Maximizing Multimodal Connections for Improved First- & Last-Mile Freight Mobility (and beyond)

2019 METRANS International Urban Freight Conference (I-NUF)

October 16, 2019
Maximizing Multimodal Connections

Thank You to our Planning Partners!

TRB Urban Freight Committee

AASHTO Special Committee on Freight

U.S. Department of Transportation
Federal Highway Administration
Freight Primers

**Operations, Logistics, and Technology Strategies Primer (2018)**

Guide to implementing on-the-ground strategies to enhance urban freight mobility in urban areas.

**Inform, Collaborate, and Partner Strategies Primer (forthcoming fall 2019)**

Guide to identifying and engaging stakeholders to implement urban freight strategies and projects.

**Forthcoming Multimodal-Focused Primer (anticipated mid-2020)**

Strategies for identifying, prioritizing, funding, and building support for multimodal freight projects.
Peer to Peer (P2P) Program

**Peer Exchanges**
Provide opportunities for knowledge-sharing, information exchange, and technical assistance for State and regional/local government freight practitioners.

International Peer Exchange. Image source: Volpe Center

**Downtown Delivery Symposia**
Joint effort between FHWA and Institute of Transportation Engineers to connect public sector freight practitioners with industry stakeholders to improve first- and last-mile freight movement and logistics.

Maximizing Multimodal Connections

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Urban Freight Issues in a Small Southern Town

October 16, 2019

Dan Pallme, Assistant Chief of Freight
Nashville on a Thursday early evening
Nashville
#1 Fear from the Freight guy

- In 2015, TDOT study stated by 2040, Tennessee can anticipate a 34% growth from 6.3 million people to 8.4 million people.
No need to worry on urban freight

- Picture’s worth a 1,000 words (or additional people)!
Glimpse of Nashville
Potential Pilot from UPS

- UPS
- E-bike Delivery
- Spring of 2020
- Lesson learned from here
Worries to hinder economic prosperity in Nashville

• There is nothing we can do!!!
Glimpse of Nashville issues

• Some unique to Nashville.
Multimodal Oppty – Rail as an Option
Rail Programs To Assist in Modal Diversion

• Rail Rehabilitation
• Rail Competitive
  – Job creation
  – Marketability of available industrial suites
  – Highway diversion
• An added benefit not seen
Multimodal Oppty - Water

- Importance
- Concern
## Future Freight Flows

### Freight Movement is Multimodal

Every mode of transportation moves freight, but trucking is the primary mode of freight travel.

<table>
<thead>
<tr>
<th>Mode</th>
<th>2013</th>
<th>(in tons)</th>
<th>2040</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>14 billion</td>
<td>+35%</td>
<td>18.8 billion</td>
<td></td>
</tr>
<tr>
<td>Rail</td>
<td>1.9 billion</td>
<td>+49%</td>
<td>2.8 billion</td>
<td></td>
</tr>
<tr>
<td>Waterborne</td>
<td>808 million</td>
<td>+32%</td>
<td>1.1 billion</td>
<td></td>
</tr>
<tr>
<td>Air</td>
<td>15 million</td>
<td>+263%</td>
<td>53 million</td>
<td></td>
</tr>
</tbody>
</table>

55 million tons of freight move across our nation every day.
Multimodal Real Case Scenario in Tennessee

Outside the box thinking: COB (Total Supply Chain)

Seacor in Memphis / Photo by Dan Pallme
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Let me know if you know others that want to be included on our freight contact list.
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Partnerships to address Urban Freight Challenges at the Port of Baltimore

Maryland Port Administration
Jill Lemke
Manager, Strategic Planning & Special Projects
Our mission:

To increase the flow of waterborne commerce through the State of Maryland in a manner that benefits the citizens of the State.

To fulfill this mission, the MPA partners with a variety of agencies and entities that help make the Port of Baltimore work.
The Port of Baltimore is a complex mix of Private and Public terminals....

- 45 miles of waterfront facilities and industries.
- 23 private facilities handle nearly all of the bulk commodities.
- Six MPA public terminals handle over 90% of the general cargo.
- Active relationships by both public & private sector entities, on local, regional, state, national and international levels.
As the City grew up around the Port, terminal activities were shifted south for larger areas of land, opening up the Inner Harbor for redevelopment.

Formed over 300 years ago, the Port of Baltimore is older than the City itself.
Is all “Urban Freight” created equal?
Supply Chains are Increasingly Complex

Every step along the supply chain, every mode change, adds to the cost of goods.
The Port has **global** and **local** reach, connecting many Mid-Atlantic suppliers and markets worldwide.
In the last 300 years, enormous shifts in waterborne cargo movement and ship design have taken place, requiring a larger Port and terminals.

Our “Delivery Vehicles” are getting bigger, not smaller as global freight volumes continue to grow.
Larger ships facilitate globalization and international trade, but require deeper channels – With 50 foot channels, Baltimore is one of only a handful of US east coast ports currently capable of handling the largest “post-Panamax” ships.
In Baltimore, the “first mile” and “last mile” are getting more and more difficult to separate.
Challenge: Finding room to grow in a region where industrial land supply is shrinking, high demand is driving up costs, with increasing pressure from communities interested in quality of life and environmental concerns.

In Baltimore, the “first mile” and “last mile” are getting more and more difficult to separate.
The Port’s success is dependent on partnerships, stakeholder engagement and public support

- The strong relationship between the Port and our neighbors is a product of years of relationship building.

- The Port has learned from past controversies that Stakeholder Engagement and Partnerships are crucial.

- The Baltimore Port Alliance (BPA) is a group of representatives of businesses and organizations within the Port of Baltimore.
Inner Harbor successes, and recent real estate booms, spread investment and speculation to other waterfront areas.
Partnership with Industry Groups and Baltimore City: Maritime Zoning Protections

Balancing Waterfront Growth & Development

Planned Unit Developments
The **Maritime Industrial Zoning Overlay District** (MIZOD) was drawn to protect existing industrial properties with deep water access that were also in a “Heavy Industrial” (M-3) Zoning District.
The Maritime Industrial Overlay District or, MIZOD preserved these areas for maritime industrial use by:

- Disallowing PUDs
- Prohibiting hotels, motels, taverns, and all other uses not permitted in an M-3 district
- Allowing offices and restaurants only as accessory uses
- Creating a 20 year “moratorium” on Rezoning
Partnership with Industry Groups and Baltimore City: Maritime Zoning Protections

Maritime Industrial Overlay District (MIZOD)
Maritime Industrial Overlay District (MIZOD)

- The MIZOD was adopted as a protective overlay district in 2005, and amended in 2008.
- It had a sunset date of 2024, with a 12-month opt-out period in 2014.
- No properties opted-out.
- MIZOD protection provides firms with the confidence to make significant capital investments.
The City conducted annual evaluations of the MIZOD for the first three years, and found that:

- MIZOD firms made **significant capital investments** after it was enacted.

- Despite initial declines in cargo volume following the great recession, business at the Port grew beyond pre-recession levels.

- While other east coast port cities continued to compete for its business, the MIZOD successfully enhanced the Port of Baltimore’s competitiveness.
In 2017, a new Zoning Code was enacted, making the Maritime Industrial Zone a permanent zoning district, with the same protections as the MIZOD built in... with no sunset provision.
Partnership with Ports America Chesapeake

In January 2010, the MPA and Ports America Chesapeake (PAC) entered a landmark 50-year public-private partnership or P3 for the management and redevelopment of the State-owned Seagirt Marine Terminal.
Partnership with Ports America Chesapeake

- PAC has since invested millions of dollars in capital improvements. Those improvements included new yard cranes, cargo handling equipment, paving, a grain-transload facility, RFID technology, a new back gate, and 6 new RTG cranes, in addition to a new 50 foot deep berth and four new Neo-post Panamax ship to shore cranes.

- PAC partnership to operate the SMT Intermodal ICTF Facility, invested in new RTG cranes, and the redevelopment of a 37 acre industrial park for future terminal expansion.

- Post-recession container growth continues to break new records for the Port.

TEU = Twenty Foot Equivalent Unit
Partnership with CSX and MDOT: Double-Stack Rail Capability

• 124-year old CSX-owned rail tunnel under Howard St./Downtown Baltimore is a freight bottleneck – it is 18 inches too short to allow for double stacking of containers.
• Several City bridges over rail line need to be raised;
Partnership with MDOT and CSX: Federal Infra Grant ($125M) to expand Howard Street Tunnel

- MDOT and MPA partnered with CSX to successfully apply for $125M in Federal Funding for the $466M project to expand the tunnel to allow double stack rail capability into and out of the Port of Baltimore.

- $147M State Funding
- $91M CSX Funding
- Challenge: Funding Gap $103M
- Outcome: TBD
- Goal: Increase Container Volumes at the POB, and reduce the number of Trucks on the Highway network.
Other MDOT MPA Partnerships

• **Baltimore City Official Truck Routes:** Focus on where trucks should go, instead of on restricted routes; electronic enforcement mechanisms to encourage compliance; all registered Port Trucks notified of new routing. **Challenge:** Getting GPS providers to add approved truck routing to existing GPS Systems.

• **EPA DERA Grant Partnerships:** $ 5,863,907M in EPA Grants since 2013; Incentivized the modernization of Cargo Handling Equipment, dray trucks, locomotives, and marine engines. Result: Emissions down 19% while cargo volumes increased 10%.

• **Maryland One Permit System:** A first-in-the-nation automated truck permit system to reduce overweight-hauling permit processing from days or weeks to hours, eliminating review fees. Estimated to save the trucking industry $6 million annually in fees.
1. The Port is growing, and that is projected to continue, but we are not without challenges, especially to freight linkages.

2. Intermodal freight connections link Maryland and the Mid-Atlantic region to the global marketplace. Without those links, the Port cannot continue to function.

3. The Port is the economic heart of the Maryland economy.

4. The Port creates family sustaining jobs for all skill levels.
Questions?

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Port of Portland
Using Regional Research to Identify Freight Infrastructure Priorities

Scott Drumm, Port of Portland
Stacy Shetler, Washington County
October 16, 2019
Overview

• Port of Portland and its role in trade and freight
• Regional culture of collaborative freight research
• State of Trade Report
• Greater Portland Export Plan ➔ Westside Freight Access and Logistics Analysis
Port of Portland

4 Marine Terminals
3 Airports
5 Business Parks
Navigation
Collaborative Regional Research

- Regional Commodity Flow Forecast
- Regional Truck Model
- Trade Capacity Study
- Freight Data Collection Project
- Cost of Congestion Studies
- Value of Trade/State of Trade Reports
- Greater Portland Export Plan
- Westside Freight Access and Logistics Analysis
State of Trade

12% of Oregon’s GDP depends on international exports

Portland is #14 of top 100 U.S. metro regions for highest export value.
State of Trade

Calls to action:

• Encourage leaders to ensure the US retains a free trade agreement with Canada and Mexico
• Support new trade agreements to expand access for Oregon products creating more jobs
• Advocate for programs to retool and up-skill workers for new traded sector industries
• *Invest in the maintenance, expansion, and resiliency of our infrastructure to ensure businesses can efficiently move export products nationally and internationally*
• Strengthen support for local, state, and federal export assistance programs, helping small businesses enter the trade markets
Westside Freight Access and Logistics Analysis

Challenge: connecting westside manufacturers with Portland International Airport, particularly during PM peak
West Side Freight Access and Logistics Analysis

- Computers and electronics account for over half the total value of the regions exports

Figure 1: Industries Representing Two Percent or More of the Portland Region's Exported Goods

Source: Brookings Institution Export Nation 2013 (http://www.brookings.edu/research/interactives/export-nation)
West Side Freight Access and Logistics Analysis

- Reliability of the roadways system is key to goods movements.

- Delays or missed shipments can shut down overseas production lines.

Figure 4: Goods Flow to Overseas Gateways
Westside Freight Access and Logistics Analysis

Industry interviews confirmed:

- Freight consolidation at PDX is the key destination for C&E goods from the Westside
- PDX is gateway for both air freight and truck freight destined for other international air cargo gateways
- Primary freight routes to PDX from Westside
Westside Freight Access and Logistics Analysis

3 strategies met the specific needs of Westside C&E freight movements

• Potential to increase travel time reliability
• Can be implemented in the near term.

1. Enhanced Traveler Information
2. US 26 Truck Ramp Meter Bypass
3. Enhanced Freeway Incident Response
Westside Freight Study

Washington County ITS Plan

ODOT 217 Real-Time

TIGER Grant

Project
TIGER Grant Award

Funding

Grant Award: $10,125,000
Match: $3,500,000
Total Funding: $13,625,000

Washington County Match, $1,500,000
ODOT Match, $2,000,000

78% TIGER Grant Request, $12,145,000

Funding for $15,645,000 Project Costs
Freeway Strategies

- **Traveler Information Sign**
  - **CONGESTION AHEAD RIGHT LANE 1/2 MILE**

- **Travel Time Sign**
  - **TRAVEL TIME TO VIA 217 12 MIN 10 MIN**

- **Advisory Speed Sign**
  - **ADVISORY SPEED 40**
Arterial Strategy: Truck Extensions

- Extend green to **reduce** the probability of:
  - Truck at beginning of queue → increasing intersection capacity
  - Truck running the red signal indication → reducing crash exposure

Key Measures Evaluated

- Travel time
- Travel time reliability
- Transit on-time performance
- Crash Rate
- Greenhouse gas emissions
- Average daily traffic
Expected Outcomes

- Similar enhancements made to nearby Oregon 217
- Expect similar improvements from US 26/I-84 investments

**Primary Benefits**
- Total crashes down 12%
- Travel time reliability improved 19%

**Additional Benefits**
- Peak travel time down 9-18%
Air Cargo Demand Continues to Grow

- PDX air cargo volumes have grown more than 20% since study was done
- PDX cargo volume up 20% YTD; 25% increase August YOY
- Exports of electronic components up more than 50% YTD
QUESTION AND ANSWER SESSION
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