THE DELAWARE VALLEY

GOODS MOVEMENT TASK FORCE

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

April 20, 2022
Zoom Meeting

IIJA / BIL Competitive Funding Programs

- Notices of Funding Opportunities
  - RAISE — *closed April 14*
  - Port Infrastructure Development Program — *due May 16*
  - Multimodal Project Discretionary Program — *due May 23*
    - MEGA
    - INFRA
    - Rural Surface Program

- Upcoming Notices of Funding Opportunities
  - Railroad Crossing Elimination Program — *expected in June*

DVRPC IIJA / BIL Resources

- Webpage: www.dvrpc.org/IIJA
- Information and Data
- Support Letters
- Contacts:
  - Kristen Scudder – kscudder@dvrpc.org
  - Sean Greene – sgreene@dvrpc.org
  - Michael Boyer – mboyer@dvrpc.org

New Jersey Zero-emission Incentive Program: Policy in Practice

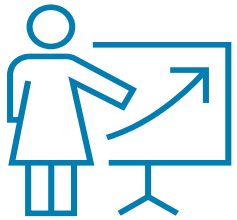
April 20, 2022

Victoria Carey – Clean Energy Manager
vcarey@njeda.com

NJ EDA
ECONOMIC DEVELOPMENT AUTHORITY

Transitioning New Jersey's transportation system to zero-emission alternatives is critical to becoming a stronger and fairer state

Transportation accounts for 42% of NJ's emissions, with a quarter coming from MHDV, which disproportionately impact overburdened communities



In meeting our zero emission vehicle targets, **we can reduce net emissions especially in overburdened communities**

By pursuing the zero-emission transition, **we can create jobs and reduce costs, increasing economic opportunity**

A cohesive financial, strategic, and regulatory tool set coordinated across government and industry – and driven by communities' self-identified needs – is key to meaningfully achieving our goals

NJ ZIP: Zero-emission Incentive Program – At a glance

NJEDA's RGGI-funded Voucher Pilot for Medium Duty Vehicles

Funding

$44.25M in voucher pool (expanded from an initial $15M pool), anticipated to support purchase of approximately 300 vehicles

Timing

First come, first serve with rolling approvals, open until all funds committed. Set asides by location and for small businesses to ensure equitable access.

Eligibility

Businesses or institutions operating or registering/domiciling zero-emission medium duty vehicles in Greater Camden, Newark, New Brunswick, and Shore Areas

Voucher Amounts

Vehicle Class	Voucher $
Class 2b	$25,000
Class 3	$55,000
Class 4	$75,000
Class 5	$85,000
Class 6	$100,000

Bonus voucher criteria

- Minority-, women-, or veteran-owned business ($4k)
- Small business (25%)
- Small business scrappage ($2k)
- 25% NJ-manufactured (25%)
- Public access for driver readiness and education ($2k)

Basic program requirements

- $1000 application fee
- Buy new ZEV & register in NJ
- 3 years operation with 75% in NJ and 50% in EJ
- Vendor provides charging and in-state maintenance plan
- Comply with audit requirements

NJEDA

LEARN MORE AT www.njeda.com/njzip

NJ ZIP: Common questions

What communities are eligible?

Greater Camden Area

Bellmawr, Camden, Cherry Hill, Cinnaminson, Collingswood, Delran, Deptford, Gloucester, Lawnside, Lindenwold, Magnolia, Maple Shade, Merchantville, Mount Ephraim, Mount Laurel, Palmyra, Paulsboro, Pennsauken, Riverside, Somerdale, Stratford, Voorhees, Washington, West Deptford, Westville, Woodbury, Woodlynne

Greater Newark Area

Bayonne, Belleville, Bloomfield, Carlstadt, Carteret, Clark, Clifton, Cranford, East Newark, East Orange, East Rutherford, Elizabeth, Glenridge, Guttenberg, Harrison, Hillside, Hoboken, Irvington, Jersey City, Kearney, Kenilworth, Linden, Little Falls, Livingston, Lyndhurst, Maplewood, Millburn, Montclair, Moonachie, Newark, North Arlington, North Bergen, Nutley, Orange, Passaic, Rahway, Roselle, Roselle Park, Rutherford, Secaucus, South Orange, Springfield, Summit, Union City, Union Township, Verona, Wallington, Weehawken, West New York, West Orange, Westfield, Woodridge

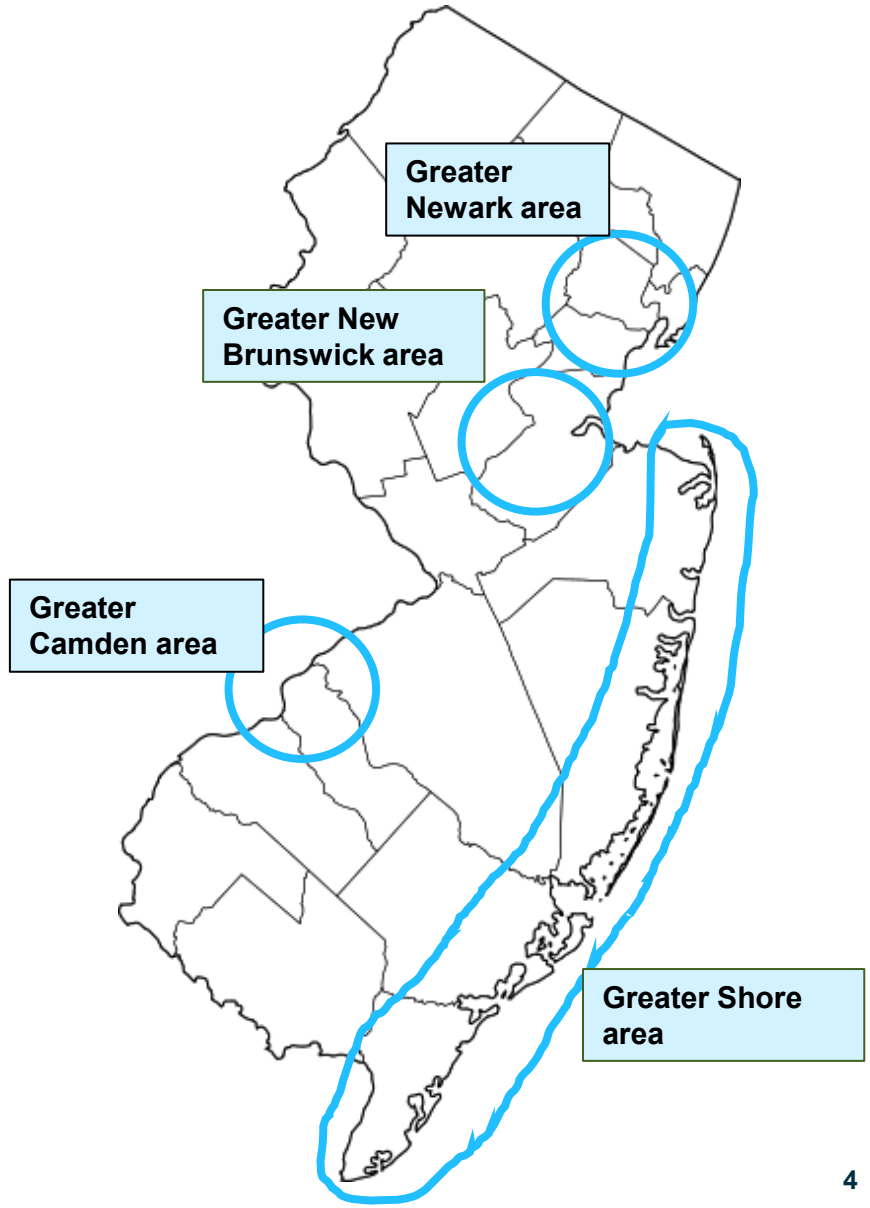
Greater New Brunswick Area

Bound Brook, Bridgewater, Clark, Dunellen, East Brunswick, Edison, Franklin, Green Brook, Highland Park, Hillsborough, Jamesburg, Manville, Metuchen, Middlesex, Monroe, Montgomery, New Brunswick, North Brunswick, North Plainfield, Old Bridge, Perth Amboy, Piscataway, Plainfield, Raritan, Sayreville, Scotch Plains, Somerville, South Amboy, South Bound Brook, South Brunswick, South Plainfield, South River, Spotswood, Woodbridge

Greater Shore Area

Greater Shore Area: Absecon, Asbury Park, Atlantic City, Barnegat Township, Berkeley Township, Bradley Beach Borough, Brick Township, Brigantine, Cape May, Colts Neck Township, Eatontown Borough, Egg Harbor City, Egg Harbor Township, Farmingdale Borough, Galloway Township, Highlands Borough, Holmdel Township, Howell Township, Keansburg Borough, Keyport Borough, Lacey Township, Lakewood Township, Little Egg Harbor Township, Long Branch, Lower Township, Manchester Township, Middle Township, Middletown Township, Neptune City Borough, Neptune Township, North Wildwood, Northfield, Ocean City, Ocean Gate Borough, Ocean Township, Pleasantville, Point Pleasant Beach Borough, Red Bank Borough, Seaside Heights Borough, Shrewsbury Township, Somers Point, South Toms River Borough, Stafford Township, Tinton Falls Borough, Toms River Township, Tuckerton Borough, Union Beach Borough, Ventnor City, Wildwood, Woodbine Borough

Approximate locations; visual may not be accurate to exact eligible municipalities



Example Voucher Calculation

How do you calculate the voucher amount?

You don't have to! The application auto-calculates. But for example…

You are a small, women- and veteran-owned NJ business. You need to buy (1) Class 3 vehicle to add to your fleet. You find an approved Vendor who sells a zero-emission version, and get a quote of $125,000 (pre-voucher) for the vehicle.

Voucher amount = (Base voucher amount x Small business bonus) + Woman-owned business bonus + Veteran-owned business bonus

Voucher amount = ($55,000 x 1.25) + $4,000 + $4,000

Voucher amount = $76,750

Upfront cost to buyer = $125,000 - $76,750 = $48,250 final cost with voucher

Note: All vouchers are capped at 100% of vehicle cost and a single applicant is capped at $1.5M

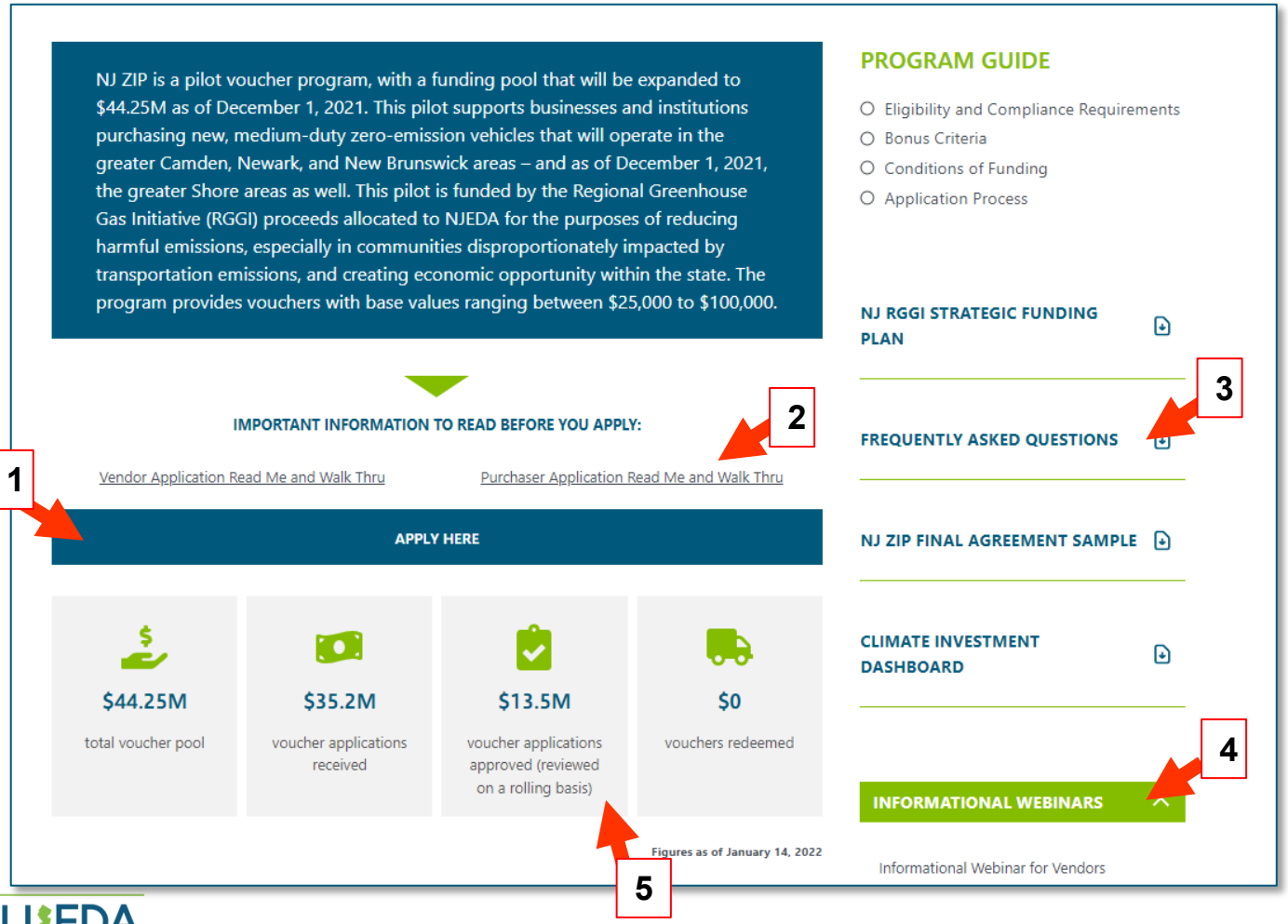
Illustrative program design process and considerations example

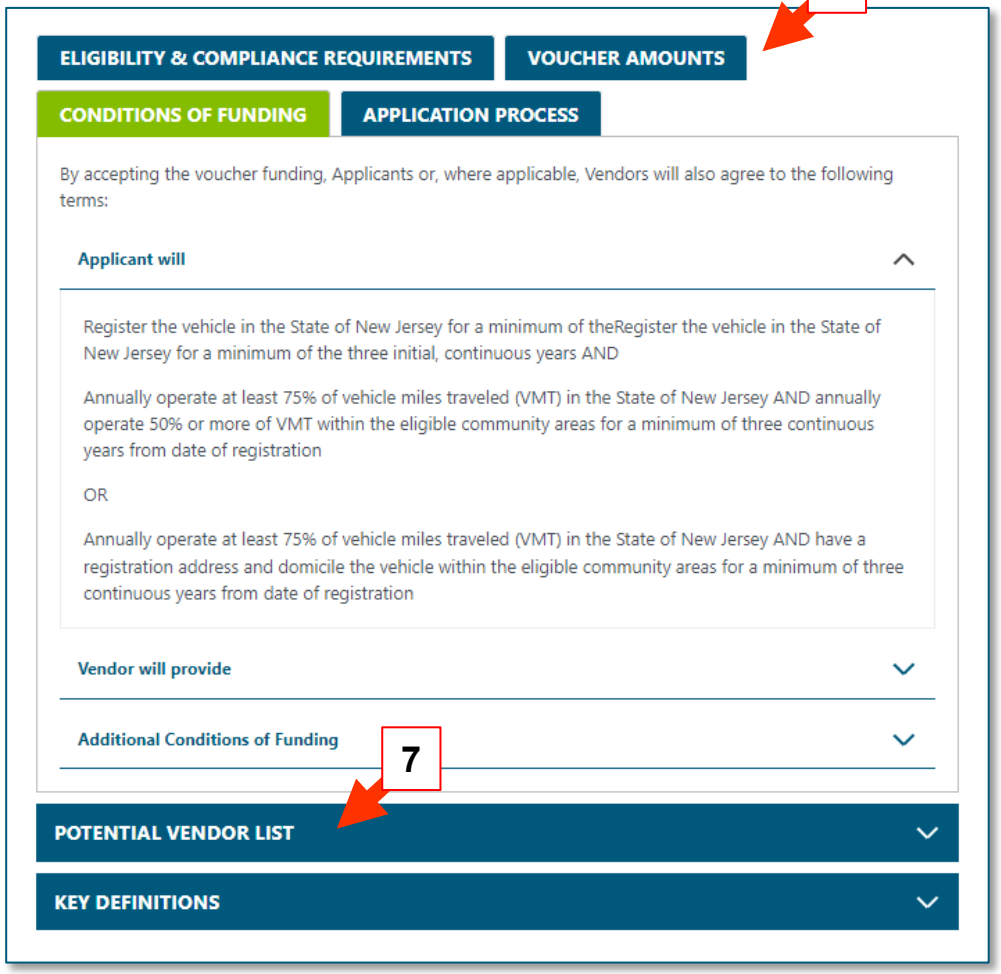
Sample of stakeholder-identified issues	NJ ZIP pilot design features	Future research?
Upfront costs of ZE MHDV are too high →	• Reduce upfront cost with voucher rather than rebate or tax incentive • Provide bonuses for small and minority-, woman-, and veteran-owned businesses	• Financing options • Lease programs • Pre-owned vehicles • Repower/retrofit
Environmental justice communities need immediacy of solutions →	• Focus on medium-duty vehicles • Require registration of ZEV in 6 months • Require >50% operation within pilot overburdened communities, greater Camden and greater Newark areas	• Heavy-duty sector • Expand to more areas • Use-case focused support
There is limited charging infrastructure available →	• Address supply / demand catch 22 by supporting vehicle purchases • Focus pilot on short-haul or depot-based use-cases	• Make ready funding • Charger incentives
ZE MHDV support structures in NJ are limited →	• Require the provision of a standard warranty and in-state servicing	• Education campaigns & certs development • Business incentives

NJ ZIP: Common questions

Where can I find more information about NJ ZIP?

https://www.njeda.com/njzip/





NJ ZIP: Common questions

Where can I find more information about EVs in NJ?

https://www.drivegreen.nj.gov/

Delaware Valley Goods Movement Task Force
20 April 2022

New Jersey Statewide Freight Plan - 2022

NJ Statewide Freight Plan

- Ongoing/Complete:
  - Goals and Objectives
  - Recent/Previous Studies
  - “Emerging” Trends
  - Economic Analysis
  - Highway Analysis
- Underway/Forthcoming:
  - Other Modal Analyses (Rail, Maritime, Air, Pipeline)
  - Performance Measures
  - Innovative Technologies
  - Priorities/Actions

Schedule

Modal Analyses – June 2022
Performance Measures – July 2022
Emerging Trends/Innovative Technologies – August 2022
Priorities/Actions – October 2022
Draft Plan/Final Plan – November/December 2022

2022 NJ Statewide Freight Plan - Vision

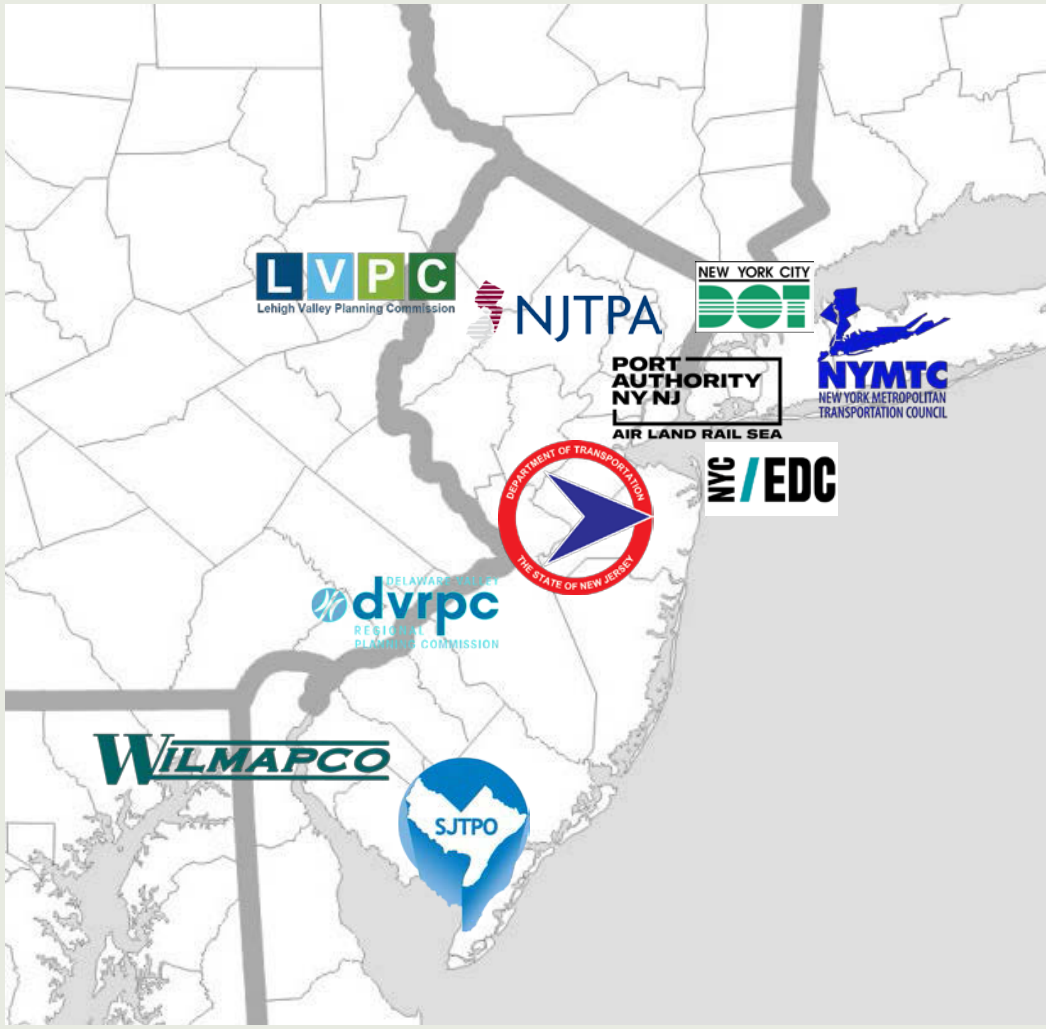
- Improve the operating conditions for New Jersey's goods movement industry.
- Develop freight-focused initiatives that can support immediate and longer-term economic growth in the state

Goals and Objectives

- Enhance System and Supply Chain Safety and Security
- Strengthen System and Supply Chain Competitiveness and Productivity
- Advance System Reliability, Efficiency, Redundancy, Fluidity, and Connectivity
- Enhance System Resiliency and Sustainability
- Maintain and Renew Multimodal Infrastructure
- Advance Freight as a Good Neighbor through Environmental Stewardship, Equitable Policy Decisions, Responsible Development, and Quality of Life
- Facilitate Intra-, Inter-, and Multi-state agency Coordination and Governance and Actions
- Leverage Advanced Technology, Multimodal Freight Transportation, and Public-Private Partnership Opportunities and Practices

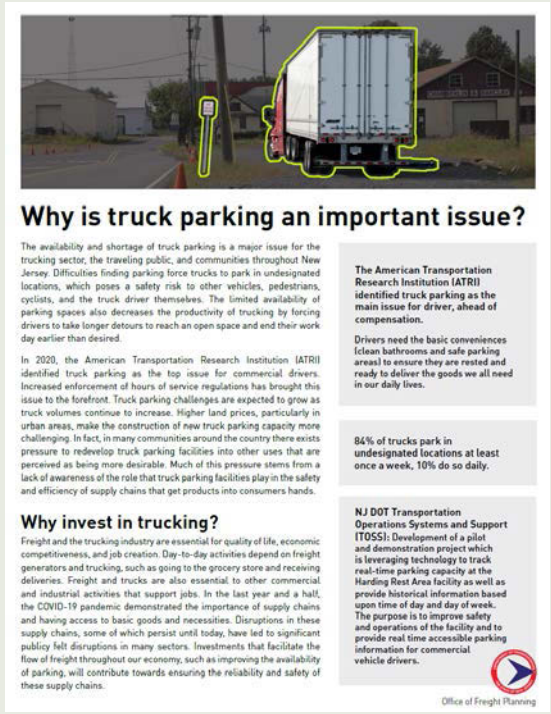
Recent/Previous Studies

- Reviewed nearly 50 ongoing or recently completed freight planning/implementation projects advanced by NJ and adjacent state MPOs/Agencies.
- Final plan will include brief summary of each plan and links to each.



Emerging Trends

- Freight/Complete Streets
- Disruption Response (Pandemic) Toolkit
- Truck Parking
- Wind Port
- Links with Lehigh Valley



Why is truck parking an important issue?

The availability and shortage of truck parking is a major issue for the trucking sector, the traveling public, and communities throughout New Jersey. Difficulties finding parking force trucks to park in undesignated locations, which poses a safety risk to other vehicles, pedestrians, cyclists, and the truck driver themselves. The limited availability of parking spaces also decreases the productivity of trucking by forcing drivers to take longer detours to reach an open space and end their work day earlier than desired.

In 2020, the American Transportation Research Institution (ATRI) identified truck parking as the top issue for commercial drivers. Increased enforcement of hours of service regulations has brought this issue to the forefront. Truck parking challenges are expected to grow as truck volumes continue to increase. Higher land prices, particularly in urban areas, make the construction of new truck parking capacity more challenging. In fact, in many communities around the country there exists pressure to redevelop truck parking facilities into other uses that are perceived as being more desirable. Much of this pressure stems from a lack of awareness of the role that truck parking facilities play in the safety and efficiency of supply chains that get products into consumers hands.

The American Transportation Research Institution (ATRI) identified truck parking as the main issue for driver, ahead of compensation.

Drivers need the basic conveniences (clean bathrooms and safe parking areas) to ensure they are rested and ready to deliver the goods we all need in our daily lives.

84% of trucks park in undesignated locations at least once a week, 10% do so daily.

Why invest in trucking?

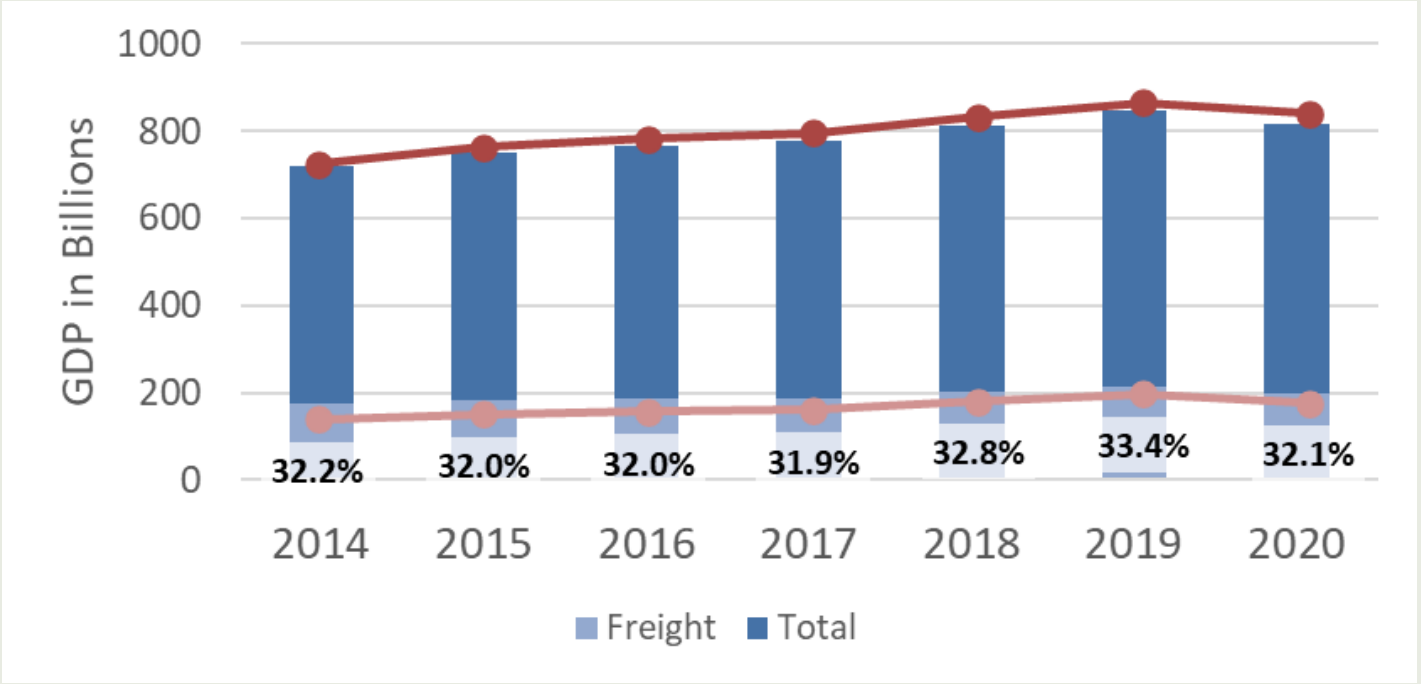
Freight and the trucking industry are essential for quality of life, economic competitiveness, and job creation. Day-to-day activities depend on freight generators and trucking, such as going to the grocery store and receiving deliveries. Freight and trucks are also essential to other commercial and industrial activities that support jobs. In the last year and a half, the COVID-19 pandemic demonstrated the importance of supply chains and having access to basic goods and necessities. Disruptions in these supply chains, some of which persist until today, have led to significant publicy felt disruptions in many sectors. Investments that facilitate the flow of freight throughout our economy, such as improving the availability of parking, will contribute towards ensuring the reliability and safety of these supply chains.

NJ DOT Transportation Operations Systems and Support (TOSS): Development of a pilot and demonstration project which is leveraging technology to track real-time parking capacity at the Harding Rest Area facility as well as provide historical information based upon time of day and day of week. The purpose is to improve safety and operations of the facility and to provide real time accessible parking information for commercial vehicle drivers.

Office of Freight Planning

NJ Freight Industry GDP and Growth

- Freight Industry GDP accounts for about 32% of the total GDP in NJ
- Freight GDP growth has been increasing at the same rate as the total GDP



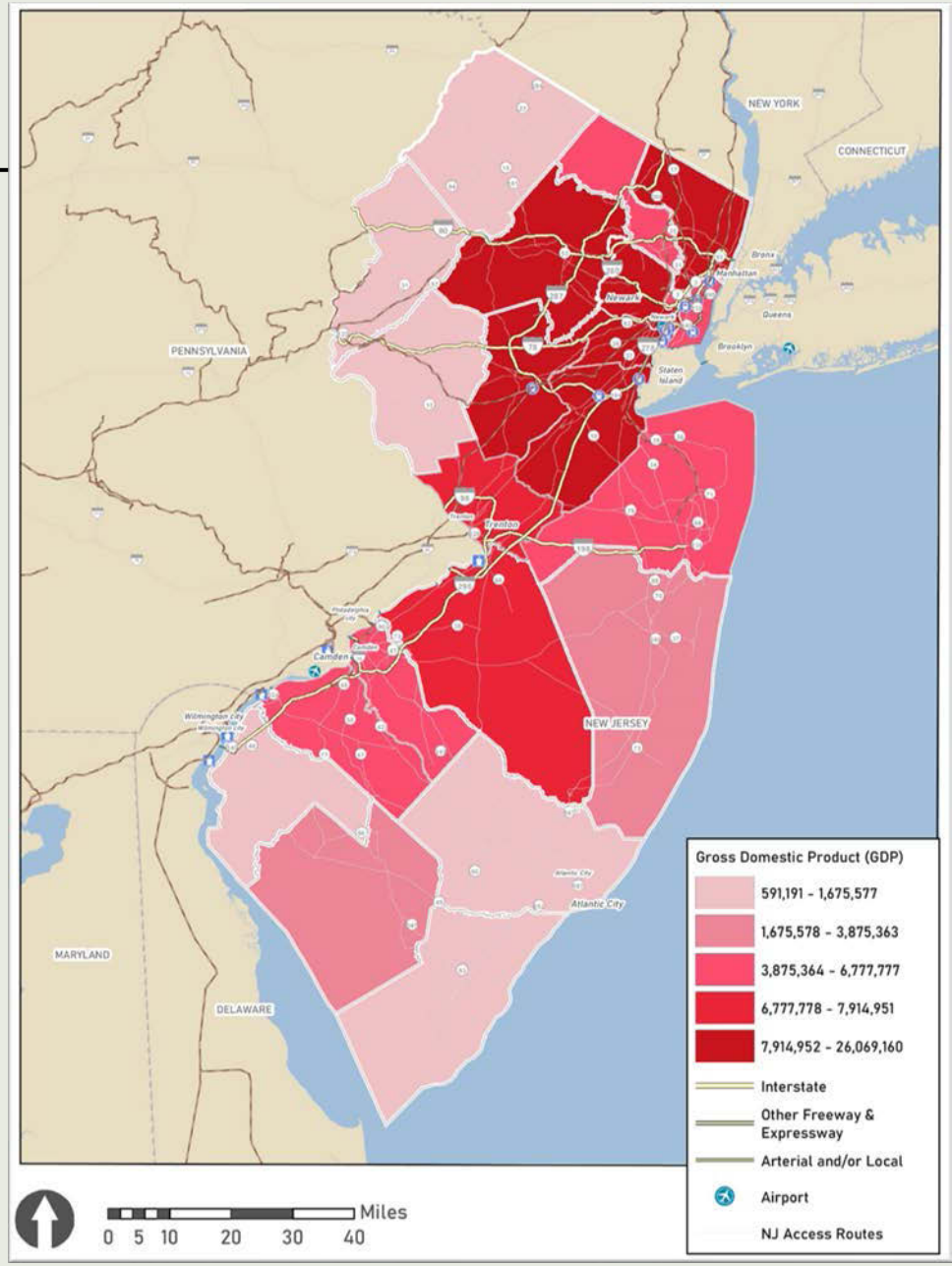
NJ Freight Industry GDP and Growth

Industry	2015	2016	2017	2018	2019	2020	Growth (2015-2020)	Growth percentage (2015-2020)
Wholesale trade	49068.6	47420.9	48167	50790.9	54631	51529.8	$2,461	5%
Retail trade	32390.3	33174.7	34184	35014	36674.3	36525.4	$4,135	13%
Chemical products manufacturing	17523.2	21699.8	18988.7	19462.9	21820.7	22371.8	$4,849	28%
Construction	19620.2	19762.9	20122.6	20581.8	21753	21588.3	$1,968	10%
Utilities	11084.8	9779.4	9449.2	9906.5	9881.1	10045.2	($1,040)	-9%
Food services and drinking places	8838.1	9428.9	9921.4	10565.1	11486.4	8581.2	($257)	-3%
Computer and electronic products	4110.1	4274.6	5056.1	5363.7	5666.5	5544.4	$1,434	35%
Petroleum and coal products	3909.9	2181.1	2642.1	7185.3	7171.9	5472.6	$1,563	40%
Food, beverage, tobacco products	4078.8	4466.6	4517.8	4493.1	4698.8	4820.8	$742	18%
Truck transportation	4234	4335.4	4621.9	4885.2	5020.2	4609.7	$376	9%
Miscellaneous manufacturing	3604.6	4063.3	4327.1	5064.6	4137.1	4108.5	$504	14%
Warehousing and storage	2234.8	2657.5	3166.3	3635.6	4073.2	3846.7	$1,612	72%
Fabricated metal products	1882.9	1974.5	2155.4	2349.8	2661.7	2449.9	$567	30%
Waste management and remediation services	1771.7	1776.1	1985.1	2106.9	2133.6	2129.6	$358	20%
Machinery manufacturing	1654.2	1657.4	1938.9	1939	2003.1	1907.4	$253	15%
Air transportation	5005.4	5903.3	5900.1	5831.4	6308.1	1757.2	($3,248)	-65%
Nonmetallic mineral products	1256.9	1345	1372.6	1647.7	1672.4	1719.9	$463	37%
Plastics and rubber products manufacturing	1447.4	1537.7	1542.7	1622.1	1662.7	1616.8	$169	12%
Printing and related support activities	1499.7	1514.6	1485.4	1615.8	1452.3	1374.1	($126)	-8%
Paper products manufacturing	1300.3	1272.7	1201.5	1331.2	1130.4	1109.1	($191)	-15%
Electrical equipment manufacturing	1172.8	1133.9	1024.3	1023.3	1098.2	991.4	($181)	-15%

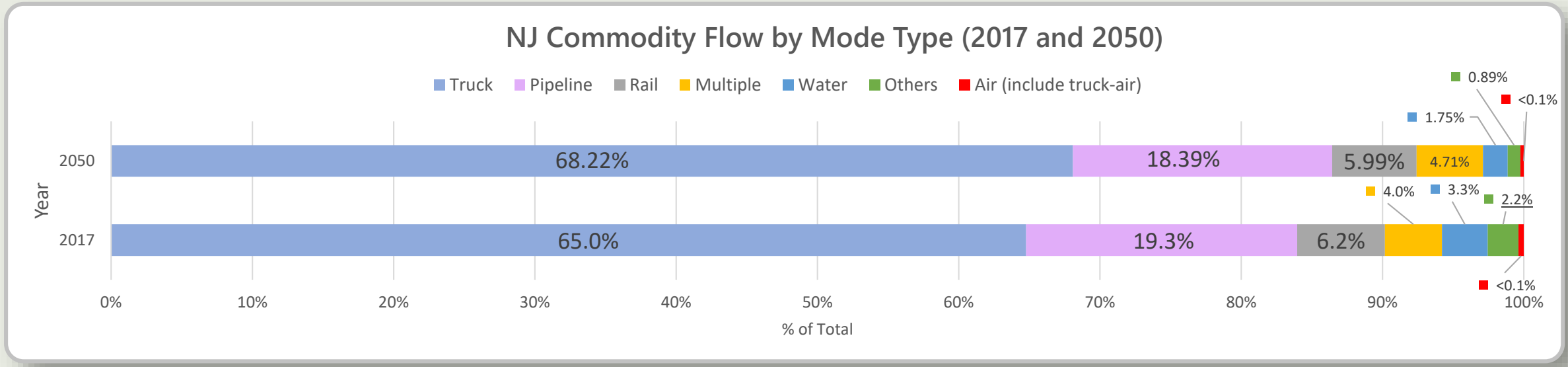
- Top Freight Industries
- Largest Growth ($GDP)
- Largest Growth (%)
- Largest Decline (%)

New Jersey GDP by County (2015-2019)

- Substantial GDP centered on I-95 corridor
- Growth in nearly all counties
- Substantial growth in DVRPC counties (~20% of statewide growth)

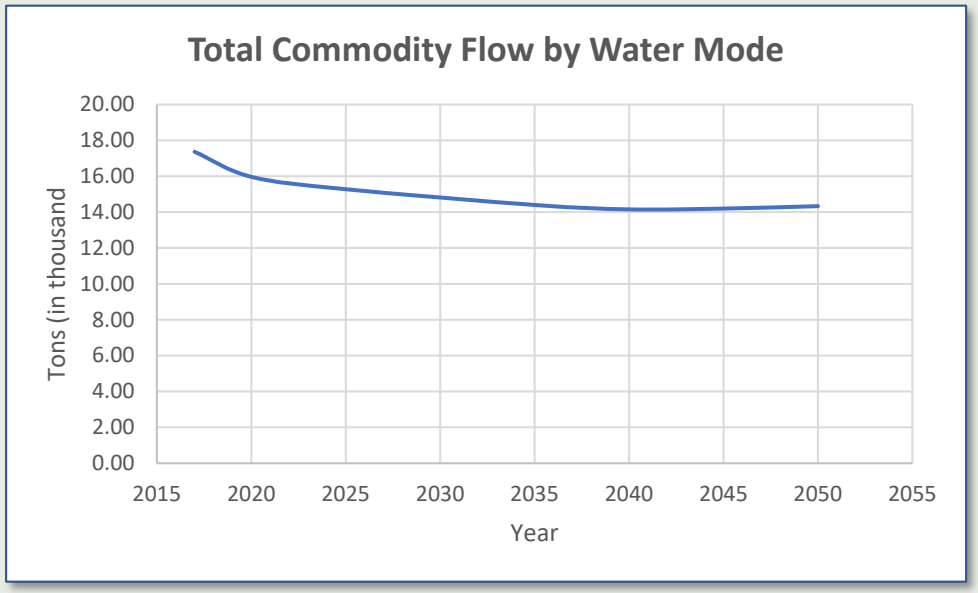


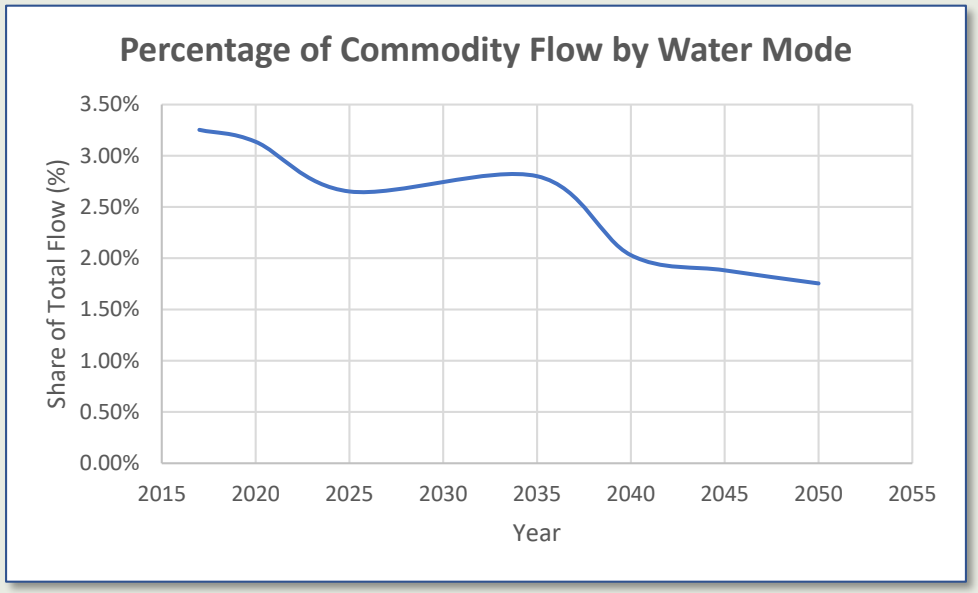
Commodity Flow by Mode Type (tonnage)



	2017		2050		2017-2050		
Mode of Movement	Tons (000s)	% of Total	Tons (000s)	% of Total	Tons Added (000s)	Compound Annual Growth Rate (CAGR) Tonnage	Total Growth
Truck	347.01	65.0%	557.35	68.2%	210.34	1.4%	60.6%
Pipeline	102.80	19.3%	150.22	18.4%	47.42	1.2%	46.1%
Rail	33.25	6.2%	48.90	6.0%	15.65	1.2%	47.1%
Multiple	21.62	4.0%	38.46	4.7%	16.84	1.8%	77.9%
Water	17.37	3.3%	14.34	1.8%	-3.03	-0.6%	-17.5%
Others	11.67	2.2%	7.30	0.9%	-4.37	-1.4%	-37.4%
Air (include truck-air)	0.20	<0.1%	0.41	< 0.1%	0.21	2.2%	102.5%
Total	**533.93**	100.0%	**816.98**	100.0%	**283.05**	**1.3%**	**53.0%**

Commodity Flow by Mode Type (tonnage)





- America's Marine Highway Program (Biden-Harris Port Action Plan)
  - Mid-Atlantic Barge (Balzano Marine Terminal)
  - New York Harbor Container and Trailer-on-Barge
  - Cape May – Lewes Ferry
- "Blue Highways" pilot program - NYCDOT & NYCEDC joint program to shift transport away from trucks and more toward waterways
- Port Raritan
- New Jersey Wind Port

What is NPMRDS?

- National Performance Management Research Data Set (NPMRDS)
- Package of vehicle probe data on NHS across the U.S.
  - Archived travel time and speed at 5-minute intervals
  - Truck-specific data available
- Calculate daily and hourly values for
  - 10th percentile travel time (free flow)
  - Average travel time
  - 95th percentile travel time

THE NATIONAL PERFORMANCE MANAGEMENT RESEARCH DATA SET (NPMRDS) AND APPLICATION FOR WORK ZONE PERFORMANCE MEASUREMENT

U.S. Department of Transportation
Federal Highway Administration

The NPMRDS offers a free data source to State and Local transportation agencies for monitoring and reporting transportation system performance measures, as well as for setting and meeting mobility objectives and targets.

Overview

Transportation agencies are increasingly using probe vehicle data for transportation system performance management and as a resource for meeting the federal requirements of monitoring and reporting congestion and freight performance enacted in the Moving Ahead for Progress in the 21st Century Act (MAP-21). Federal regulations require setting objectives and targets to guide transportation funding allocation based on safety and operational performance measures.

To assist agencies with meeting the MAP-21 regulations, the Federal Highway Administration (FHWA) provides free access to the National Performance Management Research Data Set (NPRMDS), a national database of probe-vehicle-based speed and travel time data. The NPMRDS offers a new opportunity to monitor and report work zone performance measures. Using the NPMRDS, agencies can better benchmark the baseline mobility conditions prior to work zone activity, quantify and analyze work zone mobility impacts both during construction and post-construction, and implement mobility objectives and targets to proactively manage work zone mobility impacts.

National Performance Management Research Data Set Overview

The NPMRDS contains field-observed travel time and speed data collected anonymously from a fleet of probe vehicles (cars and trucks) equipped with mobile devices. Using time and location information from probe vehicles, the NPMRDS generates speed and travel time data aggregated in 5-minute, 15-minute, or 1-hour increments. The data are available across the National Highway System (NHS), with a spatial resolution defined by Traffic Message Channel (TMC) location codes. A TMC represents a unique, directional roadway segment that is about half a mile to a mile long in urban and suburban areas and could be as long as five to ten miles long in rural areas. The NPMRDS covers more than 400,000 TMCs and includes several billions of speed and travel time observations across the NHS for both freeways and arterials. The NPMRDS has been available since 2013, with freeway data dating back as far as 2008.

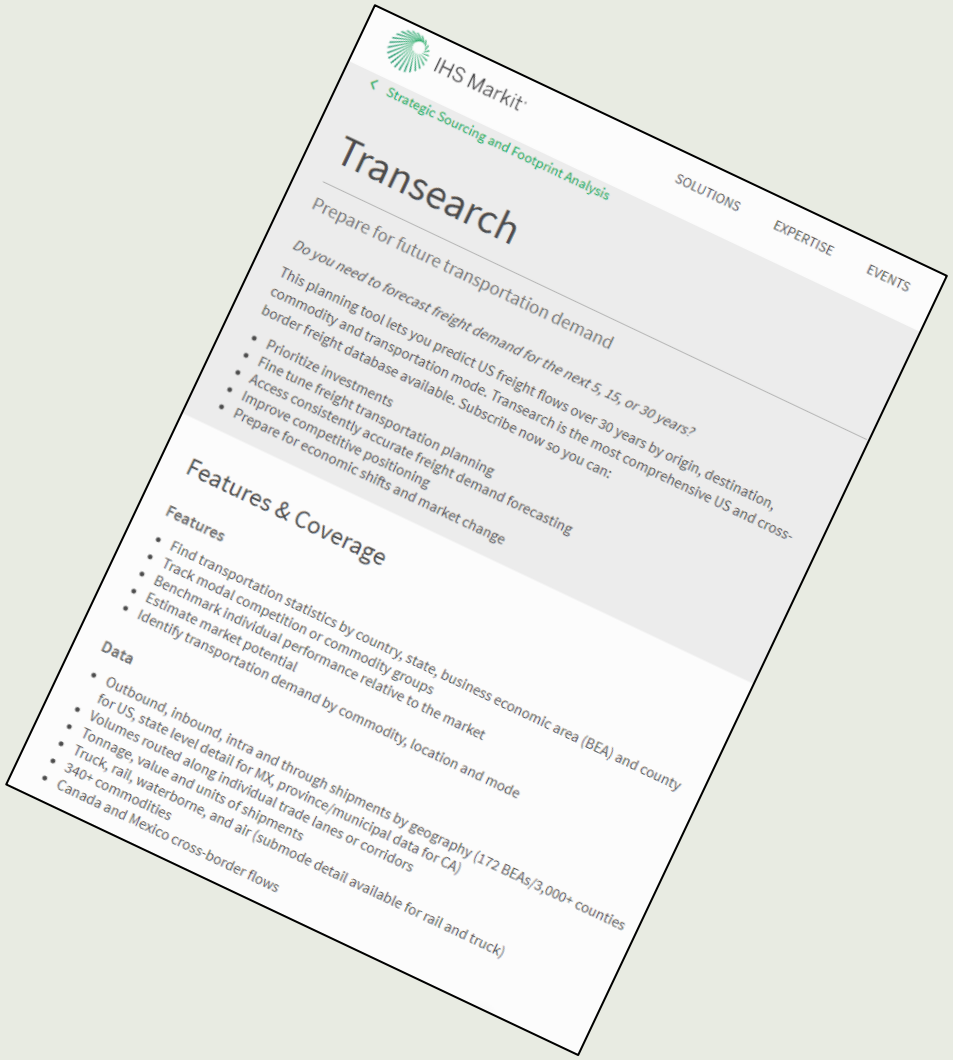
The National Performance Management Research Data Set in a Nutshell

Data Providers: INRIX, TomTom, HERE
Funded By: FHWA
Purpose: Support MAP-21 regulation and ongoing transportation system mobility performance measurement
Users: Federal, State, and regional agencies
Data Source: Probe vehicles
Metrics: Speed, travel time, and static AADT (2017)
Data Latency: One-month old
Lowest Temporal Resolution: 5 minutes
Spatial Resolution: TMC level (about ½ mile to 1 mile in urban/suburban areas and 5-10 miles in rural areas)
Geographical Coverage: NHS
Modal Coverage: Truck and passenger car
Data Format: CSV and ArcGIS shapefiles (road segment details)
Licensing Agreement: Required

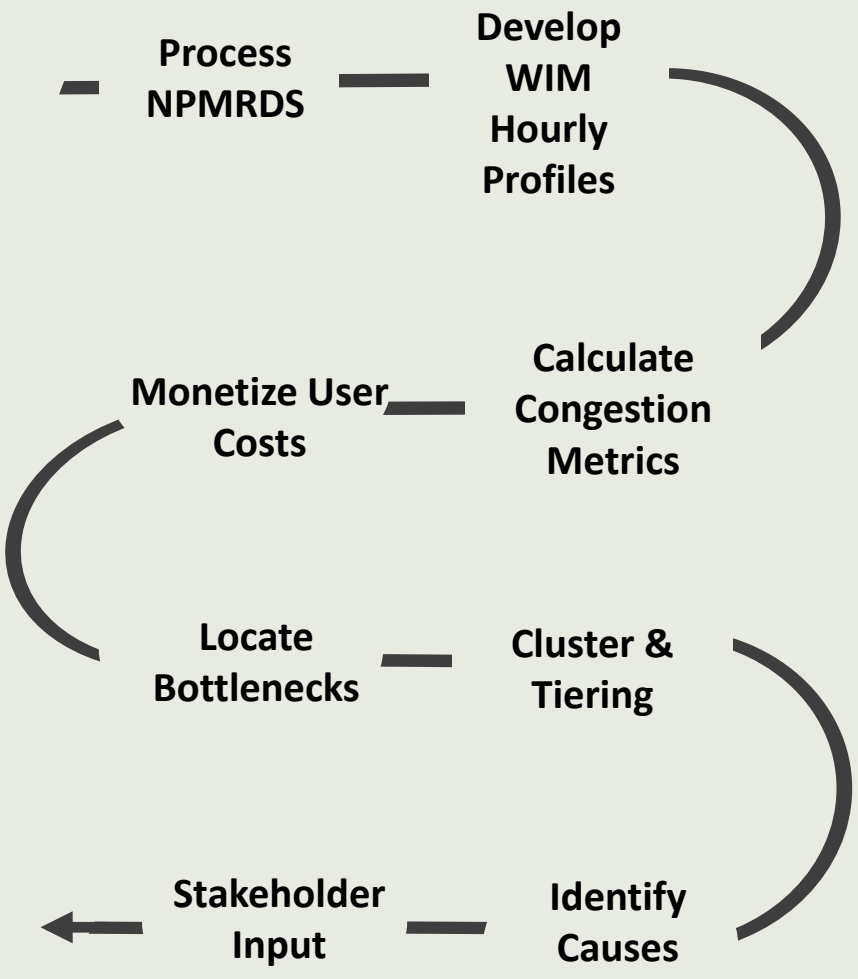
1

What is Transearch?

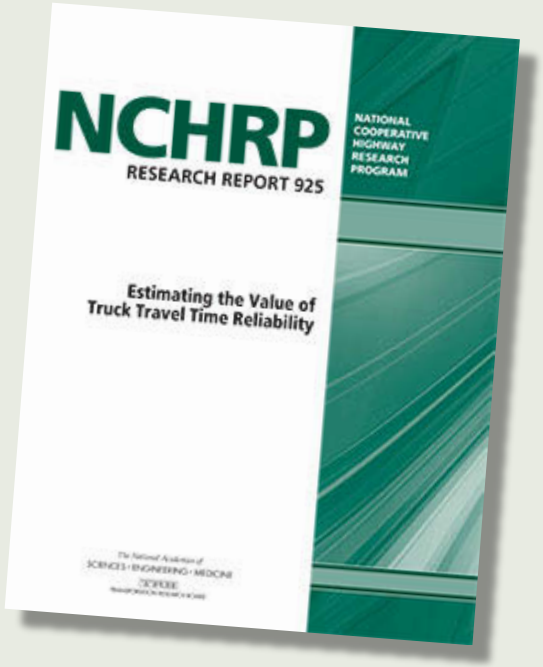
- Package of freight flow data and forecasts released by IHS Markit
- Accessed from NJDOT
- Commodity-level data (STCC2) with O/Ds and routing information
- ~4.5 million records in Transearch database (2018)
  - 2019 flows determined by interpolating between 2018 data and 2040 forecast
- Identify key freight corridors and flows associated with advanced manufacturing



Truck Bottleneck Analysis

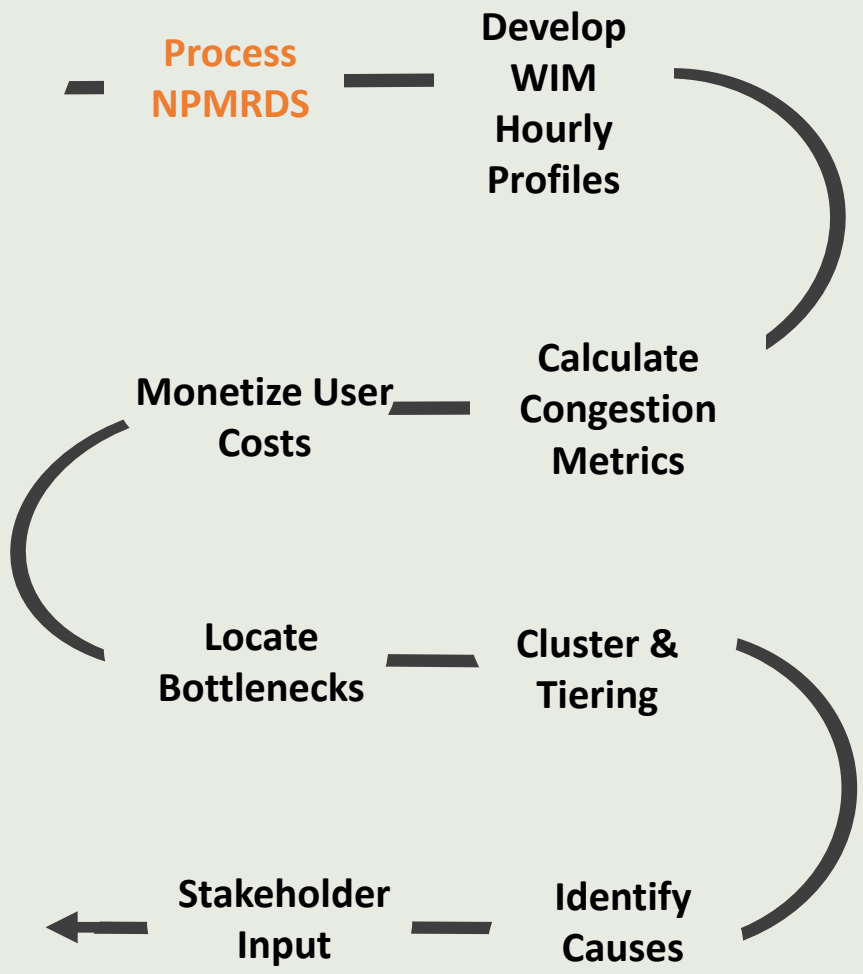


Approach we have implemented around North America for states, corridors, and cities



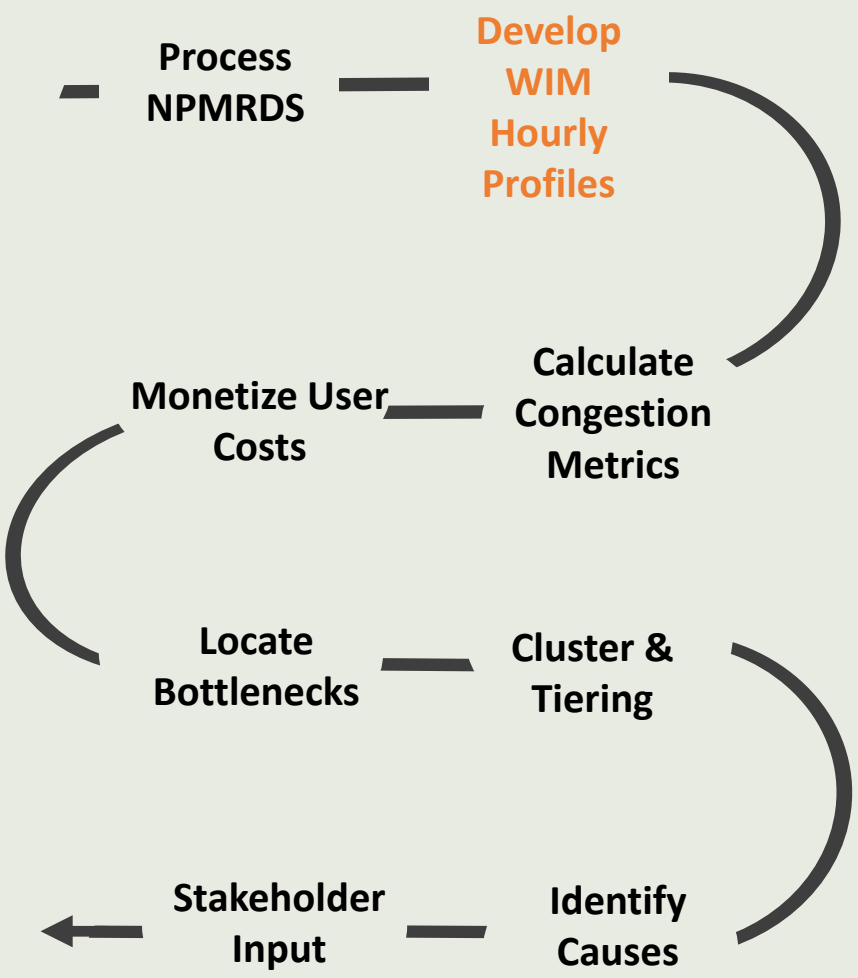
Bottlenecks need to be defined from the perspective of system users. What is the $ cost to trucking companies and shippers?

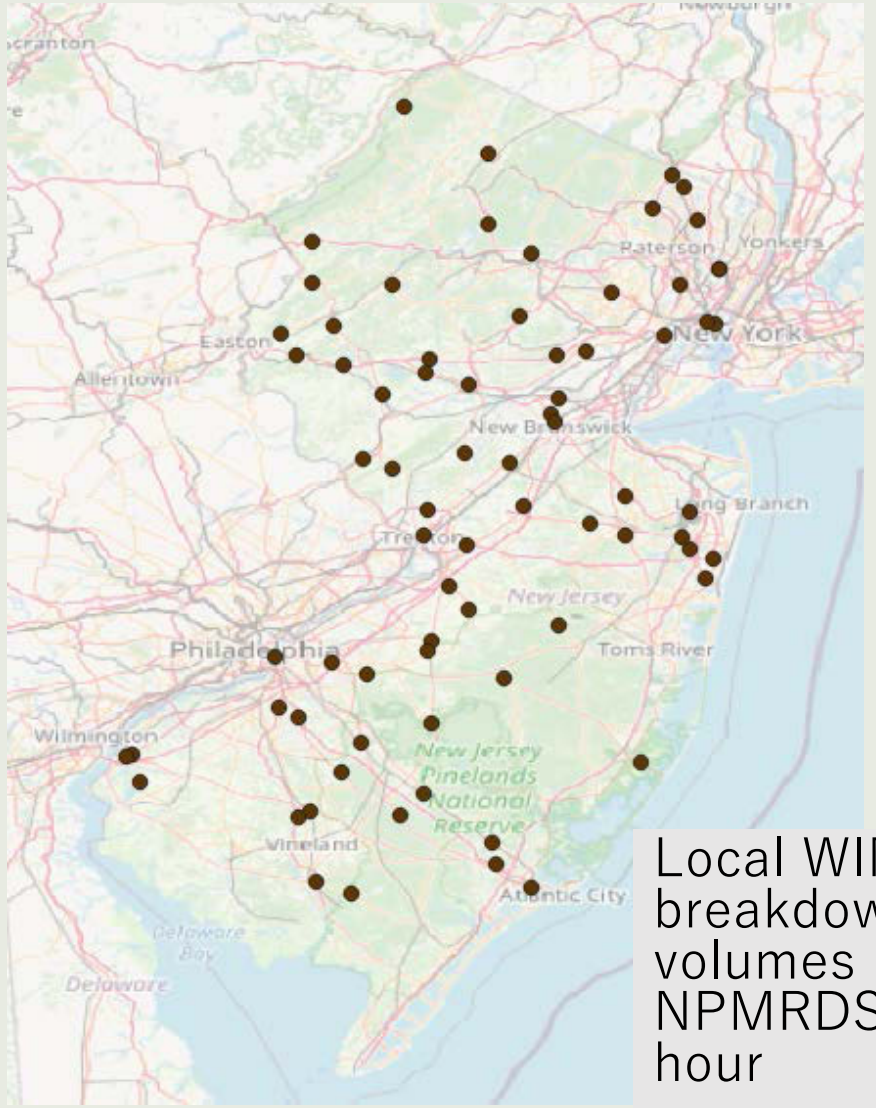
Truck Bottleneck Analysis



- Process NPMRDS travel time data
  - 144M records in New Jersey in 2021
  - 15 minute aggregation
- Calculate daily and hourly values for
  - 10th percentile travel time (free flow)
  - Average travel time
  - 95th percentile travel time
- Exclude weekends and holidays

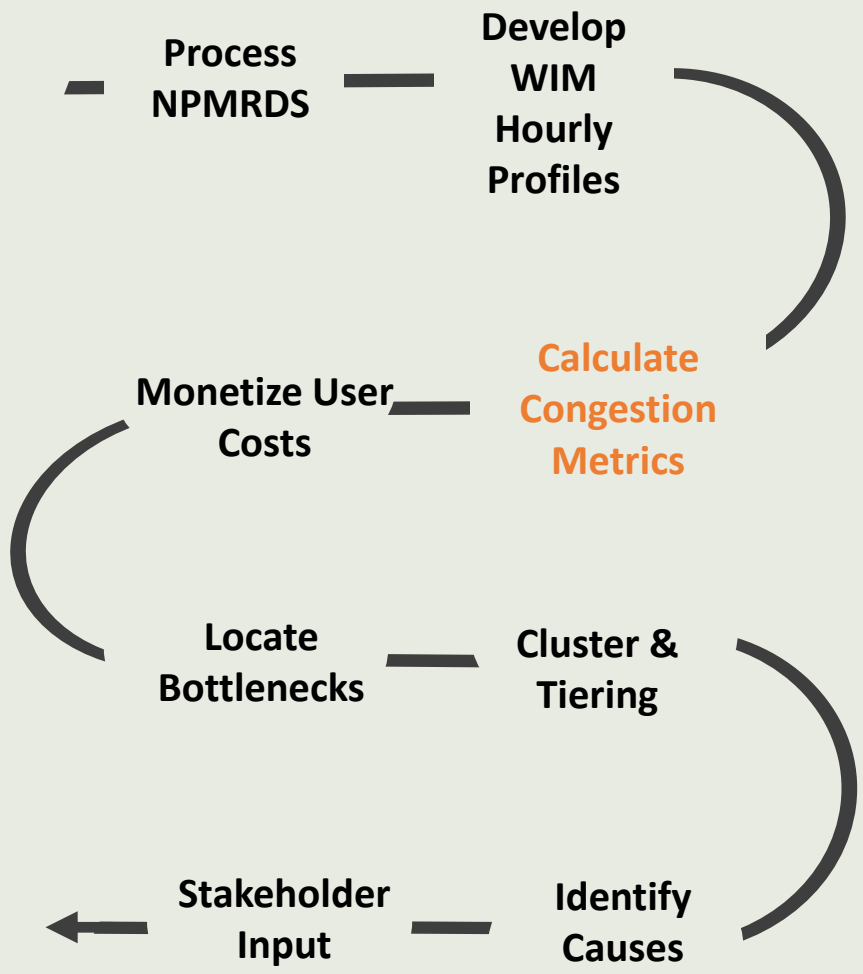
Truck Bottleneck Analysis





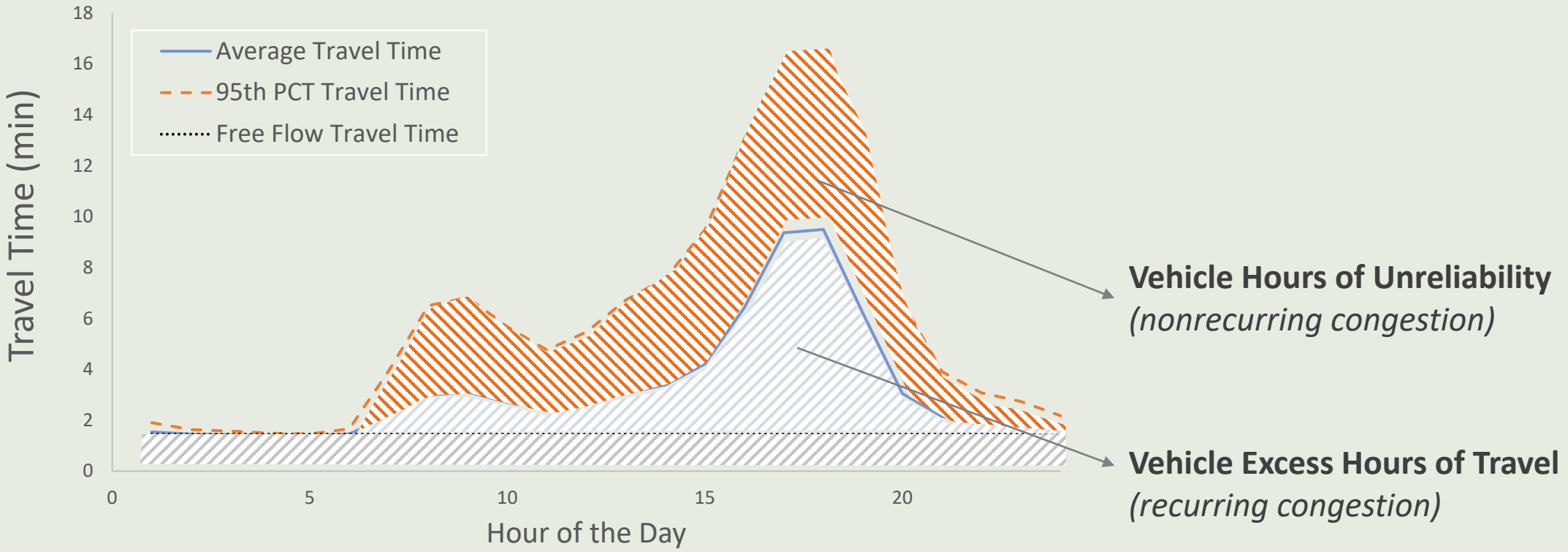
Local WIM data to breakdown daily volumes in NPMRDS to the hour

Truck Bottleneck Analysis

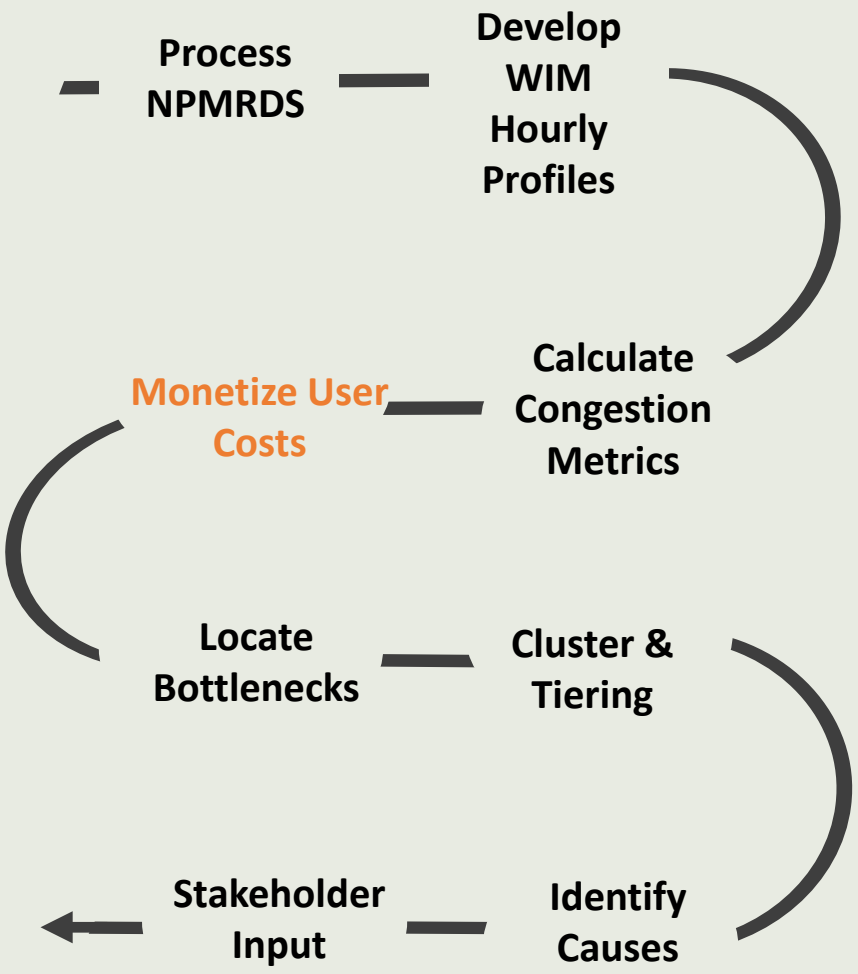


- NCHRP 925 congestion metrics
  - Vehicle Excess Hours of Travel (recurring congestion)
  - Vehicle Hours of Unreliability (non-recurring congestion)

Truck Bottleneck Analysis



Truck Bottleneck Analysis



Values from NCHRP 925 to derive user costs of recurring and non-recurring congestion

Derived from survey of shippers and industry supply chain managers and analytical modeling

Recurring congestion (Delay)

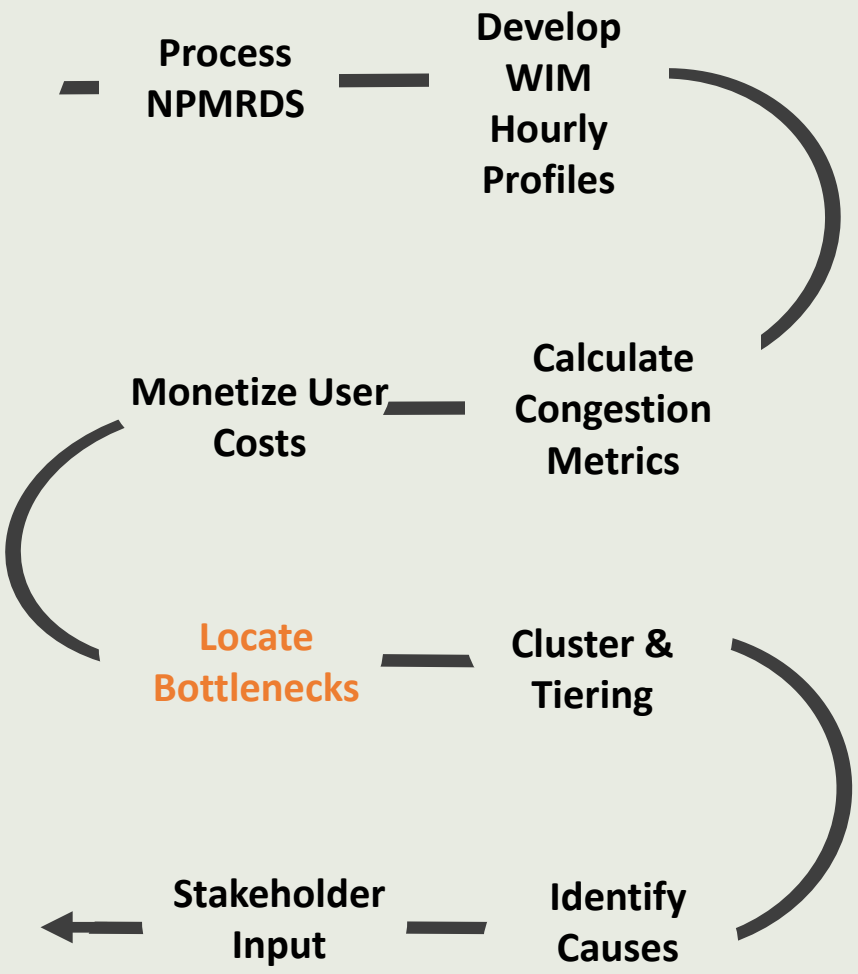
- $66/hr

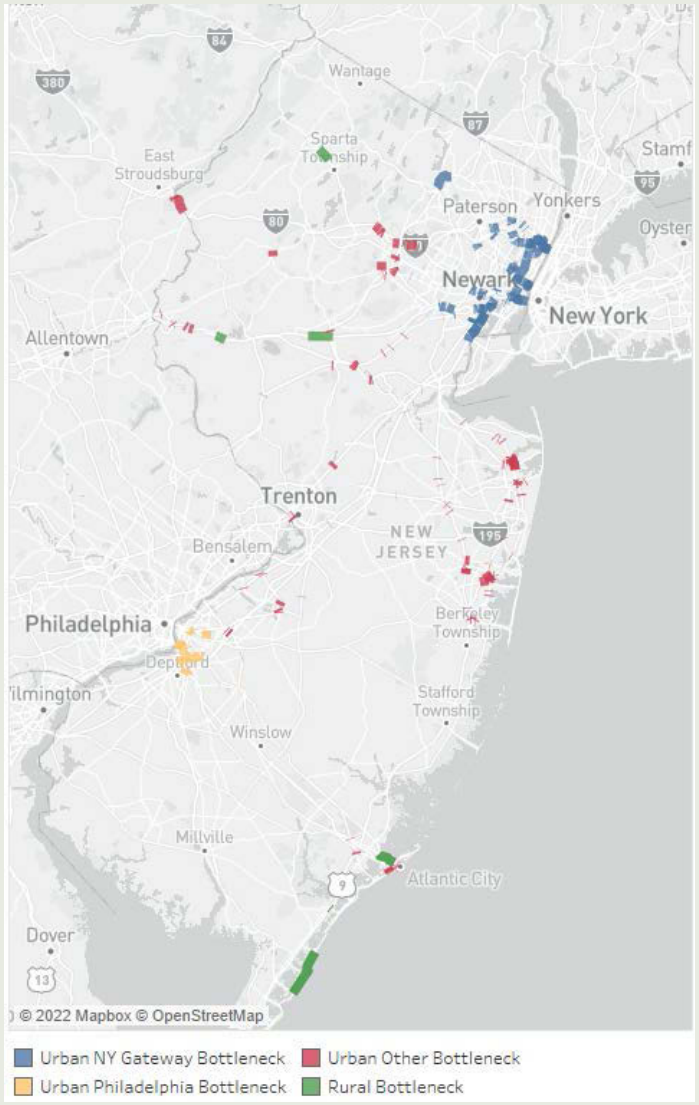
Non-recurring congestion (Unreliability)

- $160/hr

NCHRP Report 925

Truck Bottleneck Analysis





Highest 5% user costs/mile in:

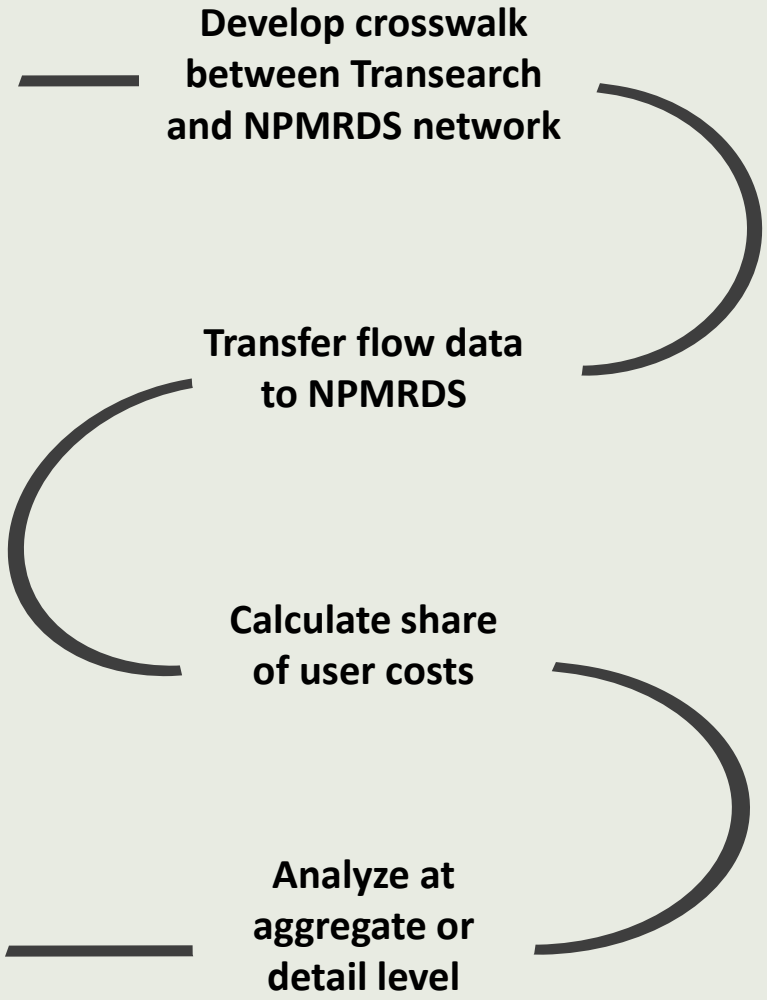
- **Urban NY-Gateway**
- **Urban Philadelphia**
- **Urban Other**
- **Rural**

Bottleneck Segments

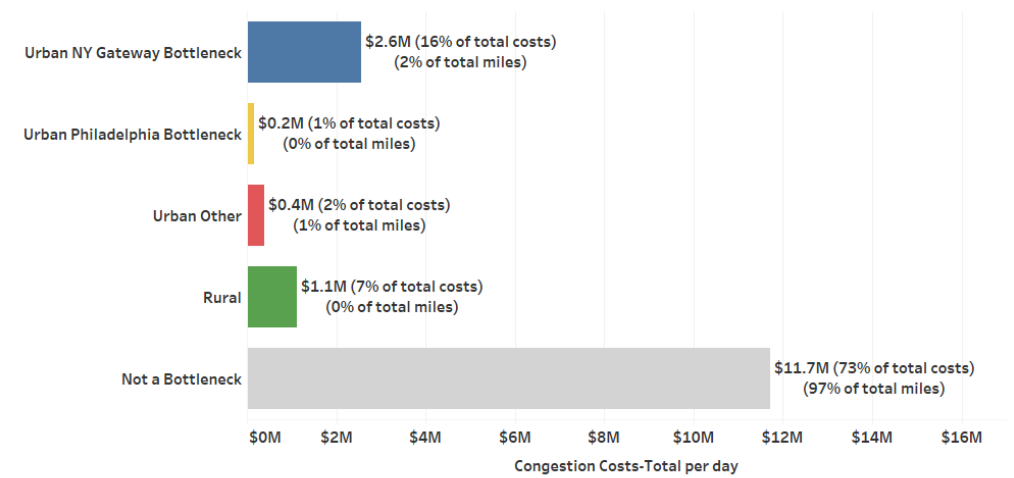
Bottleneck Type	Length	# TMCs
Urban NY-Gateway	74	223
Urban Philadelphia	11	47
Urban Other	23	191
Rural	6	23
Total	***115***	***484***

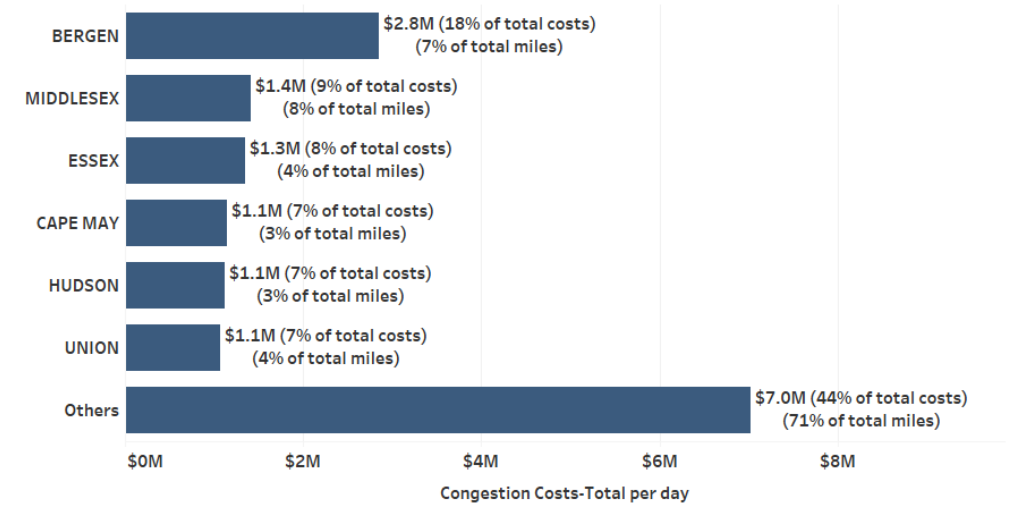
Developing Commodity Bottlenecks analysis

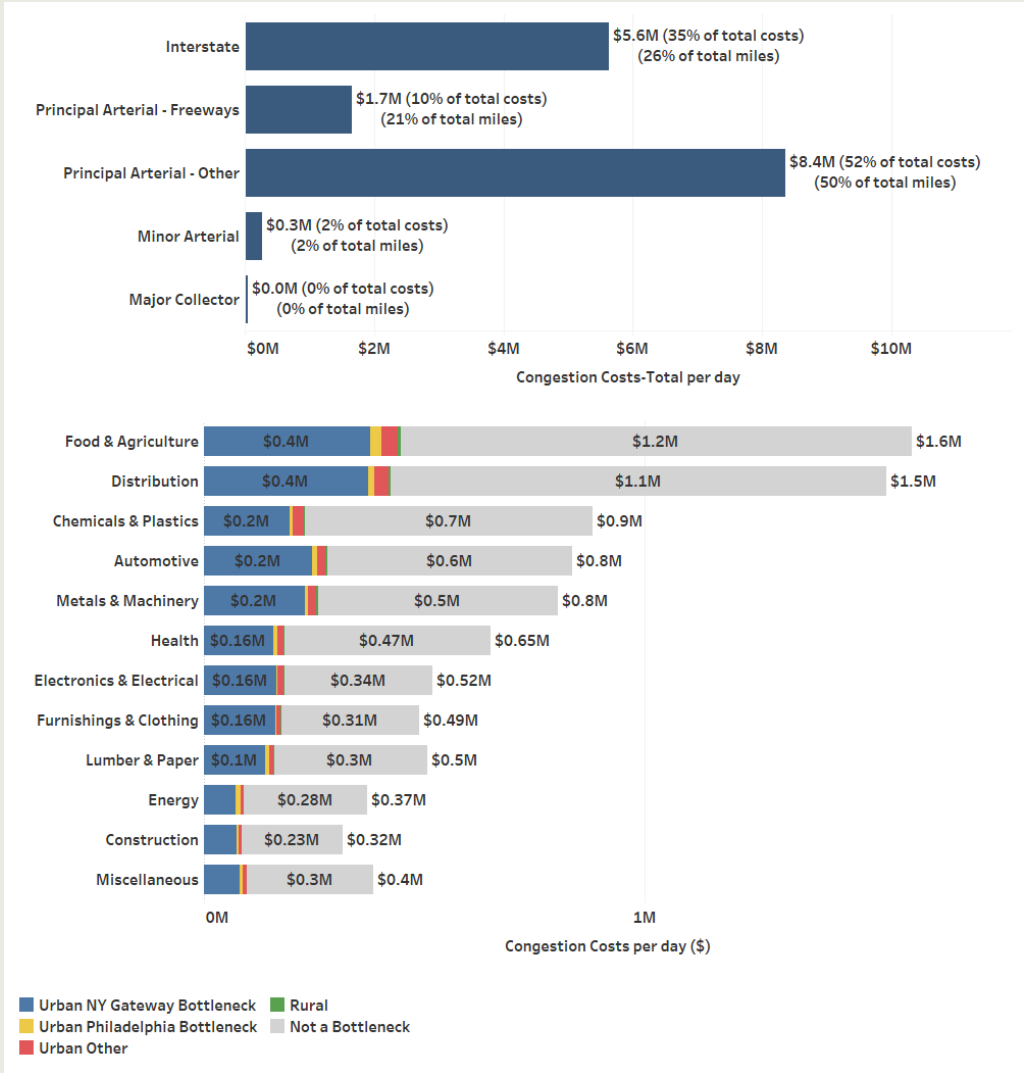
- Conflate Transearch commodity flow data with NPMRDS probe-based congestion data
- Develop spatial crosswalk between two networks using GIS
  - Maintain directionality detail (NB/SB and EB/WB)
- Calculate contribution of individual commodities to freight traffic at each NPMRDS segment
- Calculate share of user congestion costs
- Ability to analyze overall network or top commodity bottlenecks



Daily Congestion Costs







Contact Us

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Freight & Complete Streets

Kristen Scudder
Office of Freight & Aviation Planning

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April 20, 2022
Delaware Valley Goods Movement Task Force

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Failure to incorporate freight considerations not only impacts the performance of the network for trucks but can have substantial safety and quality of life impacts for other users.


WALK BIKE
PEDESTRIAN AND BICYCLE PLAN
PHILADELPHIA
GET HEALTHY PHILLY
Healthy, Active & Smoke-Free
PCPC
PHILADELPHIA CITY PLANNING COMMISSION • APRIL 2012
PHILADELPHIA
COMPLETE STREETS DESIGN HANDBOOK
MAYOR'S OFFICE OF TRANSPORTATION AND UTILITIES
PHILADELPHIA DELIVERY
Handbook
dvrpc
APRIL 2017

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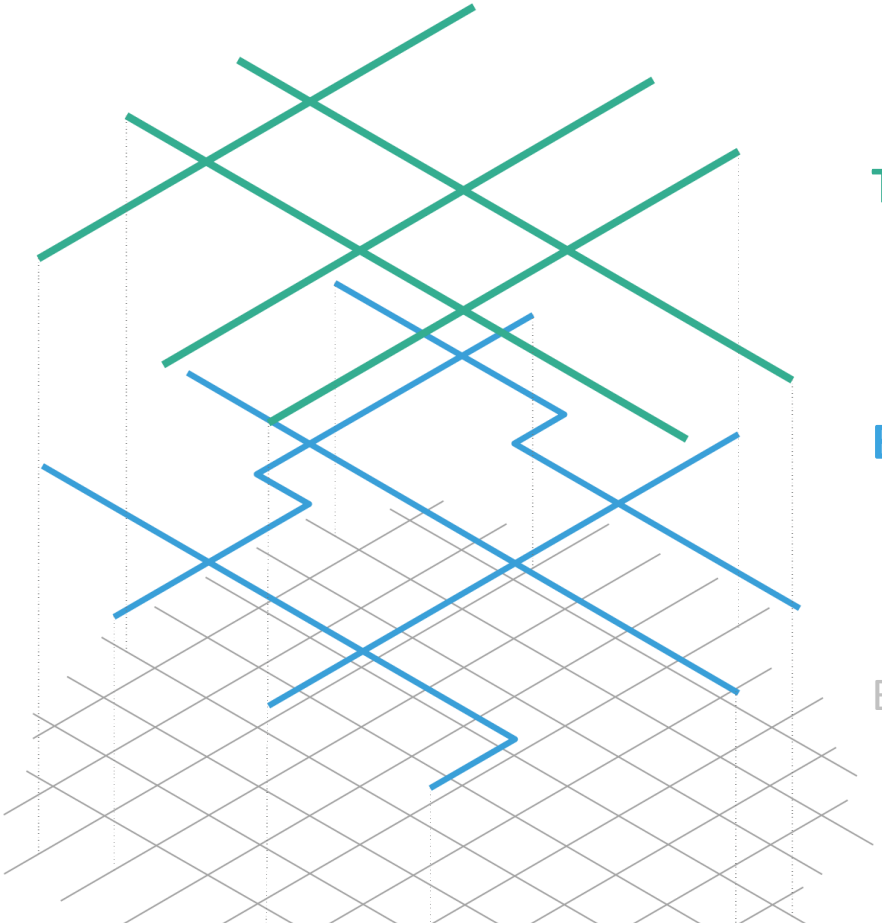
Where do we start?



Transit network

Bike network

Base network

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Defining a Truck Network

01

Preliminary Screening

Understand key generators and connectivity.
Preliminary network matched to existing classification system.

02

Data Evaluation

Quantify route segment activity.
Confirm route segment role/use.

03

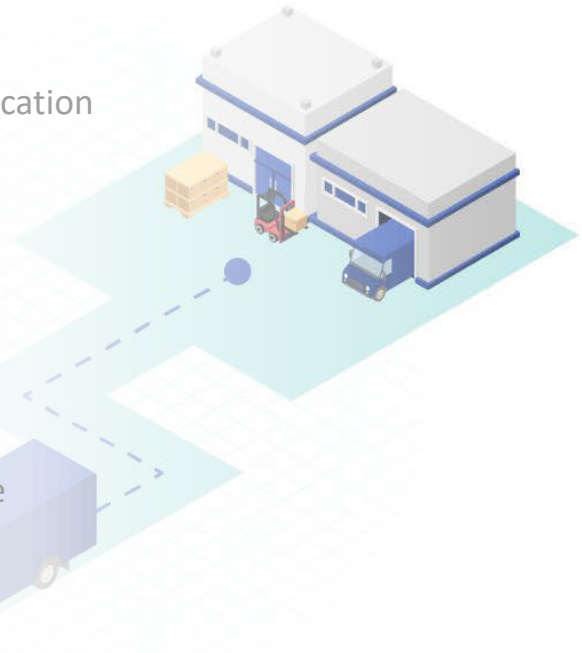
Review & Adoption

Educate the public and promote buy-in on route designation.
Formally adopt the truck route components.

04

Application

Communicate new route designation to key stakeholders.
Incorporate improvements/considerations for truck freight.



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Truck Route Network Components

Truck Route Class	Freight Class Function
Regional Freight Corridors	Long Distance Trips
Primary Truck Route	Through Trips
Secondary Truck Route	To/From Trips
Last Mile Connector	Industrial Trips

+ Restricted Facilities

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Leveraging the CS Handbook Process

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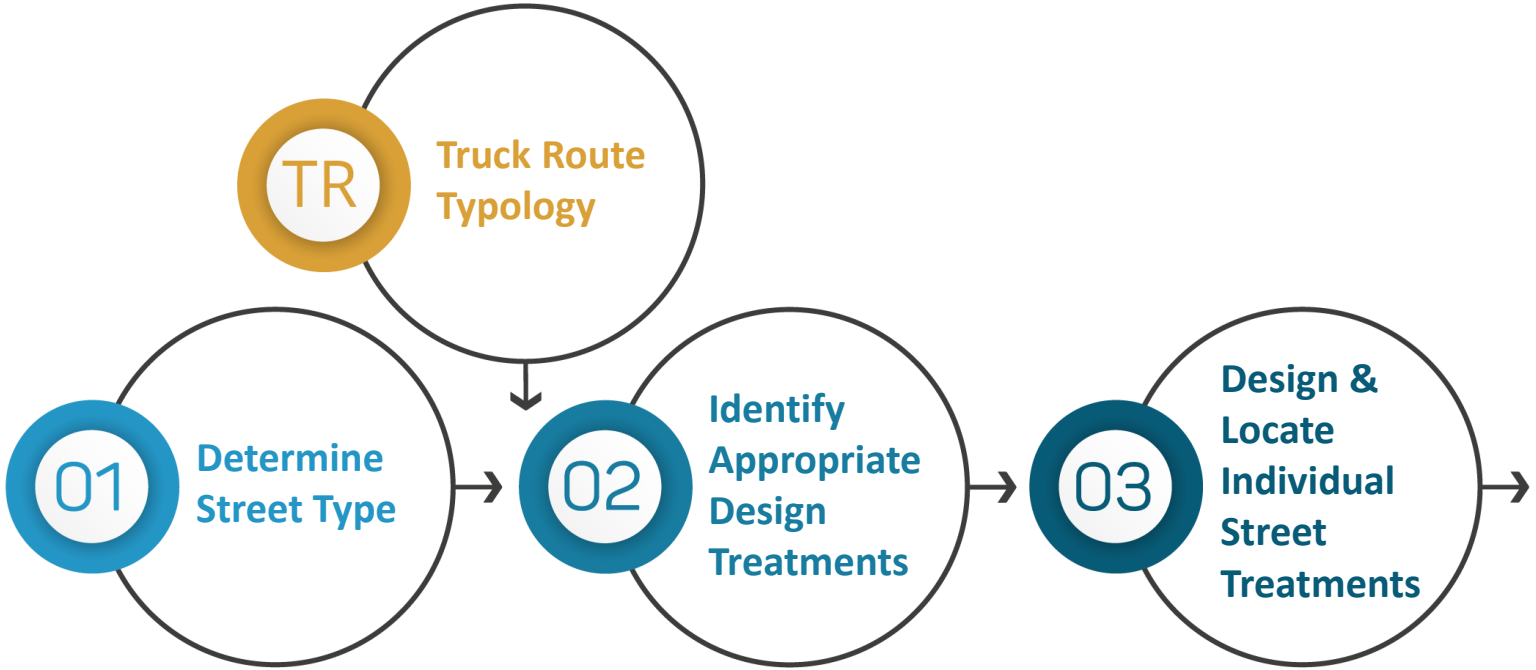
Leveraging the CS Handbook Process



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Complete Streets Integration

Truck Route Class	Complete Streets Sub-class
Limited Access Highway	N/A
Primary Truck Route	Auto-Oriented Commercial/Industrial
	Urban Arterial
	Walkable Commercial Corridor
	Civic/ Ceremonial Street
Secondary Truck Route	Auto-Oriented Commercial/Industrial
	Urban Arterial
	Walkable Commercial Corridor
	High-Volume Pedestrian
	City Neighborhood Street
Last Mile Connector	Auto-Oriented Commercial/Industrial
	Urban Arterial

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Treatment Components

Details of the recommendations made in the matrix are provided below. These are formatted by component and treatment according to the following:

Enhanced/Updated Component Title

Enhanced/Updated Treatment Title

The Philadelphia Complete Streets Design Handbook component number will be specified to provide reference to existing details. Updated treatments will include:

- Updated/additional considerations
- Specific design components (if appropriate)
- Additional resources

New Component Title

New Treatment Title

New treatments will include details as included in the Philadelphia Complete Streets Design Handbook:

- Application
- Considerations
- Design
- Roles & Responsibilities
- Examples
- Resources

4.2 Building and Furnishing

4.4.2 Furnishing Zone Width

Updated/Additional Considerations

- Elements in the furnishing zone should allow sufficient clearance for mirrors on trucks and buses that are in the extreme right lane of a facility, especially if there is not a buffer between the travel lane and the curb. Examples of roadside elements that should be considered include but are not limited to signs and sign supports, trees, landscaping items, and power poles.
- Where commercial deliveries are expected or loading zones exist, a reasonable distance should be maintained between the parked commercial vehicle and elements of the furnishing zone. This horizontal clearance zone should be maintained along an expected pedestrian delivery path to allow typical dollies, hand carts, pallet jacks, and other equipment that an operator may use to move goods, to pass unimpeded.
- Roadway obstructions must allow clearance for the expected Control Vehicle to operate.

Specific Design Components

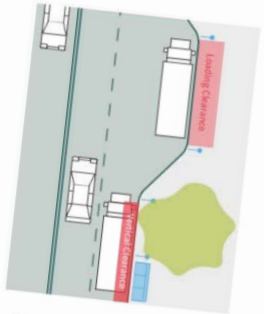
- Guidance on vertical clearance is found summarized in AASHTO's Geometric Design of Highways and Streets Table C.4.
- Guidance on horizontal clearance is found summarized in AASHTO's Geometric Design of Highways and Streets Table C.3.

Additional Resources

AASHTO Geometric Design of Highways and Streets

FHWA Clear Zone and Horizontal Clearance Guidance

NYSERDA Complete Streets Considerations for Freight and Emergency Vehicles



Vertical clearance should be considered where there is no buffer between the travel lane and the curb, and horizontal clearance should be considered at expected loading zones.

Thank You

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Office of Freight & Aviation
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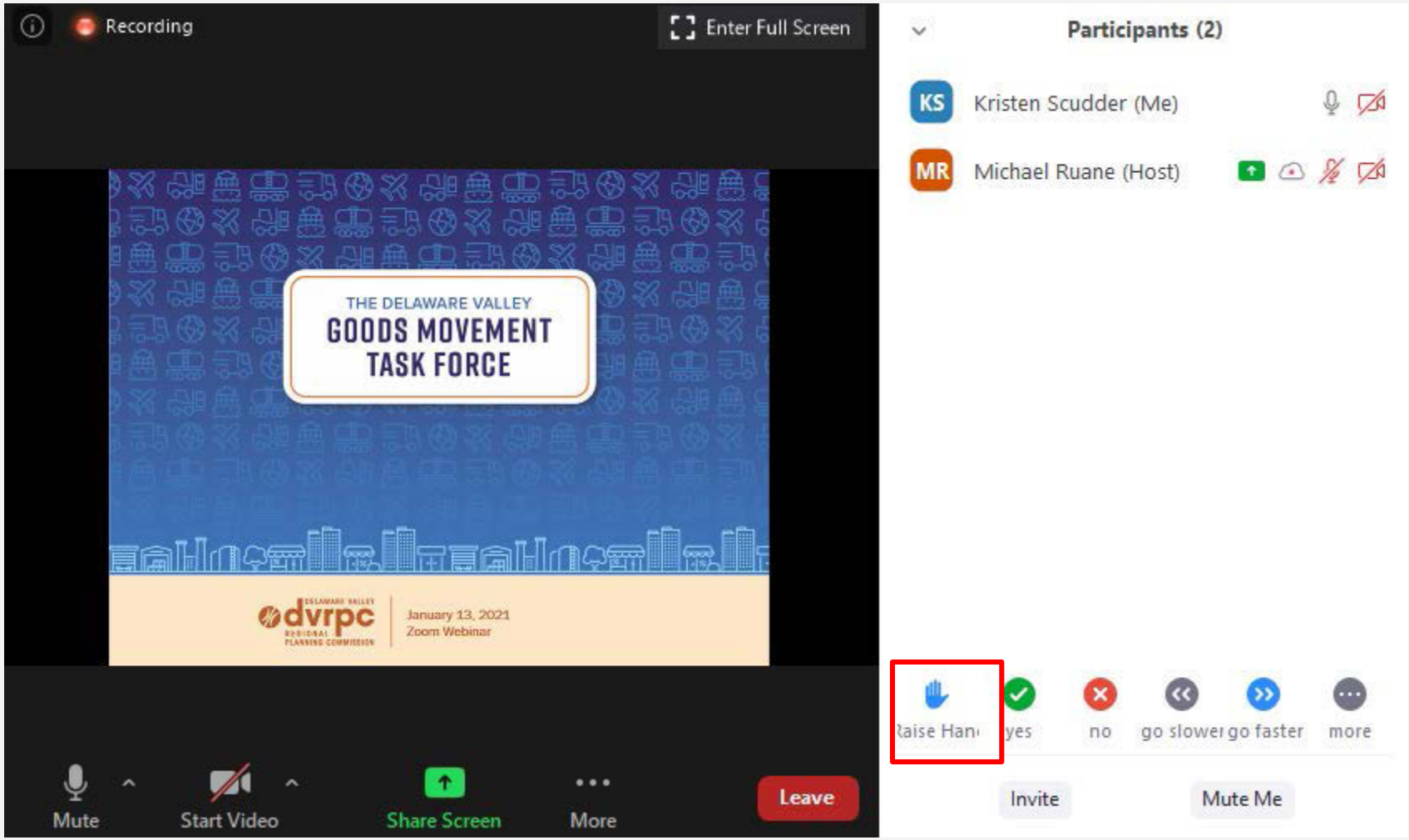
Two-Minute Reports



2022 DVGMTF Meeting Dates

- Wednesday, July 20
- Wednesday, October 19