlenecks clustered around Baltimore / Washington metro areas

Regional Summary



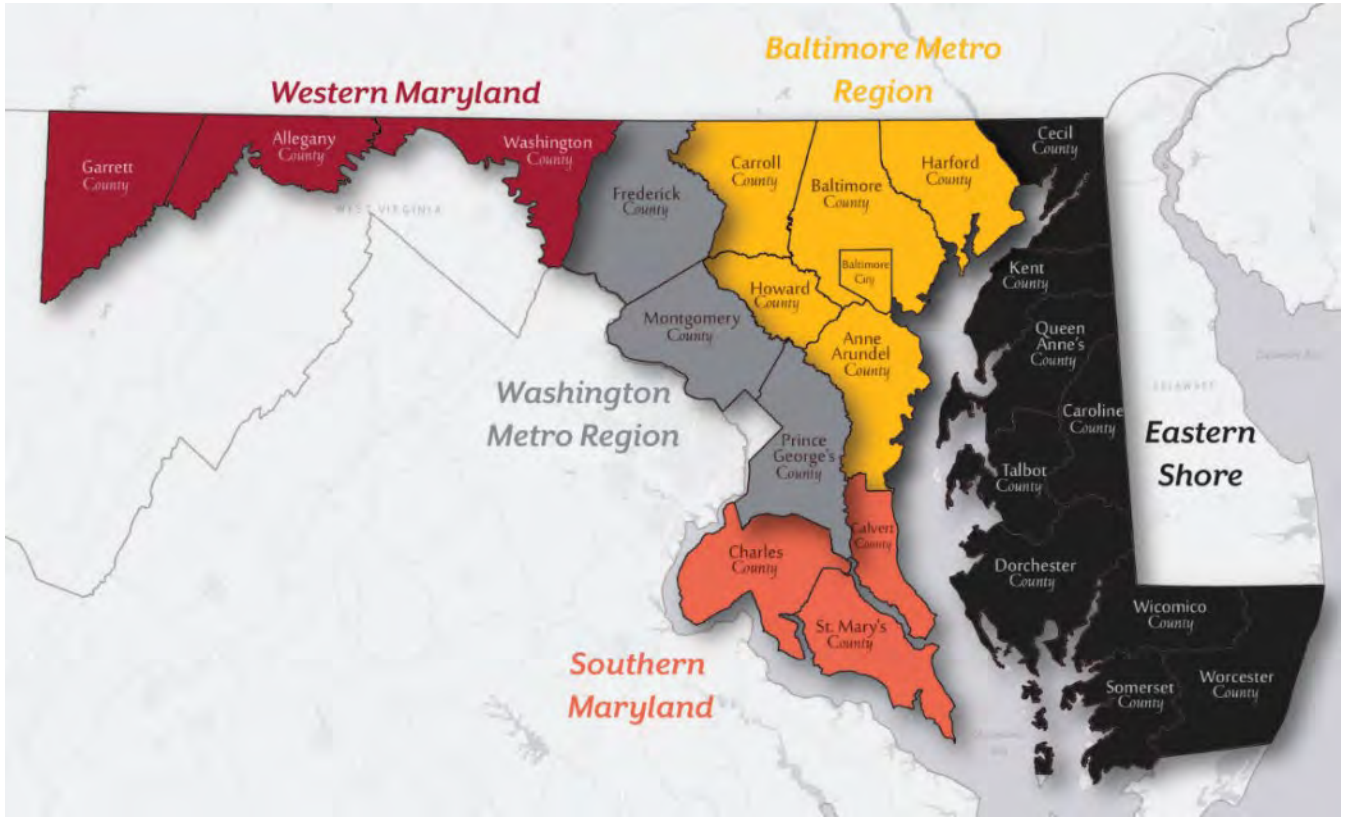


- **4,428,895** Truck Person-Hours of Delay Statewide
- **90%** within Baltimore & Washington Metro Regions

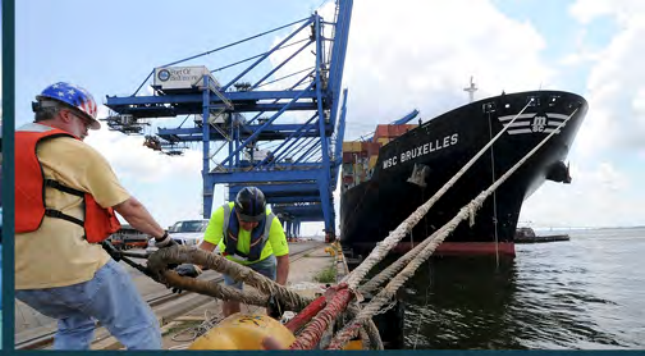


The Freight Plan should also assess the key freight needs and issues in a way that reflects the uniqueness of the different regions across Maryland.

It is important to balance the broader statewide priorities alongside regional relevancy and interests.







Freight Action Planning, Strategies and Focus Areas

Freight Strategy “Starting Points”

- 2040 Maryland Transportation Plan (MTP)
- 2021 Maryland State Rail Plan Update
- 2020 Maryland Statewide Truck Parking Study
- 2019 Maryland Port Strategic Plan
- Other Agency / Stakeholder Coordination

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STATE FREIGHT ADVISORY COMMITTEE

Recent Freight Actions / Resources

- 2017 MD Freight Story
- 2017 MD Freight Economy Dashboard
- 2018 SHRP2 C20 Freight Modeling in MD
- 2017 MD TSMO Strategic Plan
- 2019 MPA Strategic Plan
- 2019 MD State Hwy Mobility Report
- 2020 MD Statewide Truck Parking Study
- 2020 MD CAV Strategic Framework
- 2021 MDT Attainment Report
- 2021 MDOT SHA Truck Parking Analysis
- 2021 MD State Rail Plan
- 2021 MD Truck Platooning Legislation
- MD Roadway Performance Tool (MRPT)
- Key Freight Projects and Studies

Statewide Summary

Notable Freight Topics / Focus Areas?

1. Safety
2. Coordination and Collaboration
3. Innovative Technologies (Truck-Focused)
   a. Truck Platooning
   b. Truck Parking Information Systems
   c. Advanced Driver Assistance Systems (ADAS) (e.g. FMCSA Tech-Celerate)
   d. Other CAV and/or TSMO Opportunities
4. Innovative Technologies (Other)
   a. Personal Delivery Devices (PDD)
   b. Unmanned Aerial Vehicles (UAV) / Drones
5. OS/OW Permitting
6. Workforce Development / Truck Driver Shortages
7. Urban Loading and Delivery Management
8. Rural Freight Infrastructure (e.g. bridges)
9. Role of Short Line Rail
10. Rail Grant Funding Opportunities
11. Air Cargo Capabilities, Growth, and Resilience
12. Homeland Security (e.g. pests or nefarious activities)
13. Land Use Planning and Policy Making (e.g. Freight-Efficient Land Use Principles)

Freight Strategy “Compilation”

Feedback?

Significant freight emphases?

- Coordinate and collaborate
- Emphasize **multimodal** freight systems
- Emphasize **technology** opportunities

Significant freight outcomes?

- Leverage resources (e.g., data, TSMO, ITS, CHART, public-private knowledge, etc.)
- Preserve and strategically improve critical freight infrastructure
- Enhance system efficiencies, resilience, and environmental impacts
- Enhance economic benefits

Missing details?

- Other significant strategy **emphasis** areas, **outcomes**, or **opportunities**?

Poll

Feedback?

Go to **www.menti.com** and use the code **9501 9434**

What other notable focus areas should be considered for the Freight Plan?

Mentimeter

Next Milestones

Spring 2021

Milestone 1: Visioning

Establish the plan's vision, goals, and objectives, while also exploring initial freight-related strategies, needs, and opportunities.

Fall 2021

Milestone 2: Trends, Needs, Projects and Programs

Identify and compile freight-relevant projects and programs to address future trends, needs, and opportunities

Spring 2022

Milestone 3: Draft Plan Review

Compile the overall Maryland State Freight Plan for draft review, including the proposed freight investment plan and strategy details

MARYLAND DEPARTMENT OF TRANSPORTATION

Primary Highway Freight System

Nicole Katsikides
MDOT

STATE FREIGHT ADVISORY COMMITTEE

MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

FEDERAL HIGHWAY ADMINISTRATION UPDATE OF THE PRIMARY HIGHWAY FREIGHT SYSTEM

NICOLE J. KATSIKIDES, PH.D., TEXAS A&M TRANSPORTATION INSTITUTE

FOR

MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

WHAT IS THE PHFS?

- The PHFS is part of the National Highway Freight Network (NHFN).
- The NHFN was required by the FAST Act in 2015 and includes:
  - PHFS – set by FHWA, includes key freight Interstates and Arterials
  - Remaining Interstates – set by FHWA
  - Critical Rural Freight Corridors – Set by States
  - Critical Urban Freight Corridors – Set by MPOs/States if under 500K in population
- The PHFS is limited to 41,518 centerline miles.
- PHFS must be updated by FHWA every 5 years.
- The NFHN is important because it is the network on which National Highway Freight Program freight formula funds/INFRA funds may be spent.

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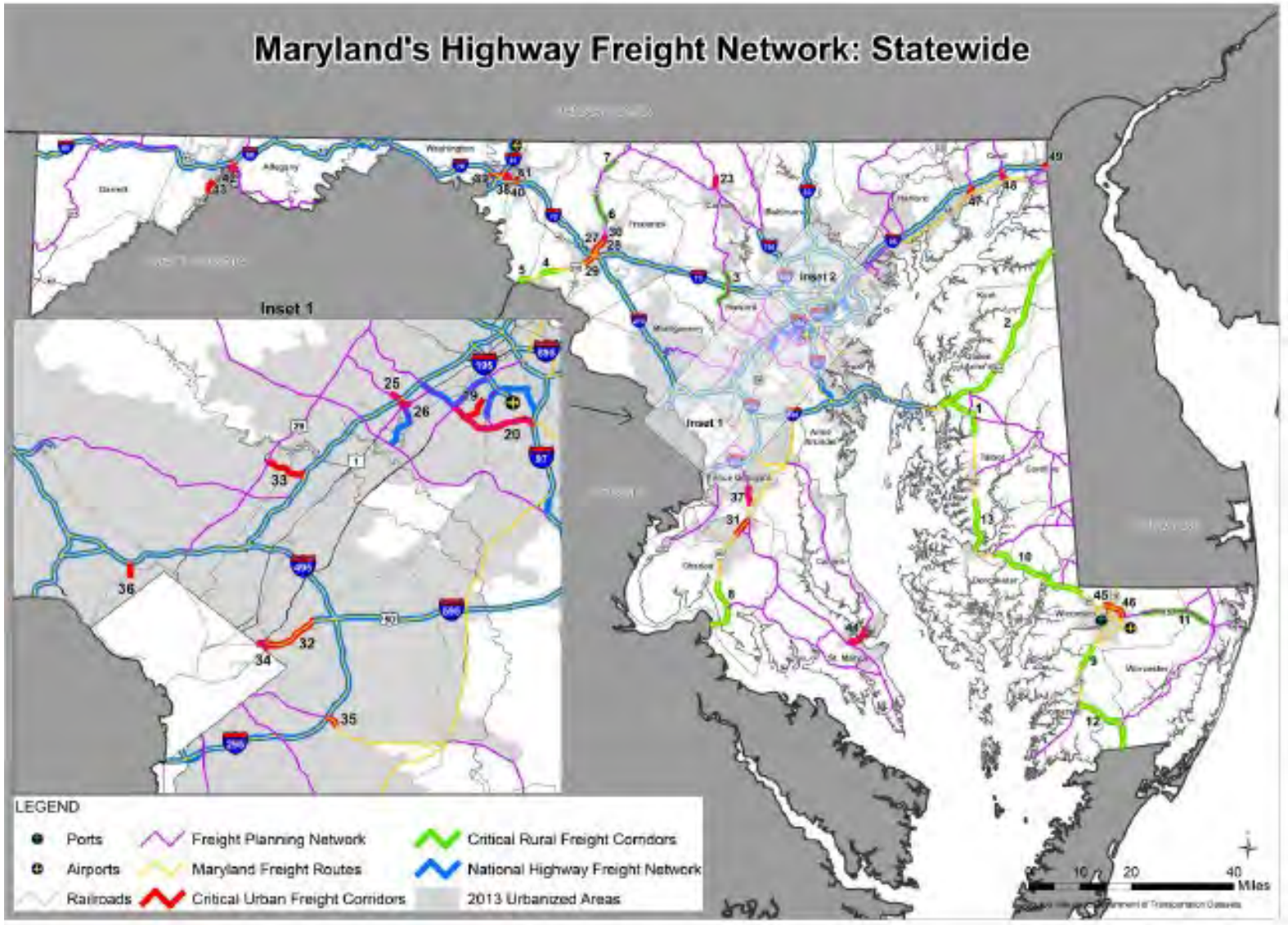
STATE HIGHWAY ADMINISTRATION

NATIONAL HIGHWAY FREIGHT NETWORK FOR MARYLAND



- **PHFS/Interstate is Blue**
- **CRFC is Green**
- **CUFC is Red**

All others on this map are planning networks and not NHFN

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

WHAT GETS UPDATED?

- FHWA may only add 3% mileage or 1,246 miles to the PHFS nationwide.
- Criteria are:
  - Changes in origins and destinations of freight movement in, to, and from the United States
  - Changes in the percentage of annual daily truck traffic in the annual average daily traffic on principal arterials
  - Changes in the location of key facilities
  - Land and water ports of entry
  - Access to energy exploration, development, installation, or production areas
  - Access to other freight intermodal facilities, including rail, air, water, and pipeline facilities
  - The total freight tonnage and value moved via highways
  - Significant freight bottlenecks, as identified by the FHWA Administrator
  - The significance of goods movement on principal arterials, including consideration of global and domestic supply chains
  - Critical emerging freight corridors and critical commerce corridors
  - Network connectivity

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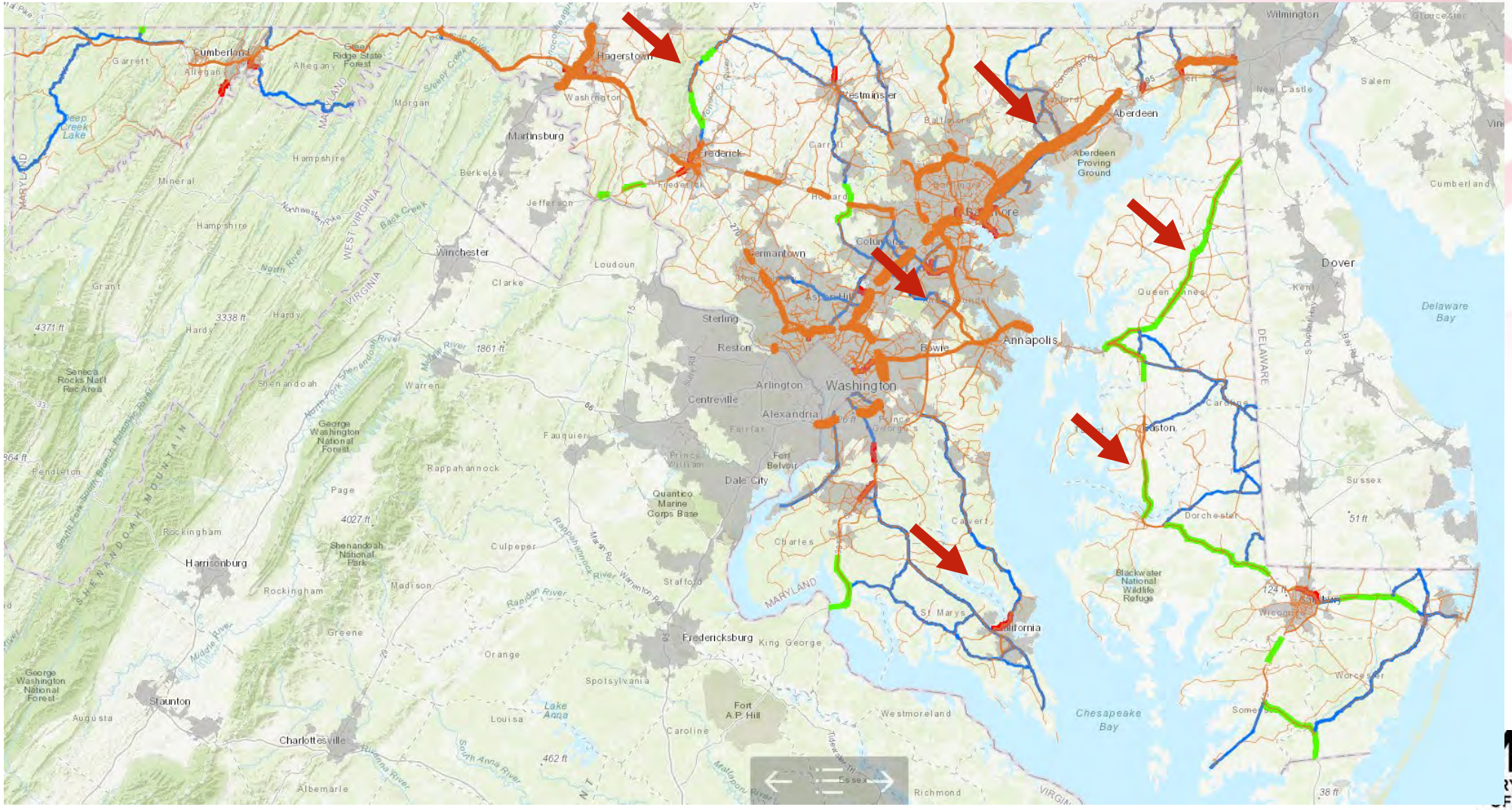
STATE HIGHWAY ADMINISTRATION

WHAT IS THE IMPACT FOR MARYLAND?

- FHWA could add remaining Interstates and CUFC CRFC mileage.
- MDOT could swap existing CUFC and CRFC mileage allowing new routes to be designated (purple network).
- Potential Options
  1. US 301 in Queen Anne's and Kent County into Delaware
  2. US-50 to US-13 on the Eastern Shore
  3. US 15 from Emmitsburg to Virginia
  4. MD 5 from Clinton to Patuxent Naval Air Station, as well as MD 4
  5. US-301 from Waldorf to Virginia
  6. US-40 from Baltimore to Aberdeen Proving ground

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

NETWORK WITH TRUCK VOLUMES FOR REVIEW



SFAC CHARGE

- Please review PHFS Memo and Map https://arcg.is/1b0PTG
- Provide any thoughts on changes by September 15th to nkatsikides.consultant@mdot.Maryland.gov or to 443-322-6762
- MDOT will respond to FHWA on behalf of the SFAC by submitting any feedback on the PHFS redesignation.

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

QUESTIONS AND DISCUSSION

- Nicole Katsikides, Ph.D.
- 443-322-6762
- Nkatsikides.consultant@mdot.Maryland.gov

- For More Information on the Docket:
- Federal Register :: Re-Designation of the Primary Highway Freight System (PHFS)

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION

Howard Street Tunnel Update

Bradley M. Smith
General Manager, Strategic Initiatives
Maryland Port Administration

STATE FREIGHT ADVISORY COMMITTEE

HOWARD STREET TUNNEL

MARYLAND DEPARTMENT OF TRANSPORTATION

UPDATES FROM THE COMMITTEE

STATE FREIGHT ADVISORY COMMITTEE

MARYLAND DEPARTMENT OF TRANSPORTATION

Workforce Updates

Kipp Snow
Director, Transportation, Distribution, and Maritime Logistics
Community College of Baltimore County

STATE FREIGHT ADVISORY COMMITTEE

Transportation Workforce Updates

Maryland State Freight Advisory Committee
Wednesday, Sept 1, 2021

Kipp Snow, Director
CCBC Transportation, Distribution and Logistics Institute

CCBC
Transportation, Distribution & Logistics Institute

This Session Will Showcase:

- Current Challenges and Issues
- Regional Labor Impact
- Workforce Considerations
- Available Solutions
- Training Areas for Consideration

A Dynamic Industry in the Baltimore Region

Economic Statistics

- 1 in 20 jobs are related to the trucking industry.
- Approximately 93,000 direct and indirect jobs in Maryland are related to the Port of Baltimore.
- Over 9000 distribution and logistics companies are in Maryland.
- 5th highest workforce concentration of logisticians in the US.

Trends

- Direct to consumer supply chain solutions.
- Technology Integration including automation and robotics.
- E-commerce.
- Jobs in warehousing and storage more than doubled in the region between 2012-2017 (7500 jobs).

Baltimore Region Labor Impact

Transportation oriented workforce is critical to the economic prosperity of the region

Impact	Jobs	Associated Worker Income	Employers
Baltimore County	66,255	$2.8 billion	4,000+
Regional	235,538	$11 billion	14,000
Statewide	462,196	$22 billion	33,000

Current Challenges and Issues

Workforce challenges prior to COVID-19 pandemic

- Driver shortages
- Skills gaps
- Replacement of retirees
- Negative stigma/image of working in industry

Pandemic response exacerbated the existing problems and created new problems

- Shifts in product demand / supply chain models
- Workforce unemployment / underemployment
- Fewer international sources of employees domestically
- Greater skills gaps
- Retirement age continues to grow

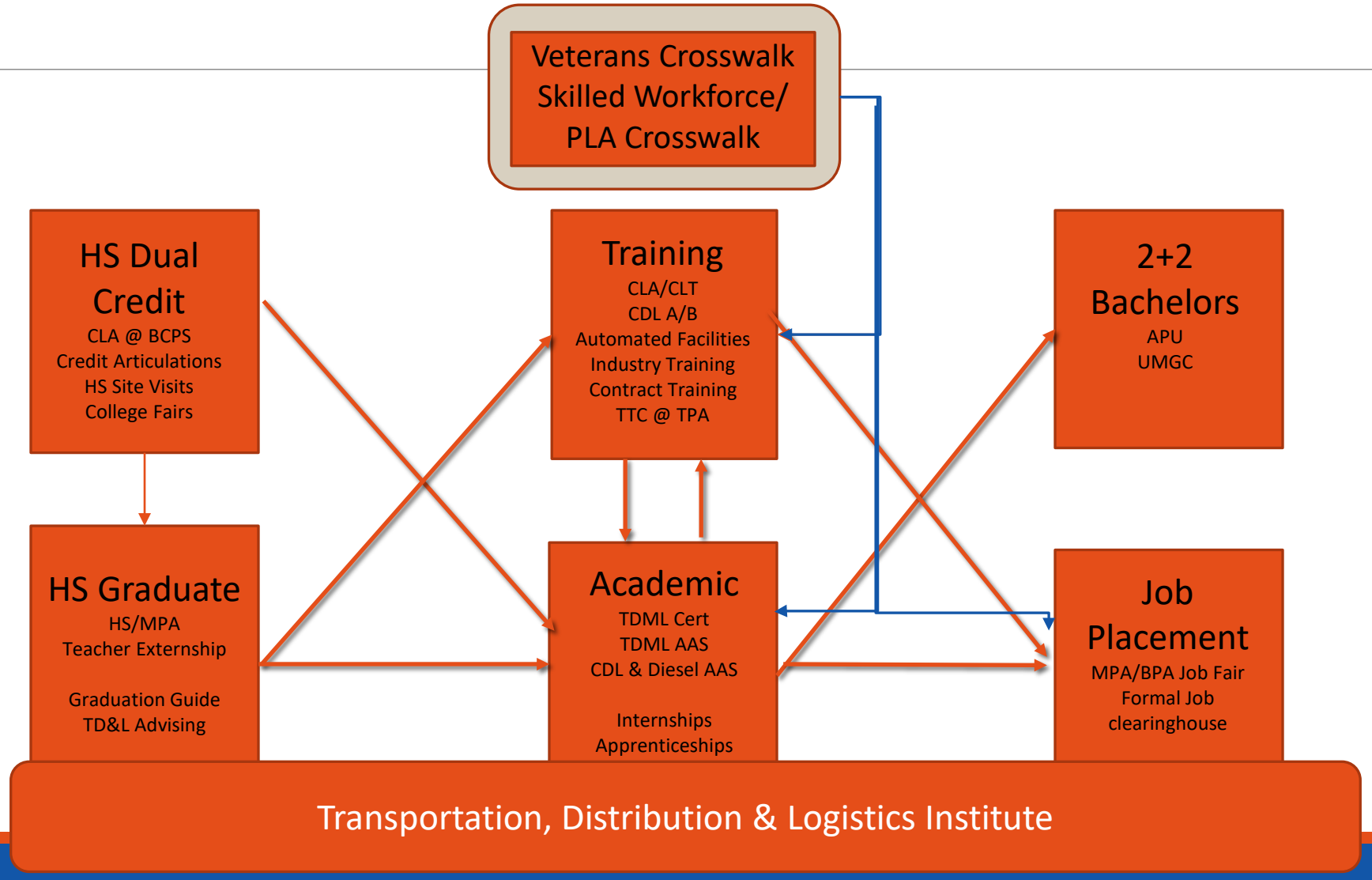
Workforce Considerations

- Multimodal transferrable skills
- Diversity, equity and equality, and inclusion
- Employers adapting business practices to new generation of workers
- Increased demand for new and changing technologies
- Employer/Employee Engagement
- Workforce Development

Workforce Considerations

- Cultivate a non-traditional, multi-source pipeline of talent
  - Cannot rely on traditional methods
  - Must include a multi-faceted, internal and external approach
    - Invest in internal advancement/promotion
    - Educate school age populations about career opportunities
    - Outreach to non-traditional populations
    - Work-life balance
    - Flexible work environments
    - Develop non-traditional training and education opportunities for recruiting and advancement

Potential Pathway Example



Solutions Available for Industry

- Work-based learning
  - Internships and experiential learning
  - Investment in Apprenticeships for recruiting and skill enhancement
- Career Pathway awareness
  - Define academic and career pathways
  - Outreach in primary and secondary education
  - Support educator externships and train-the-trainer programs
- Collaborative Initiatives
  - Cross partnership collaboration with industry
  - Partnerships with Secondary and Post-secondary education
- Promote technical skill training as well as soft skills / critical skills training

TRADEPOINT ATLANTIC

WORKFORCE OPPORTUNITY NETWORK

Access to an abundant trained workforce is key for success, that's why Tradepoint Atlantic has created a workforce opportunity network designed with our tenants in mind, to train and connect a robust regional labor force to jobs in the transportation, distribution, manufacturing, maritime and logistics industry.

NETWORK ORGANIZATIONS

TRADEPOINT ATLANTIC

Invested partner in creating and filling jobs for its tenants

BALTIMORE COUNTY MARYLAND

Supports 1,000 businesses annually with economic and workforce development assistance

60 YEARS BRILLIANT CCBC

Four time Bellwether Award winner and largest training provider in the Baltimore region

Three world-class organizations in partnership to coordinate a workforce system from recruitment and training to retention and employee development.

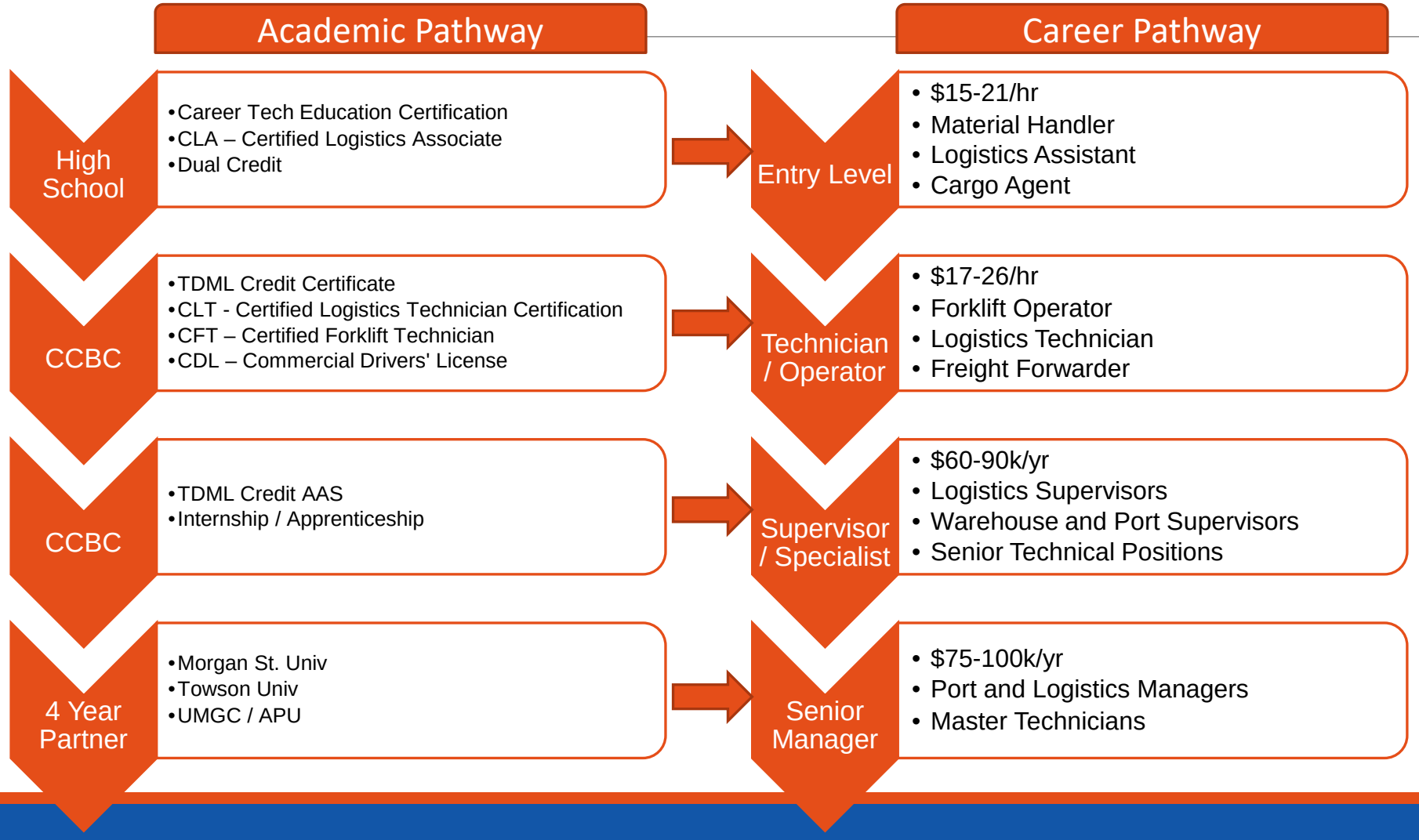
Training Areas for Consideration

High School / Secondary

- Career Fairs / Career Days
  - Field Trips
  - Port of Houston
- Dual Credit Courses
- High School Curriculum / CTE
- Internships
- Work-based learning
- Examples:
  - Apprenticeship Maryland
  - North County HS – AA County
  - New Era Academy – P-TECH and Seagoing Pathway
  - CLA – Certified Logistics Associate
  - CDL Permit / Pre-trip

- College / Post Secondary
  - College Certificates
    - Industry focused
    - Short term credentials
    - Aligned with industry input
  - Associates Degree / 2 year Degree
    - Further Academic Pathways
    - Prior Learning Assessment
    - Credit for Veterans / Military experience
  - Industry Association Certifications
    - MSSC
    - CSCMP
    - Technically Based Credentials
  - State or National Registered Apprenticeships
  - 4 year Traditional Bachelors degree
    - Articulation agreements

Identification of TDL Pathways



This project includes:

- Identifying Baltimore-based career pathways
- Merging related academic and training pathways into model
- Provide step-by-step guidance for students / employees

Academic and Training Connectivity

CERTIFIED LOGISTICS TECHNICIAN (CLT)

•Foundational-Level Certified Logistics Associate (CLA) ® Certificate
•Mid-Level Technical CLT Certification (CLT)

•Covers areas of material handling, packaging, shipping, inventory, HAZMAT, transportation, customs, forklift operations and dispatch

TRANSPORTATION, DISTRIBUTION AND MARITIME LOGISTICS CERTIFICATE (TDML)

- TDML 101 - Introduction to Transportation, Distribution and Maritime Logistics
- TDML 150 - Introduction to Supply Chain Management
- TDML 201 - Domestic Freight Operations
- TDML 148 - Global Commercial Transportation
- TDML 155 - Maritime Transportation and Distribution Technology
TDML 202 - Principles of Maritime Logistics

- Program Elective 3 Credit(s)
  - TDML 273 - Internship

Training Areas for Consideration

- Collaboration with other agencies
  - County / city workforce investment boards
  - Non-profits linking industry with underserved populations
- Specific Training Solutions
  - Organizational specific needs
  - Customized training to job requirements
  - Training designed in line with academic and career pathways

For More Information:

Kipp Snow
Director – CCBC Transportation, Distribution, and Logistics Institute

ksnow@ccbcmd.edu
www.ccbcmd.edu/transportation

CCBC
Transportation, Distribution & Logistics Institute

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Seagirt Marine Terminal

Joe Greco
Vice President, Ports America

STATE FREIGHT ADVISORY COMMITTEE

State Freight Advisory Committee

Seagirt Marine Terminal Update

September 2021

PORTS AMERICA
CHESAPEAKE

Industry Dynamic Overview

- Overall, import demand remains extremely high with inventory levels hovering at historic lows. Ocean shipping has faced, and is facing, challenges such as the Suez Canal blockage and COVID outbreaks shutting down key global ports such as Yantian and now Vietnam and Ningbo. No quick fixes

- Carriers are reacting to the growth of the Baltimore market and BCOs requirements for additional ocean services. Two new services announced for Baltimore in Q3 of 2021;
  - ❑ Maersk TP-20 with service from Vietnam and China
  - ❑ MSC Indus 2 with service from India and trans-ship options in Sines and Gioia Tauro
  - ❑ Both services designed to support growth of the Mid-Atlantic market (they don't include NY/NJ or South Atlantic)

- Market strength is continuing to grow with recent announcements from Wayfair, McCormick, and The Home Depot

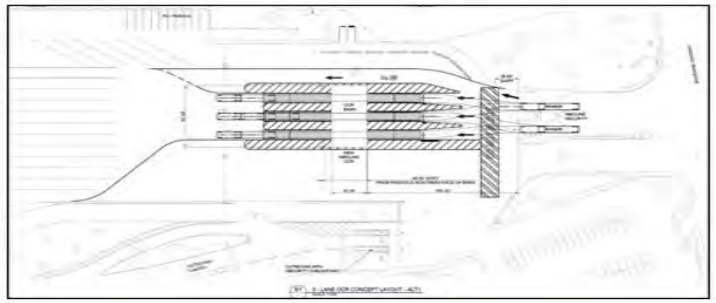
- The Howard St Tunnel Intermodal Rail project is a generational type of initiative that will change the dynamic of intermodal rail on the East Coast, making Baltimore more attractive to ocean carriers as they seek alternatives to NY/NJ

- Baltimore is in the perfect position to continue attracting additional ocean services

Industry Dynamic Overview

- Ports America is investing over $166M on infrastructure, equipment, and technology to support additional growth at Seagirt. Investments include;
  - ❑ 4 additional ship to shore cranes
  - ❑ Berth deepening to accommodate two 14K TEU vessels working simultaneously
  - ❑ Two new gates
  - ❑ Densification program that includes 15 additional rubber tire gantry cranes
  - ❑ New technology products such as DGPS and digital free flow to improve turn time

- PAC has started construction of a new one stage gate
- Three lane building with OCR/DI portals, weigh-in motion scales, and RFID
- Bypass lane for OOG cargo
- Substantial completion anticipated Q3 2021



2021 **2022**

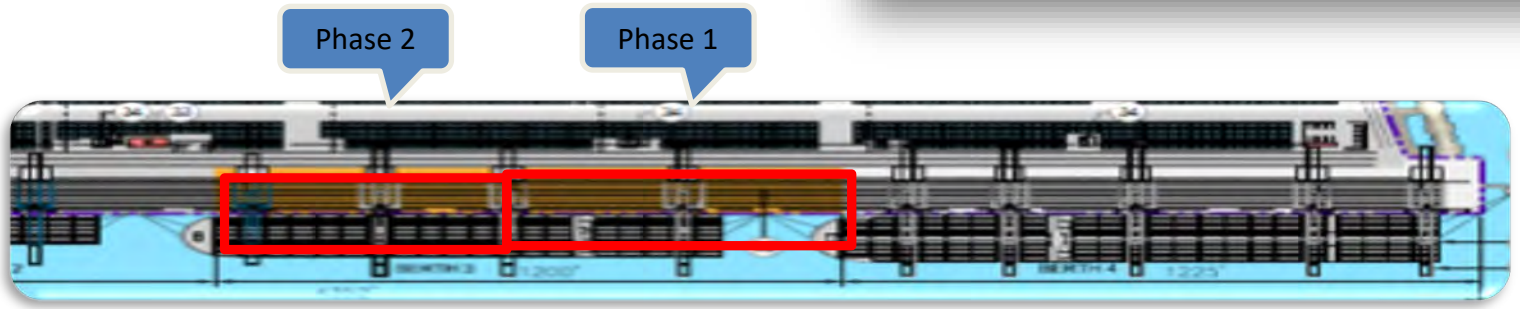
PORTS AMERICA CHESAPEAKE

Seagirt Expansion

Berth 3 Construction

High-Level Construction Timeline

- Phase 1 construction completed with minimal impact to day-to-day port operations
- Phase 2 berth construction has commenced and will be substantially completed in Q4 2021
- Channel dredging has been completed



PORTS AMERICA CHESAPEAKE

Seagirt Expansion

STS Crane Procurement

STS Crane Procurement

- Acceptance testing has been completed
- Punch list items are being completed
- Cranes have been loaded on a vessel for the sixty day transit in June 2021
- New STS Cranes will arrive in early September 2021

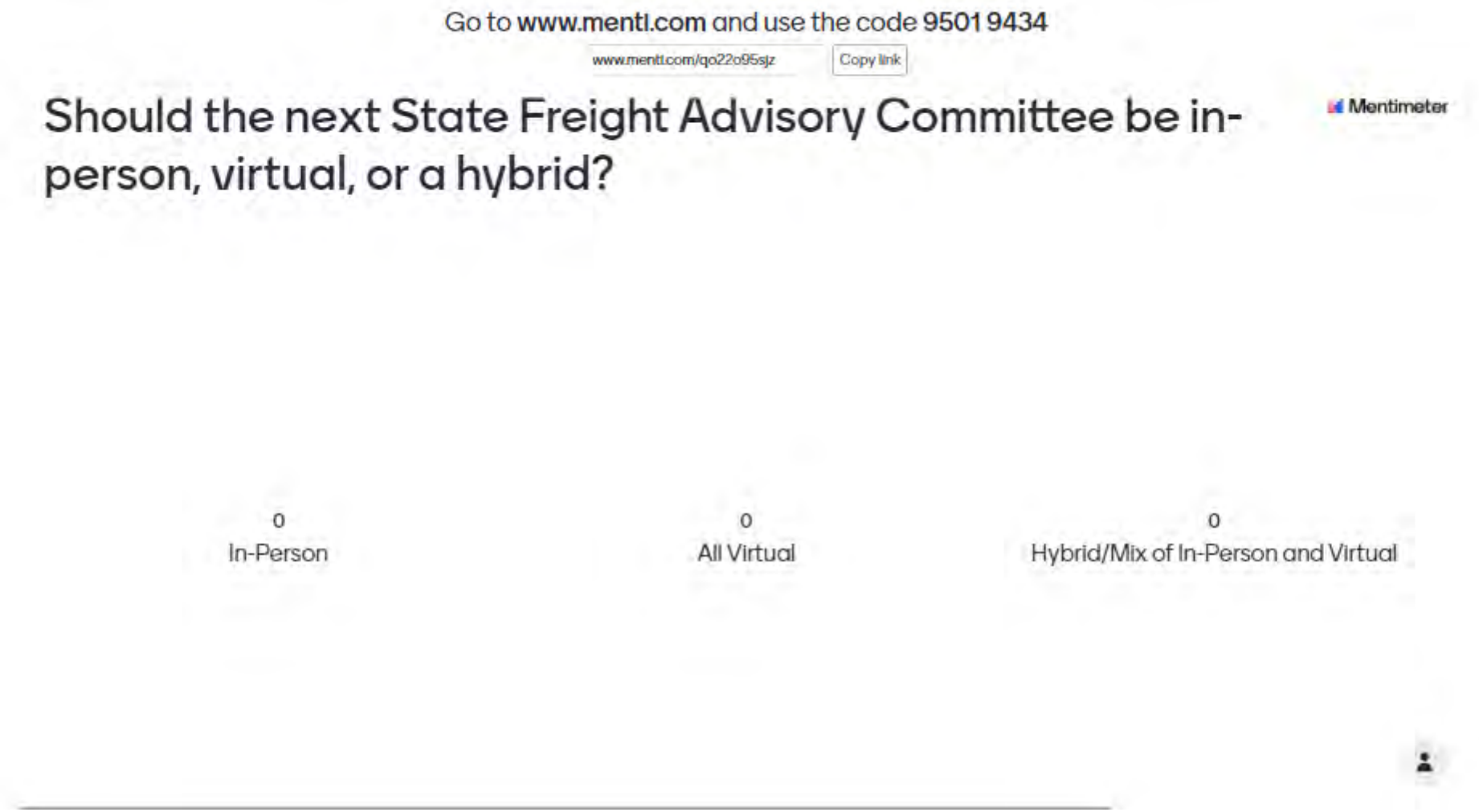
PORTS AMERICA CHESAPEAKE

MARYLAND DEPARTMENT OF TRANSPORTATION

HOUSEKEEPING AND ADMINISTRATION

STATE FREIGHT ADVISORY COMMITTEE

NEXT SFAC MEETING



FUTURE TOPICS POLL

MARYLAND DEPARTMENT OF TRANSPORTATION

THANK YOU

STATE FREIGHT ADVISORY COMMITTEE

FEEL FREE TO CONNECT WITH OTHERS

MARYLAND DEPARTMENT OF TRANSPORTATION

STATE FREIGHT ADVISORY COMMITTEE