



HUDSON COUNTY TRUCK ROUTES ASSESSMENT

FINAL REPORT



Submitted to:



Submitted July 21, 2023 by:



in association with:
ARUP
FHI Studio (DBE/ESBE)
Cheng Solutions, LLC



Disclaimer

This report has been prepared as part of the North Jersey Transportation Planning Authority (NJTPA) Subregional Studies Program with financing by the Federal Transit Administration and the Federal Highway Administration of the U.S. Department of Transportation. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The NJTPA is solely responsible for its contents.

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I. Introduction

Trucking is an essential industry in Hudson County and necessary for our daily lives. Nearly any good that is purchased was transported on a truck at some point in the process of bringing it from the producer to the consumer. Trucks bring products from the port to distribution facilities, then from there to a retail store, or directly to your home. Refrigerated trucks bring food to the supermarket where you shop or restaurant where you dine out. Trucks deliver supplies to your office or school. Without trucks, our way of life would not be possible.

Hudson County actively contributes to nearly every stage of the production and delivery of goods: manufacturing, storage, distribution, and delivery. Although this contributes greatly to the local economy, this large amount of freight traveling through Hudson County affects our roads, people, and environment.

Hudson County is located at the crossroads of the northeastern United States, and is a critical origin and destination for transportation, including the movement of goods. Hudson County's proximity to ports and markets makes it a center for the movement of freight. The county is host to significant infrastructure, including ports, highways, bridges, tunnels, and railroad lines. Although some facilities are served by rail lines, much of the freight is moved by trucks through Hudson County and beyond into the North Jersey region to reach its final destination. Because of this, trucks have an outsized function within the county's transportation network. An estimated 92.4 percent of domestic freight tonnage traveling to, from, or within Hudson County was transported by truck in 2020, according to the North Jersey Transportation Planning Authority (NJTPA) Freight Forecast Regional Profiles. A similar proportion is forecast for 2050. The County's location and infrastructure attracts private industries which move freight and are dependent on this infrastructure, including intermodal facilities, warehouses and distribution centers, and trucking terminals. These businesses serve the county and region, drive the county's economy, and provide jobs.

While the county has long been a center for numerous vibrant commercial districts with extensive retail and dining establishments, the rise of e-commerce and online shopping has increased our reliance on deliveries and shifted needs to new times, speed, and geographic areas. According to the NJTPA Hudson County Subregional Freight Profile, it is estimated that in 2019, about 14.7 million e-commerce shipments containing 22.5 million items were delivered to consumers in Hudson County. The coronavirus pandemic has further exposed our reliance on the global supply chain and the effect that disruptions may have. As many traditional customers and suppliers shut down, new needs emerged, as people struggled to obtain necessary items delivered safely and directly to their doorsteps. This crisis highlighted the importance of understanding and management of the movement of essential goods.

The needs of the trucking industry in Hudson County and the impacts to our community have not been studied comprehensively before. The Hudson County Truck Routes Assessment, funded through the NJTPA's Subregional Studies Program, provides this analysis so the County

can effectively seek additional funding opportunities and direct investment to infrastructure to increase the efficiency of trucking, improve safety, maintain our roadways, bridges, and other transportation infrastructure in a state of good repair, and create policy changes to reduce negative impacts to our communities. Resources and funding will be most efficiently utilized as part of a coordinated, long term, strategic plan. A combination of policies, regulation, infrastructure improvements, and enforcement may further improve efficiencies and reduce impacts.

Truck Routes

Due to design and dimensions, lack of connectivity, and surrounding land uses, not all roads are suitable for trucks. Large trucks in New Jersey are required to travel on roads designated as part of the New Jersey Large Truck Network, which has two components: the National Network, which is state or interstate highways with high capacities and limited access and the Access Network, which is made up of smaller U.S. and State highways as well as some county roads. While some roads in Hudson County may serve as connecting corridors for through traffic, they also have neighborhood scale residential and commercial communities which may be affected by heavy truck traffic. Through this study, data analysis has compared designated truck routes with the routes that trucks are using to determine where changes may be needed. Neighborhood scale businesses are clustered in local business districts located on county and municipal roadways. Curb space is limited and has many demands, including on-street parking, passenger pickups and drop offs, bus stops, and deliveries of goods and supplies to local businesses. Narrow roadways and double-parked vehicles can block travel lanes which contributes to congestion and reduces safety.

Impacts

While the movement and delivery of goods by trucks is essential to the region's economy, business, and personal needs, it also generates undesirable impacts. These impacts are felt most greatly by the communities in closest proximity to this activity. Further, many of these communities in closest proximity to industrial and freight activity have been historically underrepresented and are vulnerable, with high levels of minority populations, poverty, people with disabilities, and poor health. Addressing the reduction of transportation emissions will have a consequential impact at every level from local to global and help to create equity in transportation.

Outreach

To understand the needs of trucking industry professionals and how trucking affects our residents and business owners, talking to them to hear their experiences firsthand is critical. The study includes outreach through multiple formats, with a particular emphasis on private business and underrepresented communities. The connections made through the study will continue, and new connections will be made, to work together towards improvements which benefit everyone while reducing adverse impacts.

New Technologies

It is essential for policy makers and businesses to adapt. New technologies have the potential to increase efficiency, improve safety, and reduce impacts, and further, may offer the potential to shift the movement of freight away from trucks.

Other Projects

Recognizing the needs of freight trucking, the Hudson County community is undertaking local planning and infrastructure development efforts. In particular, Bayonne, which includes major facilities and infrastructure such as the Bayonne Bridge and Port Jersey, has received federal grants to expand, enhance, and create new freight routes, with additional freight and trucking industry needs currently being studied. A truck appointment system introduced to Port Jersey in 2017 has decreased wait times and traffic and reduced idling. In 2018, an improvement project was completed for the New Jersey Turnpike Interchange 14A in Bayonne and Jersey City which serves truck traffic to and from Port Jersey, with wider lanes, reengineered roads, and redesigned ramps adding capacity and improving circulation. In Secaucus, a major project is currently underway for the reconstruction of Meadowlands Parkway, funded by a 2018 NJDOT Local Freight Impact Fund (LFIF) grant of \$2,030,000. Additionally, planning and design has just been finalized for the reconstruction of Secaucus Road utilizing a 2019 LFIF grant of \$500,000. Hudson County applied for and received funding from the NJDOT's FY 2018 and FY 2019 LFIF Program for a total of \$3,900,000 for improvements to County Road in Jersey City and Secaucus, a segment between the designated National Freight Network Route Interstate 95 (New Jersey Turnpike) and the New Jersey Large Truck Network's Access Network US Route 1&9 (Tonelle Avenue) lined with several warehouses and distribution centers, including reconstruction of the pavement box, updated guide rails, rub rails, and end treatments, drainage improvements, traffic and speed calming measures such as rumble strips, pedestrian safety improvements, and a new traffic signal.

The County applied for and received a 2020 LFIF grant of \$1,750,000 for improvements to the Crosspike Drive/New Jersey Route 7 intersection. These improvements include a new traffic signal and access route from the 172 Acre Koppers Coke Redevelopment Site, where several large warehouses and trucking facilities are being built, to New Jersey Route 7, which is designated as part of the New Jersey Large Truck Network's Access Network. To address concerns from the community, Jersey City is redesigning St. Paul's Avenue, which sees truck

traffic, to improve safety. Hoboken has examined and recently adopted new local truck routes. This study will take a step further and conduct a comprehensive examination to support and go beyond these local efforts.

Goals

Hudson County sought to achieve several goals through the Hudson County Truck Routes Assessment. They were to:

- Develop a comprehensive understanding of freight trucking in Hudson County
- Direct investment towards creating a safe and efficient roadway network to support our economy
- Assess the effects of trucking on the community, emphasizing environmental justice populations, and develop policy recommendations to reduce negative impacts
- Identify best practices for roadway design and explore new technologies for truck transportation
- Determine and prioritize roadway needs on all County freight roads and coordinate repaving schedules and other upgrades and repairs through a comprehensive long-term plan
- Assess roadway needs and develop recommendations in coordination with the municipalities to effectively manage roadway space and deliveries
- Foster dialogue between freight industry professionals, local government decision makers, and community members to support an inclusive collaborative process for truck transportation planning in Hudson County

II. Stakeholder and Public Outreach

The goal of the Hudson County Truck Routes Assessment Study (Study) was to develop policy, regulatory and infrastructure recommendations related to County freight trucking industry and on-street loading/deliveries strategies. To accomplish this goal, the study team engaged key stakeholders and the public to identify best practices and challenges faced by the trucking industry and to understand the effects and impacts of the trucking industry on residents and businesses. The overall purpose of this outreach was to create a dialogue inclusive of different perspectives and insights to help inform decision making throughout the Study process.

Public Engagement Plan

The purpose of the Public Engagement Plan (PEP) was to serve as a guide for the public outreach goals for the Hudson County Truck Routes Assessment Study. The PEP established outreach strategies and methods and provided a reference throughout the Study process for the overall approach. Public outreach is a required task as specified by the NJTPA, and Hudson County Division of Planning views public outreach as an essential part of the Study process, with an intention to go above and beyond the minimum requirements.

Environmental Justice Outreach

A key PEP component was ensuring effective Environmental Justice (EJ) outreach, defined by the Federal Highway Administration as “identifying and addressing disproportionately high and adverse effects of the agency’s programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens”. To achieve this goal, the Study team reached out to targeted EJ and faith-based organizations to inform them about the Study and opportunities for engagement.

Limited English Proficiency Outreach

According to 2019 American Community Survey data from the United States Census Bureau, it is estimated that 42 percent of the total population of Hudson County is foreign born, and 59 percent of the total population over 5 years old in Hudson County speaks a language other than English. Due to this composition of Hudson County’s residents, it was essential that the team provide information and materials in languages other than English. To this end, a bilingual English/Spanish fact sheet was developed and distributed via the stakeholder database.

Public Outreach Process

The study outreach process used the following components and elements:

- Branding
- Technical Advisory Committee
- Freight Forums
- Public Meetings
- Study Website
- Municipal Survey
- Truck Industry Survey
- Social Media
- Email Messaging
- Study Newsletter
- Collateral Materials

Branding

To provide a clear visual appearance and messaging that the public could easily associate with the Study, Hudson County Planning created branding guidelines to be used on all outreach materials and study documents. The graphics included logo images of various colors, a color palette and color usage instructions, font use instructions, and font sizing and spacing instructions. The branding guidelines were made available to the Study team and were applied to all materials.

Technical Advisory Committee

A Technical Advisory Committee (TAC) was developed with Hudson County Division of Planning identifying prospective TAC members, scheduling, and hosting meetings on Zoom. TAC membership included a mix of local, state, and regional stakeholders as well as community and advocacy groups. TAC members included representatives of the NJTPA, Hudson County, Hudson TMA, the Port Authority of NY and NJ, NJDOT, NJ TRANSIT, the Turnpike Authority, NYMTC, NYC Planning, RPA, the Cities of Hoboken and Jersey City, and the towns of Secaucus and North Bergen.

The TAC served as an important resource, reviewing work products, and helping guide the Study. TAC members used their expertise to provide insights for discussion and assisted the outreach effort by identifying issues, information resources, stakeholders, and potential lines of communication. The TAC also provided input on topics concerning the study, which will be used by Hudson County when making final project-related decisions.

Three virtual TAC meetings were held using Zoom, with Hudson County Division of Planning and the consultant team facilitating discussion, polling participants, compiling and maintaining discussion summaries. These meetings took place as follows:

- August 17, 2022: overview of purpose and need, work plan, TAC roles and responsibilities, public engagement plan, and data assessment and initial findings.
- February 9, 2023: overview of outreach conducted, and feedback received, discussion of data analysis, findings, and initial recommendations.
- April 27, 2023: overview of additional feedback received, discussion and review of updated area recommendations, and draft report overview

Freight Forums

The Study team conducted a series of virtual Freight Forums to engage both public and private freight industry stakeholders on freight and trucking-related issues, needs, and perspectives. Hudson County Division of Planning and the consultant team identified and invited interested participants, facilitated discussions, polled participants, compiled and maintained discussion summaries. Three Round Table discussions were held via Zoom:

- September 21, 2022: policy and economy focused stakeholders
- September 27, 2022: trucking industry stakeholders focused on local deliveries
- September 27, 2022: industry stakeholders focused on freight warehousing and distribution

Virtual Public Meetings

To provide a direct experience between members of the Study team and the public, and to allow communities to engage without in-person contact, the project team hosted two virtual meetings via Zoom, as noted below. A meeting notice was circulated via email, various social media accounts, Freight Forum participants, and TAC members.

Each meeting consisted of a PowerPoint presentation by using interactive preference polling via the Zoom function, followed by a facilitated discussion. Each presentation included brief Zoom usage instructions, Study team introductions, background information, a summary of progress, an overview of study findings, and a discussion of upcoming milestones and next steps. During the presentation portion of the meeting, attendees were muted to prevent background noise and

to manage the discussion. During the discussion portion of the meeting, attendees were encouraged to comment via the Zoom chat function and were allowed to unmute themselves to provide verbal feedback. All meetings were recorded, and the consultant team facilitated discussion, compiled and maintained discussion summaries.

Meeting dates and target audience was as follows:

- November 3, 2022: provided an overview of the study purpose, goals, workplan, and initial data findings. Solicited open discussion and feedback on local experience with truck traffic.
- March 8, 2023: provided an overview of previous public, TAC and Freight Forum feedback, data analysis, place types, and solicited feedback on draft recommendations for inclusion into report.

A summary of public feedback is included at the end of this section.

Study Website

The Hudson County Division of Planning created a branded website (<https://www.hcnj.us/trucking-study>) that served as an informational platform sharing project details, documents and resources, news articles, project events, social media access, and public comment page.



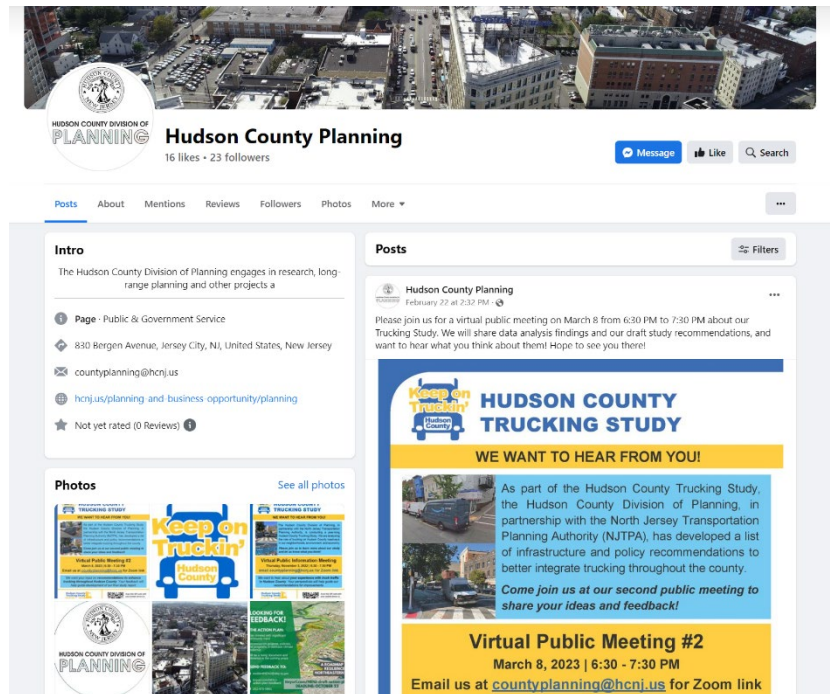
Local Business Survey

The Hudson County Division of Planning conducted in-person outreach to local businesses in several districts across the county to ask for their perspectives on curbside (on-street) loading and deliveries. Division of Planning staff went to Bergenline Avenue in West New York on

September 2nd, 2022, Frank. E Rodgers Boulevard in Harrison and Kearny Avenue in Kearny on September 8th, and India Square in Jersey City on September 9th. Planning staff went door to door to local businesses, identified themselves, and asked if they could speak with managers about their experience with truck deliveries. While some businesses were busy or not interested, a total of 16 were interviewed. The interviews are summarized later in this section.

Social Media

The Study utilized social media for a targeted, effective method to reach members of the public through virtual content. To maximize reach and utilize different features, multiple social media platforms were used. The County used its [Facebook](#), [Twitter](#), and [Instagram](#) pages to promote upcoming events and opportunities for public input.



Email Messaging

Email messaging was used as a simple and direct method to send information. County Planning used the general email address countyplanning@hcnj.us for email messaging and informing people about Study updates and upcoming events. Throughout the course of the study, email addresses of interested stakeholders and members of the public were collected through several methods:

- Participants at meetings offered their email addresses
- Members of the public had the opportunity to opt-in to receive newsletters via the website
- Direct email messaging to stakeholders, as mentioned above

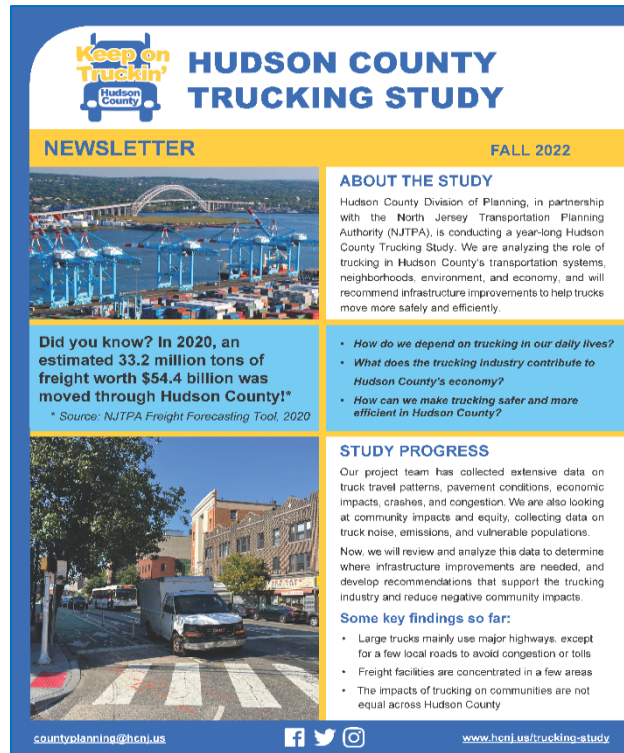
For those who were unable to attend, County Planning sent out emails to all invited attendees informing them of the various ways to provide input on the Study, including links to the project website and, for the appropriate stakeholders, links to the municipal and trucking industry surveys.

Study Newsletters

Two newsletters were developed and distributed through email to members of the public who signed up, as well as to the County Commissioners, during the course of the Study:

- Fall 2022
- Spring 2023

The first newsletter included an overview of the Study, key findings, stakeholder input received, and an invitation and link to the first public meeting which took place on November 3, 2022. The second newsletter summarized outreach conducted, feedback received, and recommendations. Both newsletters contained a QR code/link to the project website and links to social media and the County email address.



Collateral Materials

The project team created several outreach materials which helped introduce the Study, all following the branding guidelines. All materials were available digitally in a format that can be easily distributed and posted to different platforms, such as Adobe PDF or a photo JPG or PNG format.

The materials, included in **Appendix A**, are:

- Bilingual (English and Spanish) Study factsheet with a concise, easy to understand writeup of the Study purpose, encouraging public input, including contact information and QR code to the study website.
- Study newsletter(s) providing study information, input received, and opportunities for input. QR codes to the website and direct Zoom links to upcoming meetings were provided.
- Event flyers to advertise public meetings, using concise, easy to follow information announcing the purpose of the meeting, how to participate, and including QR code linking to the project website and direct Zoom links to public meetings
- Various PowerPoint presentations developed for stakeholder and public meetings, which included real-time preference polling interactive activities.



Outreach Findings

The Hudson County Truck Routes Assessment Study team found common feedback themes throughout all engagement types, from Freight Forum and TAC meetings to meetings with the Hudson County public. This report provides a high-level review of these common topics and drills down into specific findings for each outreach category. **Appendix A** includes presentations and detailed summaries of each engagement event for further reference.

Overarching Themes and Key Findings

A common thread throughout all stakeholder and public engagement events was the need to address truck traffic on local streets, and potential actions that could be taken to mitigate existing and projected congestion in a rapidly developing region. Additionally, enhanced enforcement of truck restrictions was of critical importance, stressing the need for municipal and agency coordination.

TAC Feedback

TAC members provided specific feedback on findings and recommendations throughout the study. Hudson County and the consultant team had numerous meetings with TAC members during the development of findings and recommendations for the study's nine focus areas.

Freight Forum Feedback

Freight Forum participants were concerned about making the area more attractive to businesses and stressed the need to prepare for future developments and upgrade existing infrastructure. Off-hour deliveries and improved warehouse worker access (including off-peak public transportation access, particularly buses) were mentioned as key elements in reducing peak hour traffic congestion. Enhanced automobile and truck traffic parking was also noted as being important, via more vehicular parking access and creation of more truck loading zone areas. Other issues discussed were the need for improvements to roadway infrastructure and geometry, and capacity concerns to address exponential growth in area population and development.

Public Feedback

A common thread throughout all public engagement events was the need to address truck traffic on local streets, particularly large delivery trucks in restricted areas. The number of deliveries from companies like Amazon, FedEx, UPS, and USPS has increased dramatically. The public generally thought that additional enforcement is needed to impose truck restrictions as well as blocked crosswalks, double-parking, bike lane blocking, and cutting through local streets instead of using highways. Additionally, there is a significant disconnect between "no truck" signage and actual trucks on the streets. Regulation and enforcement are critical.

Specific neighborhoods of concern that were noted include John F. Kennedy Boulevard East in Weehawken and along St. Paul's Avenue in Jersey City, with extensive feedback from the Journal Square Community Association.

Local Business Survey Feedback

A large majority of businesses did not have a loading zone nearby. Many did not know the procedure to request one. Several did not want one and were more concerned about customer parking. They already had some type of informal procedure worked out. However, this does not account for congestion and safety issues caused by trucks double parking and blocking the travel lane, though some were aware and concerned about these issues. Most businesses would need a large loading zone for a heavy truck. Nearly all the businesses stated they would not be interested in overnight deliveries, because neither they nor the delivery companies would work overnight.

For the few businesses that did already have a loading zone nearby, they did observe a lot of private vehicles parking in the loading zones, including when they were needed. Most

businesses were not part of a Business Improvement District or Chamber of Commerce, and interest in working further with government was mixed. Although most businesses owners of color stated that they did not have challenges, a few faced language barriers and general issues such as increasing rent.

Despite the challenges, businesses find ways to operate and receive their deliveries. Most have a level of acceptance with the way things operate. However, in certain situations, this may come at the expense of traffic and safety. A common theme was that private vehicles park within the loading zones that do exist. A combination of designated loading zones and enforcement may offer a potential benefit for some businesses, and others may not see the usefulness of them until they try it.

III. Data Collection

This section summarizes the data collection effort that was completed as part of The Hudson County Truck Routes Assessment Study. Data was collected to better understand the major truck origins and destinations throughout the county; the routes that trucks use when they travel, and the environmental and social impacts of trucks on the communities that they travel through. The Task 2B Data Collection Technical Memorandum is included as **Appendix B**.

Truck routes

Truck routes in Hudson County, shown in **Figure 1**, are defined by Section 16:32-1.2 of the New Jersey Administrative Code¹ that outlines provisions for designated travel routes for large trucks. Several key provisions are summarized below.

- The New Jersey Access Network consists of all state routes, all County 500-series routes and selected County 600-series and other routes.
- Trucks must complete all trips using the Network but may leave the Network in order to travel to and from local destinations.
- Trucks must avoid residential areas to the extent feasible.

The NJDOT divides truck routes into two categories: the National (Large Truck) Network, comprised primarily of the Interstate network and the New Jersey Turnpike, and the New Jersey (Large Truck) Access Network that consists of state routes and major county routes. Large trucks are prohibited from using all other County and local roadways unless they are making local deliveries, or stopping for food, fuel or rest. Large trucks must use the most direct route to travel between the Large Truck Network and their local destination. They are not permitted to detour onto County and local roadways in order to avoid congestion on major routes. In addition, large trucks are also not permitted to use County and local roadways to avoid the tolls on the New Jersey Turnpike.

Adherence to the regulations is only required for large trucks. Vehicles like 18-wheel semi-trucks are required to stay on the Network for most of their journeys, while smaller vehicles like delivery box trucks, step trucks, and vans are not restricted to the described road segments.

¹<https://advance.lexis.com/container?config=00JAA5OTY5MTdjZi1lMzYxLTQxNTEtOWFkNi0xMmU5ZTViODQ2M2MKAFBvZENhdGFsb2coFSYEAfv22IKqMT9DIHrf&crd=530efda0-756f-4c8f-9ade-004dc9b86d2c&prid=35739ed4-1618-4b52-a77b-52b0ea7eb64e>

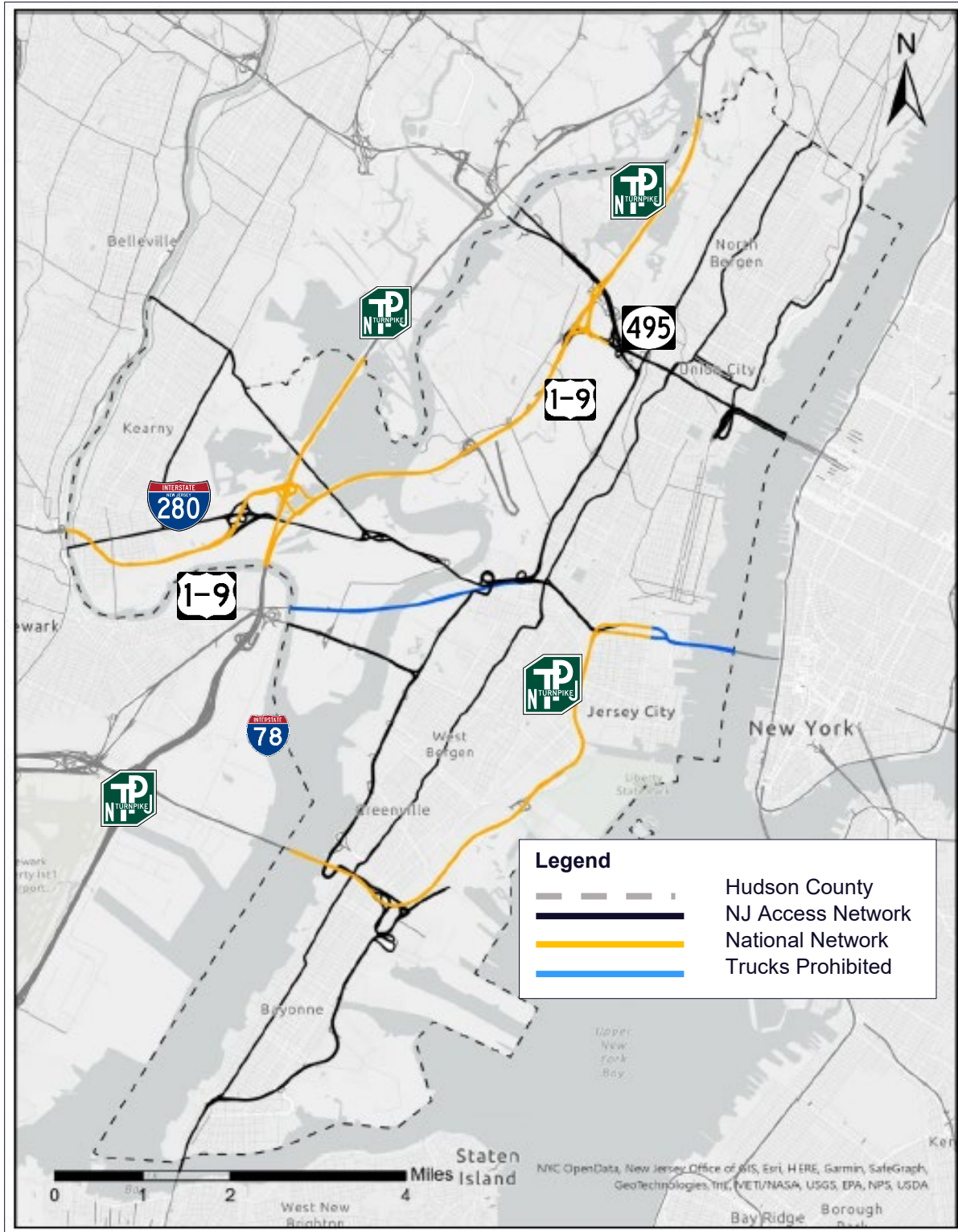


Figure 1: National (Large Truck) and New Jersey (Large Truck) Access Networks
(Note: Large trucks are prohibited on the Pulaski Skyway and the Holland Tunnel)

Traffic volumes

Existing traffic volume data on the County roadway network were assembled from the following sources: NJDOT Traffic Management System (TMS) database, NJDOT Concept Development Studies, Hudson County Planning Board Project Traffic Impact Studies, and Jersey City Traffic Counts (Miovision Data). These databases included intersection turning movement counts, short-term and long-term automatic traffic recorder (ATR) counts, and vehicle classification counts. A GIS database was created that located each of the counts for future use and reference.

Origin-Destination (O-D) data

Origin-Destination Data for medium and large trucks was obtained from INRIX Vehicle Trip Analytics. INRIX uses smart devices to record the time and position of medium and heavy trucks on a 24/7 basis as they travel through the roadway network. This data is then used to estimate O-D travel patterns, travel speeds, delays, and truck volumes. Hudson County had access to the INRIX database for February 2020, February 2021 and February 2022. Data from February 2022 only was used in this study. INRIX estimates that their sample truck volumes represent twelve percent of the daily totals. This percentage is a default for all locations and it not specific to Hudson County or to any specific roadways.

Delivery locations and demand

The location of industrial/warehousing districts and commercial districts were obtained from multiple data sources, including the NJTPA, and were entered into the INRIX database shown in **Figure 2**. Specific locations included industrial / warehousing districts in Kearny, Secaucus, along West Side Avenue, and near Global Container Terminal (GCT) in Bayonne; as well as commercial districts along Broadway in Bayonne, downtown Jersey City, the business districts in Hoboken, along Bergenline Avenue in Union City / West New York, and Kearny Avenue in Kearny.

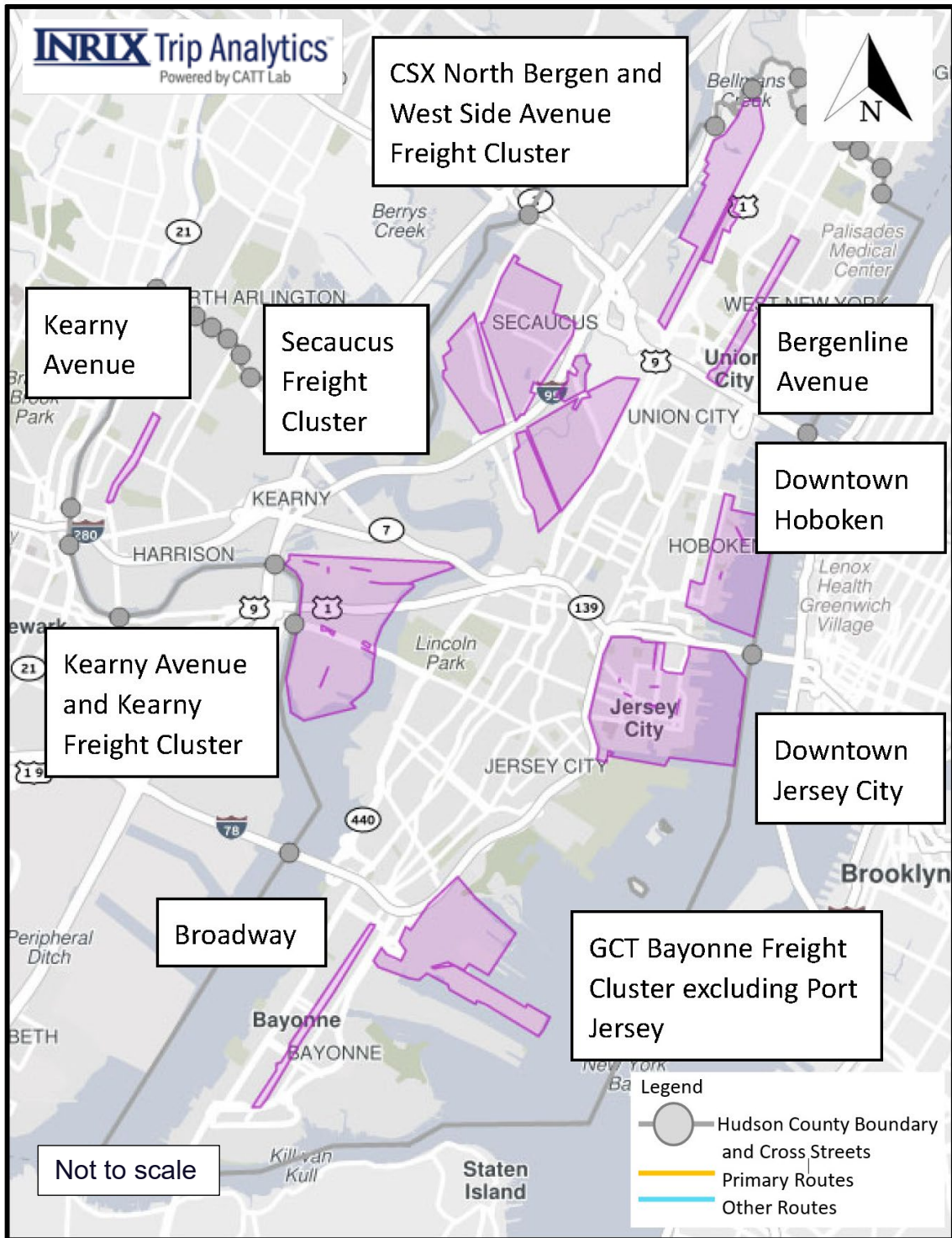


Figure 2: Industrial/Warehousing and Commercial districts (Source: INRIX)

Economic impacts

Warehousing and transportation are significant industries in Hudson County that are important to the county's and region's economy. The analysis of the economic impacts relied on the US Census, Bureau of Labor Statistics (BLS), and regional freight data available from the NJTPA. In order to define the contribution of goods movement to Hudson County's economy, the analysis focused on metrics including employment, wages and output with an emphasis on freight intensive industries; and the tonnage, value and mode of transport for goods moving in, out and through Hudson County. The analysis and associated data collection was limited to the years 2017 through 2020.

Goods and commodities

The NJTPA Freight Forecasting Tool², provides an overview of the volume and value of goods movement in, out and within Hudson County during 2020 and projected movements for 2050. The largest commodity groups by tonnage are energy, construction materials, and food and beverages.

Roadway network geometric data

Basic roadway network geometric data including but not limited to the number and width of lanes, presence and width of shoulders and medians, location of traffic signals, etc. was obtained from the NJDOT Straight Line Diagrams. The Straight Line Diagrams provide data on all roads in the Interstate, Authority, State, and County roadway network as well as major municipal streets. If more detailed information was needed at select locations, Google Maps and Google Earth were reviewed to identify right turn channelization, left and right turn bays, and taper lengths. Signal timing directives and plans were also obtained for locations where geometric improvements were considered to address capacity, safety, or other deficiencies.

Roadway network capacity and congestion

Capacity and congestion/delays were obtained from a variety of sources. The regional transportation model, the North Jersey Regional Transportation Model – Enhanced (NJRTM-E), provides an estimate of morning and evening peak period traffic volumes and capacity for base year (2018) and future year (2045) conditions. The INRIX data mentioned earlier provides estimates of hourly travel times throughout the day for the County roadway network. While the

² www.njtpa.org/NJTPA/media/Documents/Planning/Regional-Programs/Studies/2050%20Freight%20Industry%20Level%20Forecasts/Hudson-ScreenView-2020.pdf

NJRTEM-E data is synthesized, the INRIX data is based on data obtained from truck fleets and other sources.

Demographics and health

Ensuring equity is central to all transportation initiatives in New Jersey. The Hudson County Truck Routes Assessment Study used the environmental justice (EJ) population data coupled with emissions and noise data, described below, to identify population areas that are negatively impacted by traffic particularly truck traffic.

Population and education data were obtained from the 5-year U.S. Census American Community Survey (ACS) (2016-2020). Health data was obtained from the Center for Disease Control and Prevention (CDC) PLACES: Local Data for Better Health data set, which uses small area estimation methods to identify chronic disease measures for counties.

Emissions

Emissions data was obtained from the Environmental Protection Agency (EPA) MOVES model used by the NJTPA as part of Air Quality Conformity. While emissions data is typically calculated at the County level, for this study, emissions at the Census Tract level were computed by disaggregating the Hudson County data based on the auto and truck vehicle-miles of travel (VMT) in each Traffic Analysis Zone / Census Tract. The auto and truck VMT was obtained from the 2018 and 2045 North Jersey Regional Transportation Model – Enhanced (NJRTEM-E).

Crashes

Crash data involving trucks was obtained from the NJDOT Safety Voyager system. All truck crashes that occurred on the county roadway network were entered into a GIS database. The GIS database was then used to identify high-crash corridors for additional study, including one location where a Highway Safety Manual (HSM) analysis was performed. For each of the high-crash corridors, INRIX data regarding medium and heavy truck volumes and O-D travel patterns were also obtained. Crash reports for all truck/bicycle and truck/pedestrian crashes were obtained by Hudson County from the individual municipalities.

Noise

Noise data was obtained from the National Traffic Atlas Database (NTAD). Noise was associated with each Traffic Analysis Zone / Census Tract through a GIS exercise that used the maximum value obtained from the NTAD for each area.

Intermodal facilities

Intermodal terminals are facilities where freight is transferred between two modes: example, air cargo to railroad, or from cargo ship to truck. Five intermodal facilities in Hudson County were identified using LoadMatch³: Global Container Terminal (GCT) in Bayonne; CSX North Bergen; CSX South Kearny; NS NJIT Croxton Yards in Jersey City; and Evans Delivery Company in Kearny. For each facility, the INRIX database was used to determine the daily number of medium and heavy trucks as well as their origins and destinations and the routes that the trucks used.

Truck parking facilities

The NJTPA maintains a database of truck parking facilities throughout the region ([NJTPA Truck Parking \(arcgis.com\)](https://www.njtpa.com/arcgis.com)). One public and four private facilities were identified in Hudson County and are shown in **Figure 3**.

Bridges and weight limits

Bridge data was obtained from the NJDOT Combined Inspection System ComBIS system for each of the bridges shown in **Figure 4**. Rather than rely on the truck percentages included in ComBIS, the INRIX Trip Analytics was run for each bridge to estimate medium and heavy truck volumes and O-D travel patterns. Several bridges were then selected for additional study based on the high truck volumes.

Pavement conditions

The NJDOT Pavement Management System (PMS) was the primary source of pavement data and is shown by pavement condition in **Figure 5**. The 0.1-mile pavement segments were then combined to align with the larger INRIX segments. The INRIX Trip Analytics was then run for all INRIX segments to estimate medium and heavy truck volumes and O-D travel patterns. The combination of poor pavement and high truck volumes were used to identify segments for additional analysis.

³ www.loadmatch.com/directory/terminals.cfm?category=terminals&state=NJ



Literature review and case studies

A literature review was conducted to identify existing conditions and context, relevant strategies and policies and best practices. The literature review predominantly focused on studies within the NJTPA region with an emphasis on Hudson County. Additional studies from comparable jurisdictions (other regional agencies such as the Southern California Association of Governments (SCAG)) and at larger scales (state agencies, national syntheses) were also reviewed with an emphasis on successfully implemented truck management strategies.

Case studies were identified for multiple jurisdictions that have developed or are in the process of developing truck management plans. The study team reviewed these case studies and organized them by how they approach truck management; with a focus on community impacts, operations, or infrastructure, however there are many overlaps among these categories. Case studies included Oakland, CA, Seattle, WA, Washington, DC, Los Angeles, CA, New York City, New York State, and Portland, OR.

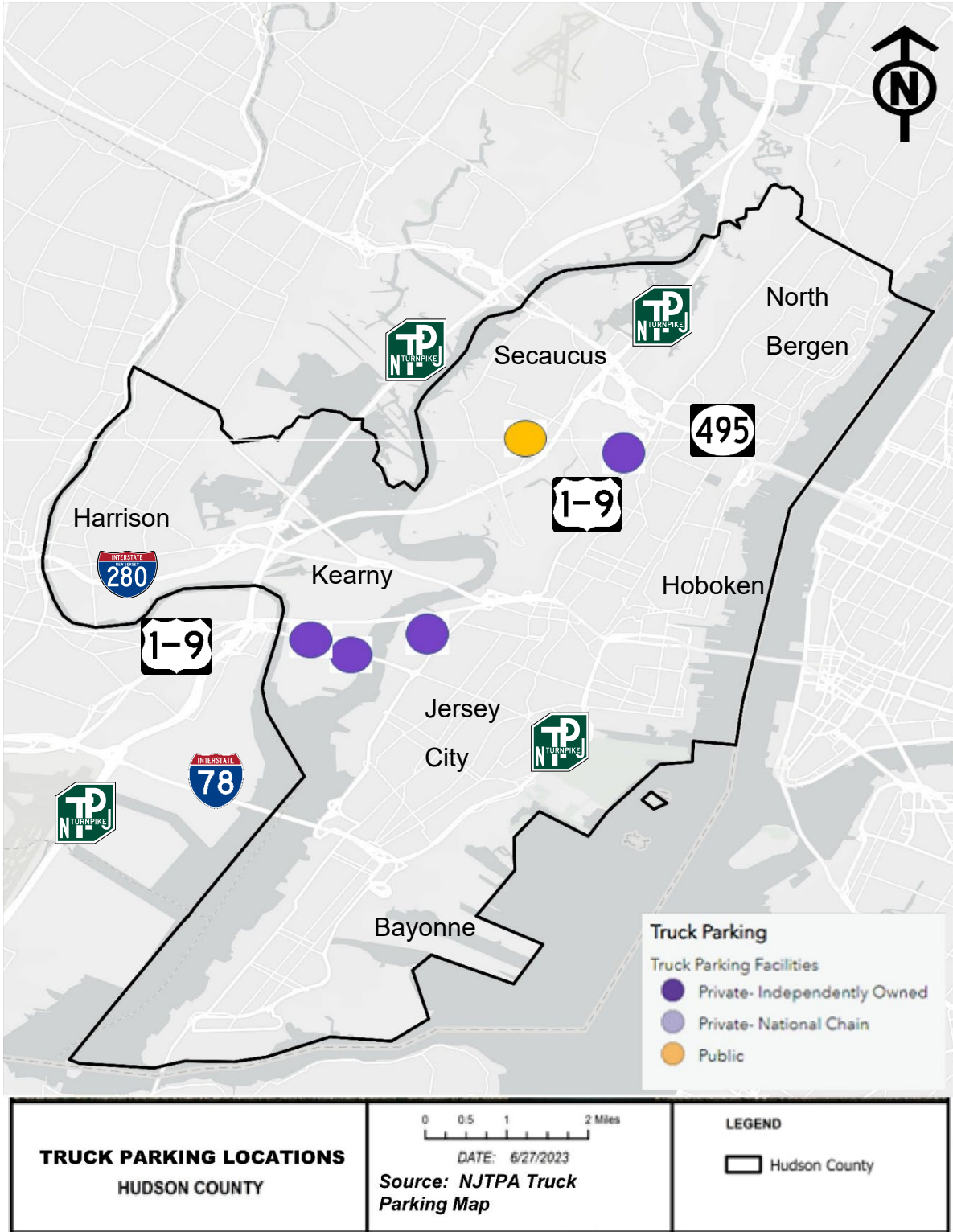


Figure 3: Truck Parking Locations (Source: NJTPA Truck Parking Map)

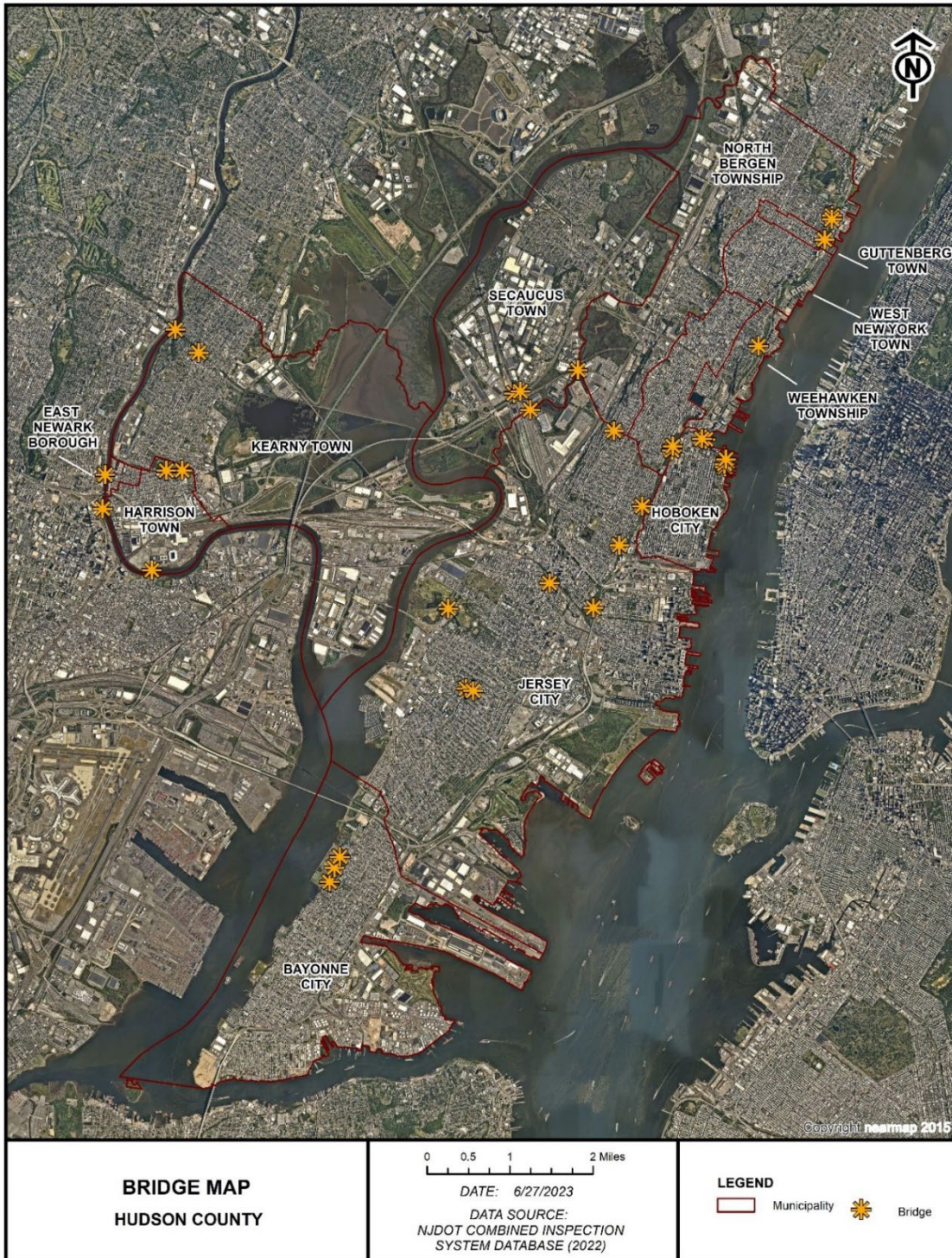


Figure 4: Bridge Locations (Source: NJDOT ComBIS)



Figure 5: Pavement Condition (Source: NJDOT Pavement Management System)

IV. Data Analysis

Introduction

This section summarizes the data analysis effort that was completed as part of The Hudson County Truck Routes Assessment Study. The data collected activities completed in Task 2 were the starting point for each of the eight data analysis subjects: mobility and efficiency, safety, pavement conditions, community impacts, economic activity and value, deliveries and curb management and best practices and strategies. The Task 3 Data Analysis Technical Memorandum is included as **Appendix C**.

Mobility and Efficiency

INRIX data was used to derive daily medium and heavy truck volumes and travel patterns. Trucks are defined by Gross Vehicle Weight (GVW). GVW includes the weight of the vehicle, fuel, passengers, and freight (loaded vehicle weight). Medium trucks are defined as GVW equal to 14,000 to 26,000 pounds and heavy trucks are defined as GVW greater than 26,000 pounds. INRIX continuously collects waypoint, or geographic position data, from connected autos and trucks, referred to as “probes”. The INRIX probe and waypoint data provides the ability to compute both area-based and link-based truck flows. Area-based flows refer to truck travel patterns entering and exiting a defined geographic area that may vary in size from an intermodal terminal to a municipality or even all of Hudson County. Link-based flows refer to truck travel patterns on one or more specific roadways.

Daily truck trips can be classified into four major movements:

- Local or Internal – Internal (I-I) Trips - these trips have both origins and destinations within the County
- Internal - External (I-X) Trips – these trips have origins within the County, but destinations outside of the County
- External – Internal (X-I) Trips – these trips have origins outside of the County, but destinations within the County
- Through or External – External (X-X) Trips – these trips have both origins and destinations outside of Hudson County

A truck trip refers to the one-way movement between two points. Truck trips can be long, such as inter-county trips, and short, such as within a single large freight facility. Average daily truck trips by major movement are summarized in **Table 1** below.

Table 1: Daily Medium and Heavy Truck Trips (Source: INRIX, February 2022)

Movement	Daily Trips (2022)			Percent of Trips (2022)		
	Medium	Heavy	Total	Medium	Heavy	Total
Internal-Internal (I-I)	129,690	5,190	134,880	64%	48%	63%
Internal-External (I-X)	32,230	3,020	35,250	16%	28%	16%
External-Internal (X-I)	33,980	2,300	36,280	16%	21%	17%
External-External (X-X)	7,440	350	7,790	4%	3%	4%
Total	203,340	10,860	214,200	100%	100%	100%

Heavy truck volumes that originated and/or are destined for Census Tracts within Hudson County are highlighted in **Figure 6** and **Figure 7**, respectively. Census Tracts were grouped by heavy truck trips into five groups of roughly equal size: 1, 2-10, 11-100, 101-1000, and greater than 1,000. As shown in the figure, there are only a few Census Tracts that generate over 1,000 heavy truck trips per day. These Census Tracts correspond to the locations of intermodal freight facilities including Global Container Terminal (GCT) and adjacent facilities in Bayonne and Jersey City (Census Tracts 103 and 58.02), Norfolk Southern (NS) Croxton Yard in Jersey City (Census Tract 69), and CSX facilities in Kearny (Census Tract 127) and North Bergen (Census Tracts 148.01 and 148.02).

Medium truck volumes that originated and/or are destined for Census Tracts within Hudson County are highlighted in **Figure 8** and **Figure 9**, respectively. Census Tracts were grouped by medium truck trips into five groups of roughly equal size: 1-10, 11-100, 101-1,000, 1,001-10,000, and greater than 1,0000. As shown in the figure, the vast majority of Census Tracts generate over 100 medium truck trips per day. The Census Tracts that are the major origins and destinations are centered in the warehousing and distribution centers in Kearny and Secaucus.

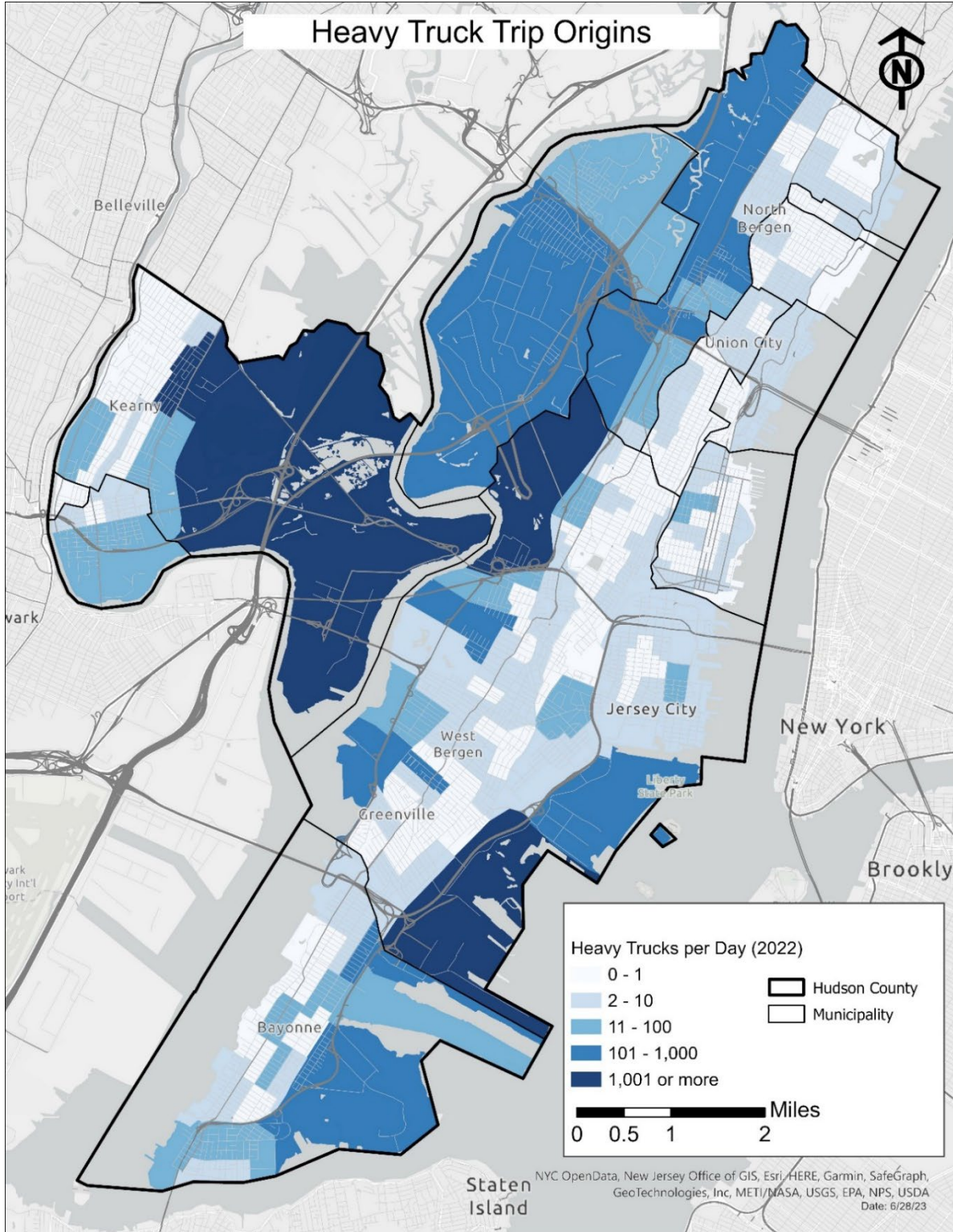


Figure 6: Daily Heavy Truck Trips by Census Tract - Origins
Source: INRIX, February 2022

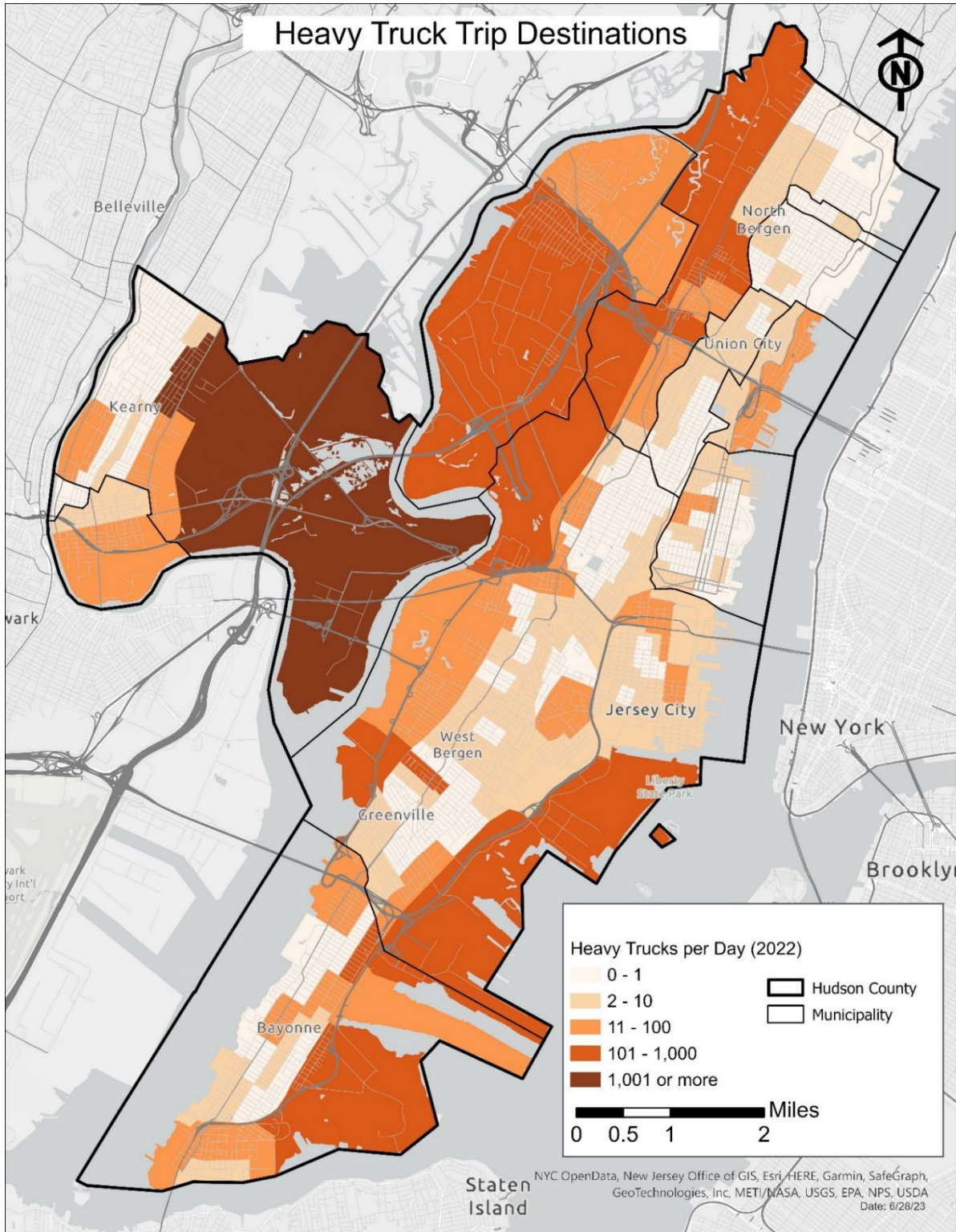


Figure 7: Daily Heavy Truck Trips by Census Tract - Destinations
Source: INRIX, February 2022

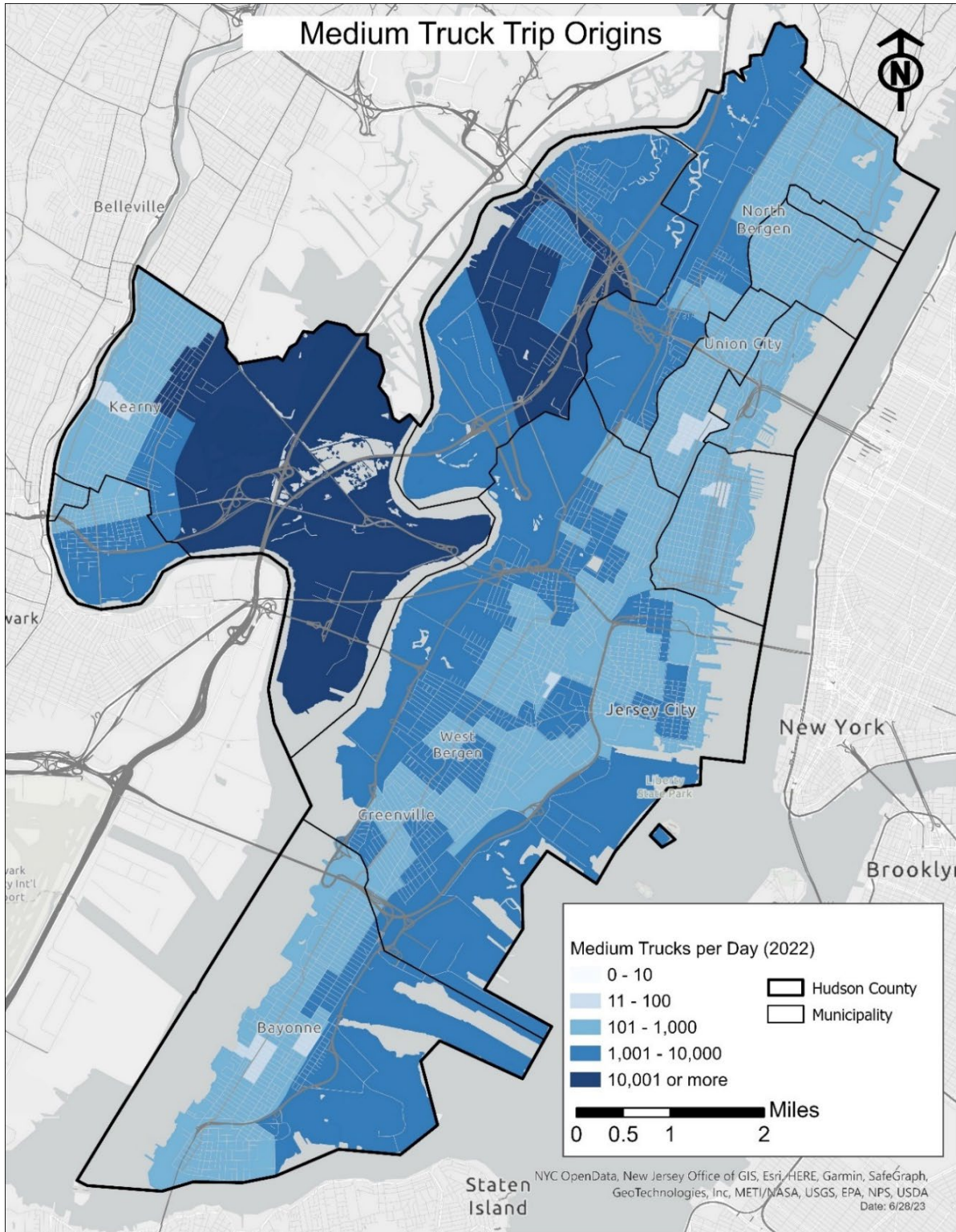


Figure 8: Daily Medium Truck Trips by Census Tract – Origins
Source: INRIX, February 2022

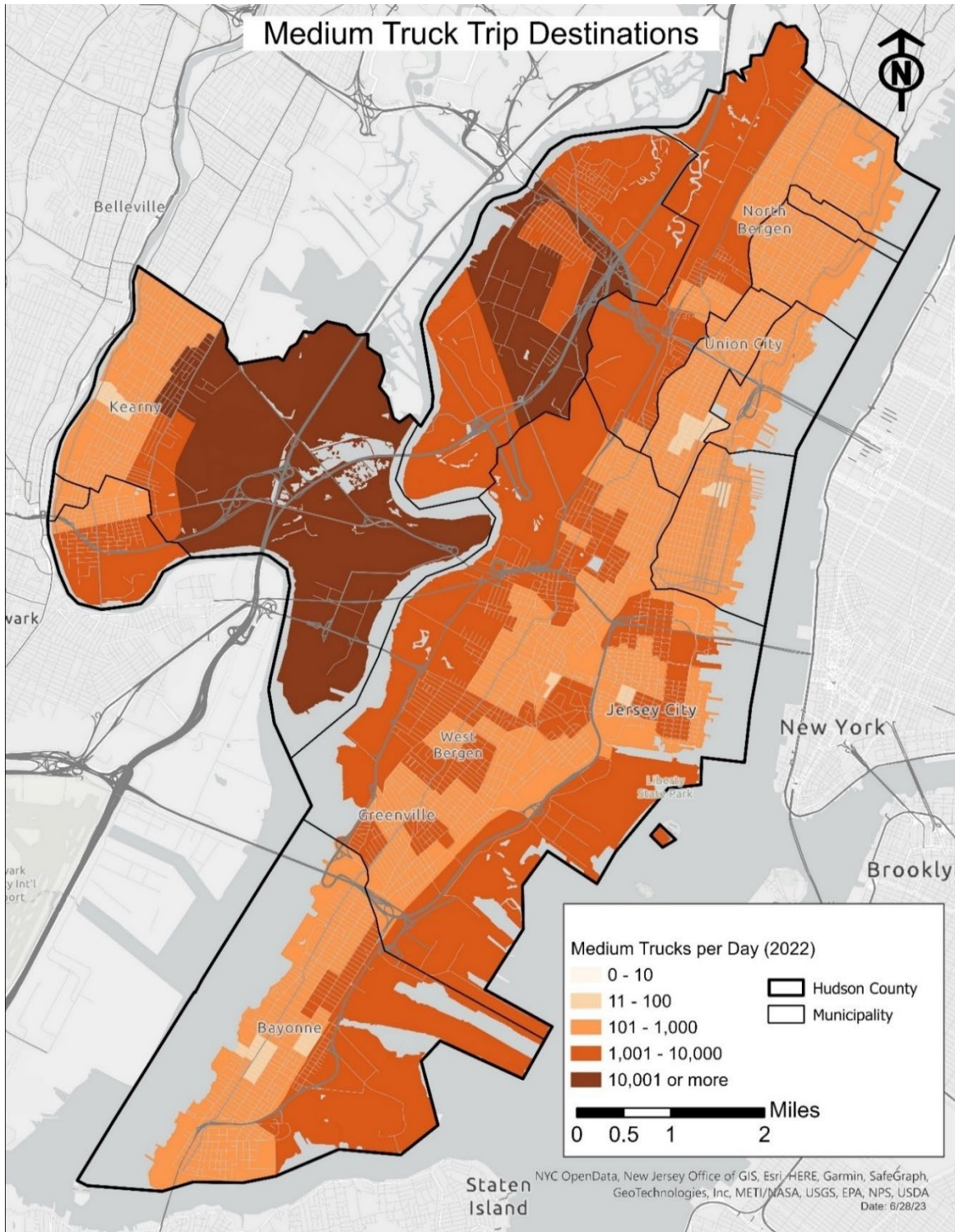


Figure 9: Daily Medium Truck Trips by Census Tract - Destinations
Source: INRIX, February 2022

Safety

The NJDOT Safety Voyager Crash Database was used to identify crashes in Hudson County involving trucks on the County and Municipal roadway network that are of the National Highway System (NHS) network. The NHS is a federal classification system that includes all roadways that “provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility.”

All truck crashes that involved one or more trucks were analyzed, but the focus was on the following county and municipal roads. These roads include the County routes and municipal streets that are part of the NJ Access Network, the primary truck routes in Hudson County.

- John F. Kennedy Boulevard - Bayonne, Jersey City, Union City, North Bergen
- Anthony Delfino Way / John F. Kennedy Boulevard East / River Road – Weehawken, West New York, North Bergen
- Harrison Avenue / Newark-Jersey City Turnpike – Harrison, Kearny
- New County Road / County Avenue - Secaucus
- Fish House Road / Pennsylvania Avenue / Central Avenue - Kearny
- Secaucus Road – North Bergen, Secaucus
- Observer Highway / Paterson Avenue / Paterson Plank Road – Hoboken, Jersey City, Union City, North Bergen, Secaucus
- Frank E. Rodgers Boulevard - Harrison
- Grand Street – Jersey City
- Sip Avenue – Jersey City
- Newark Avenue – Jersey City
- Tonnelle Avenue – Jersey City
- Summit Avenue – Jersey City
- Bergen Avenue – Jersey City
- Marin Boulevard – Jersey City
- Broadway – Jersey City
- Pershing Avenue – Weehawken
- 60th Street – West New York

There were 1,069 crashes involving one or more trucks on these roadways for the period 2017 to 2021. The crashes are presented in **Figure 10** and the number and severity of crashes per year is shown in **Table 2**. As shown in the table, the number of truck crashes declined dramatically in 2020 due to the reduced travel during the pandemic and have still not returned to 2018-2019 levels. Crash severity is also included in the table. There was one fatal crash in both 2019 and 2020. There were 146 injury crashes or 13.7 percent. In contrast, the three most recent NJDOT Statewide Crash Summaries for County Road System (2018, 2019, 2020) showed approximately 24 percent of crashes resulted in an injury. This lower percentage is likely due to the lower average speeds due to the urban density in Hudson County compared to other counties.



Figure 10: Truck Crashes (Source: NJDOT Safety Voyager)

Table 2: Crashes by Severity (2017-2021)

Severity	Year						Total
	2017	2018	2019	2020	2021	2021 [%]	
Fatal	0	0	1	1	0	0%	2
Injury	18	37	34	18	39	18%	146
Property Damage Only	184	196	219	144	178	82%	921
Total	202	233	254	163	217	100%	1,069

Truck crashes by municipality are shown in **Table 3**. Jersey City has almost one-third of all crashes, however Kearny, North Bergen, Secaucus, and Harrison also include high crash locations. The most significant decrease in crashes in 2020 occurred in Harrison, Jersey City, and Union City.

Table 3: Crashes by Municipality (2017-2021)

Municipality	Year						Total
	2017	2018	2019	2020	2021	2021 [%]	
Bayonne	3	7	9	1	2	1%	22
East Newark	0	1	0	0	0	0%	1
Guttenberg	0	1	3	0	2	1%	6
Harrison	23	24	25	11	23	11%	106
Hoboken	8	2	5	2	4	1%	21
Jersey City	73	78	69	42	56	26%	318
Kearny	28	30	34	29	25	11%	146
North Bergen	18	30	43	33	39	18%	163
Secaucus	26	35	29	19	39	18%	148
Union City	10	11	24	12	11	5%	68
Weehawken	8	6	4	6	8	4%	32
West New York	5	8	9	8	8	4%	38
Total	202	233	254	163	217	100%	1,069

Truck crashes by roadway are shown in **Table 4**. John F. Kennedy Boulevard and Paterson Plank Road / Paterson Avenue / Observer Highway comprise over one-half of all crashes. Two of the highest crash locations are the Paterson Plank Road / Union Turnpike / US Route 1&9 (Tonnelle Avenue) interchange; and the complex intersection of New County Road at US Route 1&9 (Tonnelle Avenue). Note that there were over 100 crashes over the five years that had either conflicting information regarding the precise location of the crash so that it could

not be geolocated, or occurred on private property, such as a large warehouse facility, and not on a public street. These crashes are therefore not part of this analysis.

Table 4: Truck Crashes by Roadway (2017-2021)

Roadway	Municipality	Year					Total
		2017	2018	2019	2020	2021	
John F. Kennedy Boulevard	Bayonne, Jersey City, Union City, West New York, North Bergen	52	63	83	41	57	296
Anthony Delfino Way / John F. Kennedy Boulevard East / River Road	Union City, Weehawken, West New York, North Bergen	3	7	5	3	5	23
Harrison Avenue / Newark- Jersey City Turnpike	Harrison, Kearny	22	31	38	20	31	142
County Avenue	Secaucus	17	23	18	14	15	87
Fish House Road / Pennsylvania Avenue / Central Avenue	Kearny	13	7	10	12	3	45
Secaucus Road	Secaucus	3	8	10	8	8	37
Paterson Plank Road / Paterson Avenue / Observer Highway	Hoboken, Jersey City, Union City, West New York	44	38	48	32	54	216
Frank E. Rodgers Boulevard	Harrison	13	15	10	4	10	52
Other Roadways ¹		35	41	32	29	34	171
Total		202	233	254	163	217	1,069

Notes:

¹Other Roadways includes all County and municipal roadways not specifically listed in table.

Truck crashes by crash type are shown in **Table 5**. Same direction sideswipe crashes make up over 40 percent of all crashes. This is much greater than the NJDOT Statewide Crash Summary for County Road System (2018, 2019, 2020) that showed less than 15 percent of crashes were same direction sideswipe. Other significant crash types were struck parked vehicles (14 percent), same direction rear end (14 percent), and fixed object (10 percent).

Table 5: Truck Crashes by Crash Type (2017-2021)

Crash Type	Year					2021 [%]	Total
	2017	2018	2019	2020	2021		
Backing	5	11	11	10	11	5%	48
Encroachment	3	2	2	1	1	0.5%	9
Fixed Object	20	24	23	17	27	12%	111
Left Turn and U Turn	6	2	2	3	6	3%	19
Non-fixed Object	0	0	2	1	2	1%	5
Opposite Direction (Head On)	3	0	5	3	2	1%	13
Opposite Direction (Sideswipe)	2	7	7	4	2	1%	22
Other	0	0	2	1	0	0%	3
Overtuned	0	0	2	2	1	0.5%	5
Pedalcyclist (1)	0	1	3	1	1	0.5%	6
Pedestrian	2	2	2	0	3	1%	9
Right Angle	17	15	13	12	14	7%	71
Same Direction Rear End	19	40	33	29	32	15%	153
Same Direction Sideswipe	102	98	102	59	85	39%	446
Struck Parked	23	31	44	20	29	13%	147
Unknown	0	0	0	0	1	0.5%	1
Total	202	233	254	163	217	100%	1,069

Notes: 1. Pedalcyclist is the term used by NJDOT Bureau of Transportation Data and Safety (BTDS) to distinguish between a cyclist on a bicycle versus a cyclist on a motor bike

The details of the Truck/Pedalcyclist and Pedestrian crashes were obtained by Hudson County from the local municipalities and are listed in **Table 6** below.

Table 6: Truck / Pedestrian and Pedalcyclist Crashes (2017-2021)

FID	Crash Type	Street Name	MP	Municipality	Severity	Date
931	Pedestrian	County Road	0.85	Jersey City	Injury	2/10/2017
335	Pedestrian	Harrison Avenue	12.61	Harrison	Injury	7/18/2017
416	Pedestrian	County Avenue	2.07	Secaucus	Injury	1/10/2018
802	Pedestrian	Newark Avenue	1.44	Jersey City	Injury	8/9/2018
243	Pedalcyclist	John F. Kennedy Boulevard	34.05	Union City	Injury	11/13/2018
920	Pedalcyclist	Palisade Avenue	0.43	Jersey City	Injury	2/4/2019
913	Pedalcyclist	60 th Street	0.15	West New York	Injury	2/21/2019
919	Pedestrian	60 th Street	0.34	West New York	Injury	9/28/2019
244	Pedestrian	John F. Kennedy Boulevard	25.4	Bayonne	Injury	10/25/2019
699	Pedalcyclist	Paterson Plank Road	1.69	Union City	Fatality	11/25/2019
66	Pedalcyclist	John F. Kennedy Boulevard	27.5	Jersey City	Injury	9/6/2020
369	Pedestrian	John F. Kennedy Boulevard	2.29	Bayonne	Injury	2/4/2021
381	Pedalcyclist	County Road	0.04	Jersey City	Injury	4/12/2021
383	Pedestrian	John F. Kennedy Boulevard	1.32	Bayonne	Injury	9/15/2021
608	Pedestrian	Paterson Plank Road	2.02	Union City	Injury	6/30/2021

Pavement Conditions

In the PMS, pavement conditions are categorized as “Poor”, “Fair”, or “Good”. For State and Authority roadway links, 16 percent, 62 percent and 22 percent of all lane-miles are classified as “Poor”, “Fair” and “Good”, respectively. For the County and Municipality roadway links, 28 percent and 71 percent of all lane-miles are classified as “Poor” and “Fair”, respectively. Less than one percent of lane-miles are classified as “Good”.

Community Impacts

Sustainability and equity are essential to all transportation initiatives in New Jersey. This section analyzes the impacts of medium and large truck traffic, specifically noise and emissions. An equity assessment of demographic and health indicators was also performed to identify areas that are negatively impacted by freight. The noise, emissions, and equity assessments are overlaid together to develop a community impact score for each Census Tract in Hudson County. Scores are applied to the transportation network to prioritize congested corridors, safety corridors, deficient bridges, and poor pavement corridors within areas that require increased attention.

Economic Activity and Value

This section defines the contribution of goods movement to the economy of Hudson County. The metrics examined are employment, wages and output with an emphasis on freight-intensive

industries; and the tonnage, value and mode of transport for goods moving in, out and through Hudson County. The analysis is strictly descriptive in nature and includes the years 2017 through 2020. No attempt is made to project the impact of the goods movement industry on Hudson County but instead to characterize its relevance in the present day.

Deliveries and Curb Management

The project team conducted an analysis of delivery demand and curb management solutions within Hudson County. The analysis included review of truck travel patterns, spatial data on freight facilities, local roadway conditions, and feedback from industry professionals.

Best Practices and Strategies

A review was conducted of best practices relating to trucks and goods movement. The review included a discussion of modern logistics and goods movement challenges and concerns, and case studies of best practices from both North America and around the world. A variety of sources were reviewed including:

- NACTO Street Design Guidelines
- Delivering New York: A Smart Truck Management Plan for New York City, NYCDOT
- U.S. case studies
- International case studies

V. Identification of Critical Locations

Introduction

Critical locations were identified through a review of the criteria discussed in section IV: congestion, safety, bridges, and pavement condition. Five to 10 potential locations were selected for each criteria. For each location, an equity analysis was performed to determine if and to what extent improvements were needed to address the needs of underserved populations.

Congestion

Ten roadway segments with high levels of congestion were selected for further analysis and the development of recommendations as follows. An initial list was developed through a review of the link volume to capacity (v/c) ratios obtained from the NJRTM-E 2018 and 2045 model runs. At low volume to capacity ratios, there is no congestion and vehicles travel at free-flow conditions. Speeds remain constant as the v/c approaches 0.8 to 0.9. At v/c ratios between 0.9 and 1.0 however, speeds decrease rapidly. V/c ratios greater than 1.0 are referred to as forced-flow conditions characterized by slow speeds and long delays and queues at signalized intersections. For each road segment in the initial list, INRIX was used to estimate the medium and heavy truck volumes; and to generate a congestion scan for the corridor. A congestion scan plots average travel speed by time of day and direction. Using these three independent sets of data: INRIX observed truck volume data, INRIX travel speed data, and NJRTM-E estimated volume and capacity data, 10 roadway segments were selected and are listed below in **Table 7** and highlighted in **Figure 11**.

Table 7: Congestion Locations

Roadway Name	Between	And	MP	Municipality
Harrison Avenue / Newark-Jersey City Turnpike	Bergen Avenue	NJ Route 7	13.9-16.0	Harrison, Kearny
Paterson Avenue	Observer Highway	Paterson Plank Road	0.6-0.9	Hoboken
John F. Kennedy Boulevard	Communipaw Avenue	Tonnelle Avenue (US Route 1&9)	29.4-30.4	Jersey City
Manhattan Avenue	Central Avenue	County Road		Jersey City
Secaucus Road	Tonnelle Avenue (US Route 1&9)	County Road	0.5-0.7	Jersey City
Broadway	US Route 1&9 Truck	Tonnelle Avenue		Jersey City
Marin Boulevard	6 th Street	12 th Street		Jersey City
Bergenline Avenue	60 th Street	John F. Kennedy Boulevard East		North Bergen, West New York
County Avenue / New County Road	Paterson Plank Road	Seaview Drive	1.0-3.0	Secaucus
Park Avenue	19 th Street	Pleasant Avenue		Weehawken

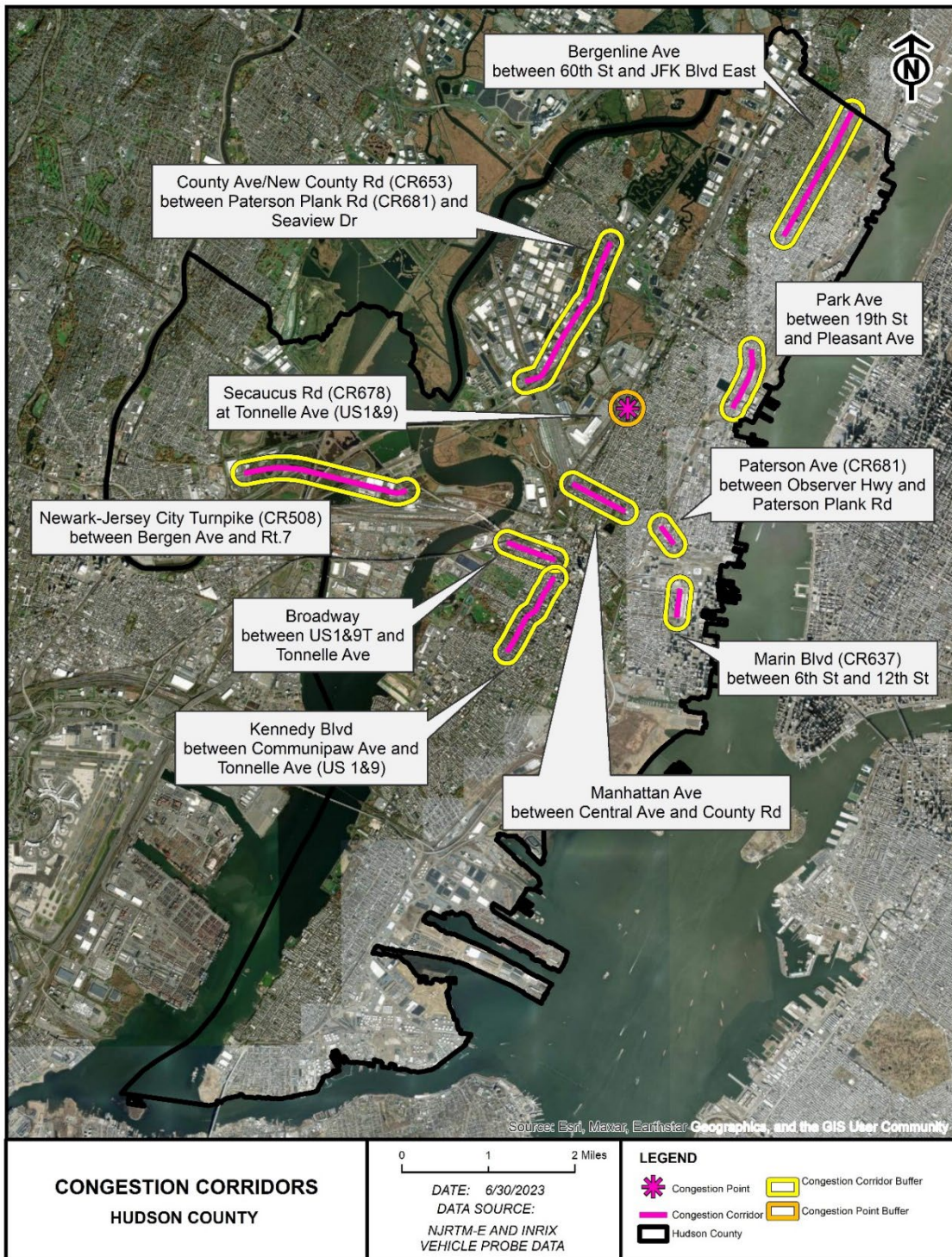


Figure 11: Locations of Congested Corridors

Harrison Avenue / Newark–Jersey City Turnpike between west of Bergen Avenue and NJ Route 7, Harrison and Kearny

The Harrison Avenue and Newark – Jersey City Turnpike corridor, shown in **Figure 12**, is 2.1 miles in length and provides a connection between the airport and port areas of Newark with Hudson and Bergen Counties without paying the tolls on the New Jersey Turnpike. Medium and heavy truck volumes along Harrison Avenue / Newark-Jersey City Turnpike are presented in **Table 8**. More than one-half of all heavy truck trips are through trips between different parts of the NJTPA region with neither origins nor destinations within Hudson County. Trips within the NJTPA region bound to or from Hudson County represent almost 90 percent of all medium truck trips and 25 percent of all heavy truck trips. Local trips with origin and destination within Hudson County are a small percentage of both medium and heavy truck trips.

Table 8: Harrison Avenue / Newark-Jersey City Turnpike – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name and Truck Type	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Harrison Avenue / Newark – Jersey City Turnpike (Medium Trucks)	65	605	37	706	9%	86%	5%
Harrison Avenue / Newark – Jersey City Turnpike (Heavy Trucks)	8	24	67	100	8%	24%	67%

These segments were flagged in the NJRTM-E but INRIX generally showed satisfactory speeds. The interchange with I-280 had previously been flagged for the large number of auto and truck crashes. Congestion coupled with high truck volumes likely contributes to the safety issues at this location.

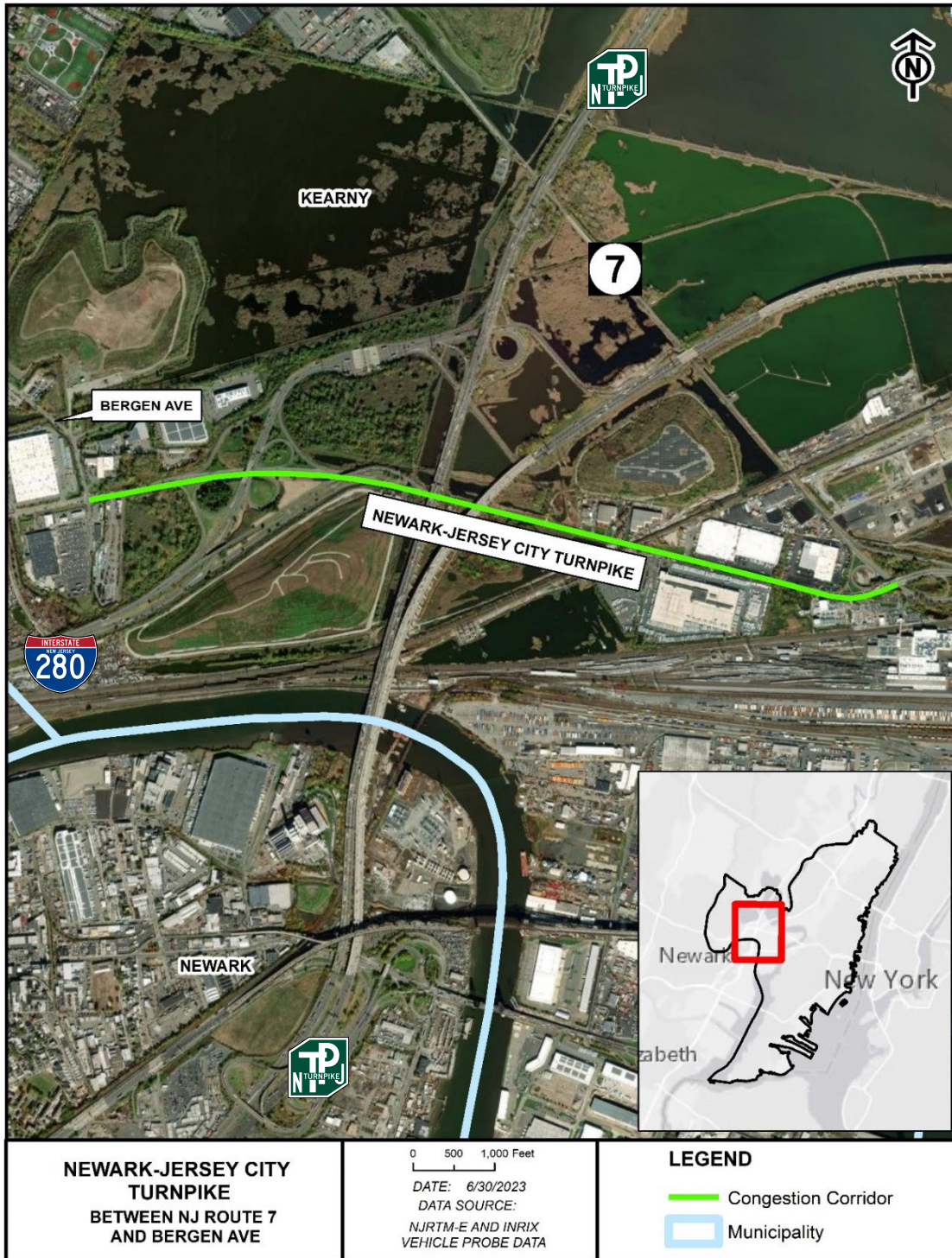


Figure 12: Harrison Avenue / Newark-Jersey City Turnpike, Harrison and Kearny

Paterson Avenue between Observer Highway and Paterson Plank Road, Hoboken

The Paterson Avenue corridor, shown in **Figure 13**, is 0.3 miles in length and provides access for trucks traveling to and from Hoboken. The corridor was flagged as congested by both the NJRTM-E and INRIX. INRIX estimates over one thousand medium trucks per day, but minimal heavy trucks. Truck volumes by trip type are presented in **Table 9**. Forty percent of trips are I-X and X-I trips. Fifteen percent are traveling between Hudson County and other counties in New Jersey and the remaining 25 percent are traveling between Hudson County and New York City.

Table 9: Paterson Avenue – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name and Truck Type	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Paterson Avenue (Medium Trucks)	609	403	26	1038	59%	39%	3%
Paterson Avenue (Heavy Trucks)	2	1	0	3	60%	40%	0%

INRIX showed speeds of 10 mph or less throughout the corridor especially during the evening peak period.

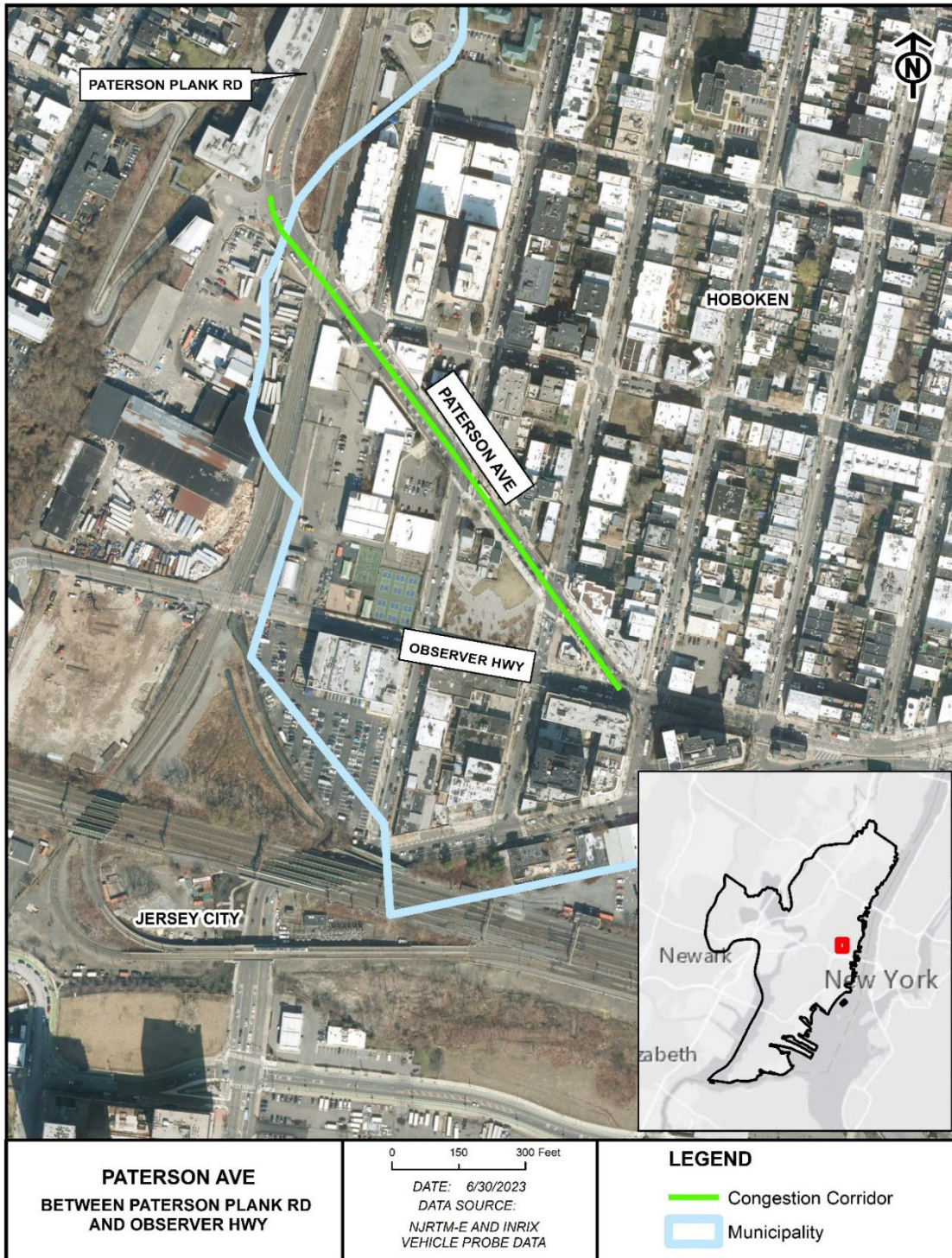


Figure 13: Paterson Avenue between Observer Highway and Paterson Plank Road, Hoboken

John F. Kennedy Boulevard between Communipaw Avenue and Tonnelle Avenue (US 1&9), Jersey City

Multiple segments were identified as congested along the 1.0 mile John F. Kennedy Boulevard corridor shown in **Figure 14**. Other segments had previously been studied or identified due to the high number of truck crashes (MP 2.5-3.1) and poor pavement conditions (Montgomery Street to Tonnelle Avenue (US 1&9)).

The estimated truck volumes for the INRIX segments that comprise this section of John F. Kennedy Boulevard, provided in **Table 10** below, show very high medium truck volumes and minimal heavy truck volumes.

Table 10: John F. Kennedy Boulevard – Medium and Heavy Trucks by Trip Type
(Source: INRIX)

Segment Name	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Medium Trucks							
John F. Kennedy Boulevard	2889	473	108	3469	83%	14%	3%
John F. Kennedy Boulevard	2283	437	89	2809	81%	16%	3%
Heavy Trucks							
John F. Kennedy Boulevard	9	2	6	17	54%	12%	36%
John F. Kennedy Boulevard	6	2	9	17	36%	12%	54%

INRIX showed that travel conditions are generally satisfactory in most of the corridor throughout the day. However, in the section between Communipaw Avenue and Tonnelle Avenue (US Route 1&9), vehicles travel at average speeds of 10 mph or less in both directions during various times of day.

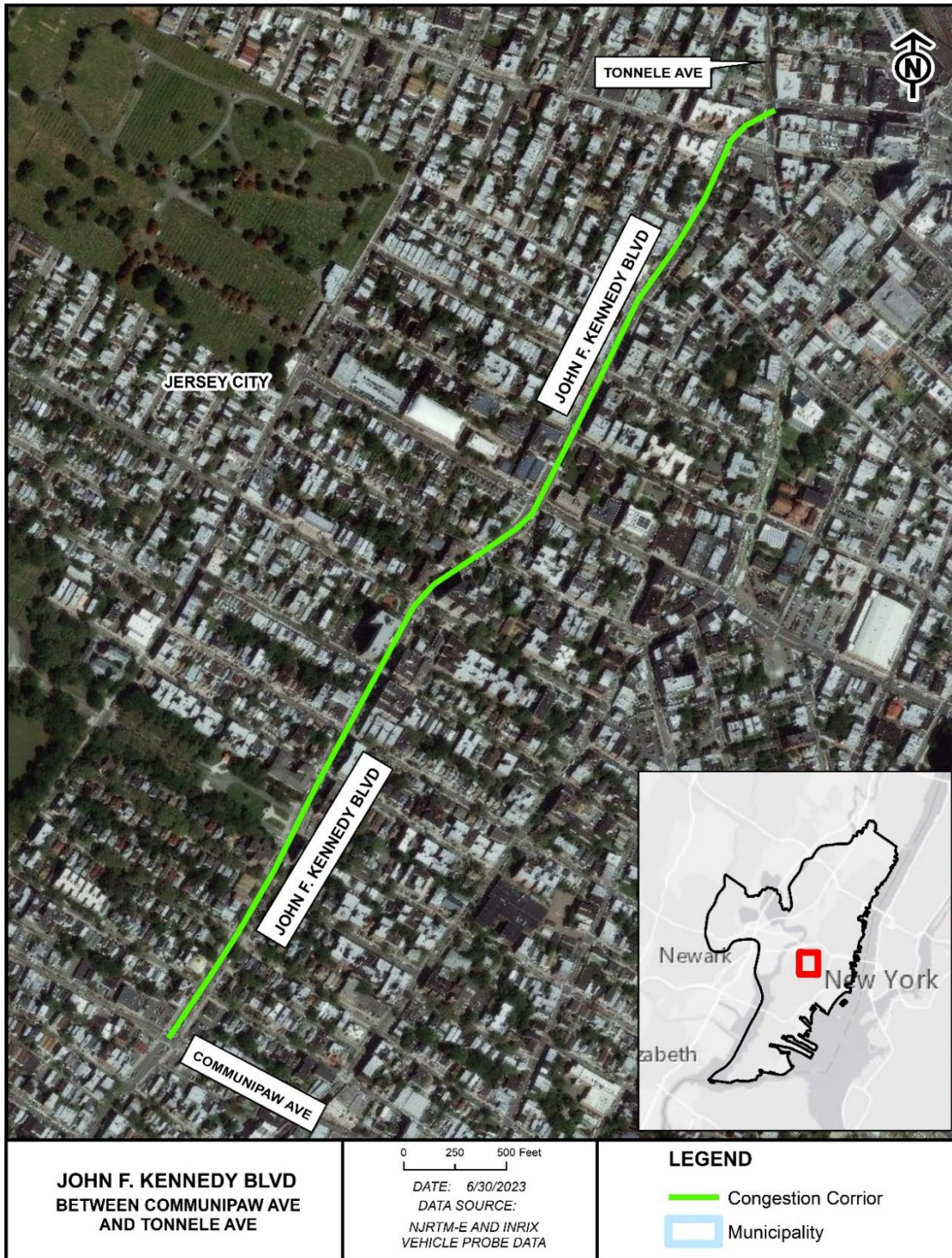


Figure 14: John F. Kennedy Boulevard between Communipaw Avenue and Tonnele Avenue (US Route 1&9), Jersey City

Manhattan Avenue, between Central Avenue and County Road, Jersey City

The Manhattan Avenue corridor, shown in **Figure 15**, is 0.7 miles in length and provides an alternative route for vehicles traveling between Jersey City and Secaucus. The corridor was flagged as congested by both the NJRTM-E and INRIX. INRIX estimates close to 500 medium trucks per day, but minimal heavy trucks. Truck volumes by trip type are presented in **Table 11**. Of the I-X and X-I trips, most are within the NJTPA region as only six percent are traveling to or from New York City.

Table 11: Manhattan Avenue – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name and Truck Type	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Manhattan Avenue (Medium Trucks)	313	126	9	448	70%	28%	2%
Manhattan Avenue (Heavy Trucks)	0	1	0	0	0%	100%	0%

INRIX showed speeds of 10 mph or less throughout the corridor in both directions during the morning and evening peak periods.



Figure 15: Manhattan Avenue, between Central Avenue and County Road, Jersey City

Secaucus Road at Tonnelle Avenue (US Route 1&9), Jersey City

The Secaucus Road corridor, shown in **Figure 16**, is 0.2 miles in length and was flagged as congested in the NJRTM-E. Secaucus Road has very high medium and heavy truck volumes as shown in **Table 12**. There are a relatively low number of local trips, especially for heavy trucks. Most of the I-X and X-I trips are within the NJTPA region as the percentage of truck trips to and from New York City are less than five percent for medium trucks and close to zero percent for heavy trucks.

Table 12: Secaucus Road – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Medium Trucks							
Secaucus Road	1592	1132	123	2847	56%	40%	4%
Secaucus Road	2392	1274	100	3766	64%	34%	3%
Heavy Trucks							
Secaucus Road	53	191	40	283	19%	67%	14%
Secaucus Road	255	675	87	1017	25%	66%	9%

INRIX only provides data for the Secaucus Road segment west of the US Route 1&9 ramps. On this segment, travel speeds are approximately 20 mph throughout the day in both directions. INRIX showed speeds of 10 mph at the US Route 1&9 ramp intersections.



Figure 16: Secaucus Road at Tonnelle Avenue (US Route 1&9), Jersey City

Broadway between US Route 1&9 Truck and Tonnelle Avenue, Jersey City

The Broadway corridor, shown in **Figure 17**, is 0.4 miles in length and provides a connection between US Route 1&9 Truck and Tonnelle Avenue in Jersey City. The intersection with Tonnelle Avenue was flagged in the NJRTM-E. INRIX showed very high medium and heavy truck volumes as shown in **Table 13**. I-X and X-I trips are approximately one-half of both medium and heavy truck trips. Most trips are within the NJTPA region as trips to and from New York City make up about 15 percent of medium truck trips and a minimal percentage of heavy truck trips.

Table 13: Broadway – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name and Truck Type	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Broadway (Medium Trucks)	2107	1866	237	4210	50%	44%	6%
Broadway (Heavy Trucks)	63	102	24	190	33%	54%	13%

The signalized intersection at Tonnelle Avenue showed congested conditions and low speeds in the eastbound direction during the morning peak hour only.



Figure 17: Broadway between US Route 1&9 Truck and Tonnele Avenue, Jersey City

Marin Boulevard between 6th Street and 12th Street, Jersey City

The Marin Boulevard corridor, shown in **Figure 18**, is 0.3 miles in length. It is classified as a two-lane urban minor arterial and provides a connection between Downtown Jersey City and the Holland Tunnel. The section between 6th Street and 12th Street was flagged as congested in the NJRTM-E. INRIX showed significant medium truck volume but minimal heavy truck volumes as shown in **Table 14**. Not surprisingly, one-half of medium trucks are traveling to or from New York City via the Holland Tunnel. As discussed earlier, heavy trucks are banned from the Holland Tunnel.

Table 14: Marin Boulevard – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name and Truck Type	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Marin Boulevard (Medium Trucks)	232	216	21	469	49%	46%	4%
Marin Boulevard (Heavy Trucks)	1	1	0	2	33%	67%	0%

INRIX showed very slow travel speeds between 6th Street and 12th Street (Holland Tunnel). Corridor improvements to accomplish the proposed new development, based on a Complete Streets approach, are currently being developed for Jersey City and the NJTPA. Any additional improvements to this corridor should only be considered once the planned development and Complete Streets improvements have been implemented.

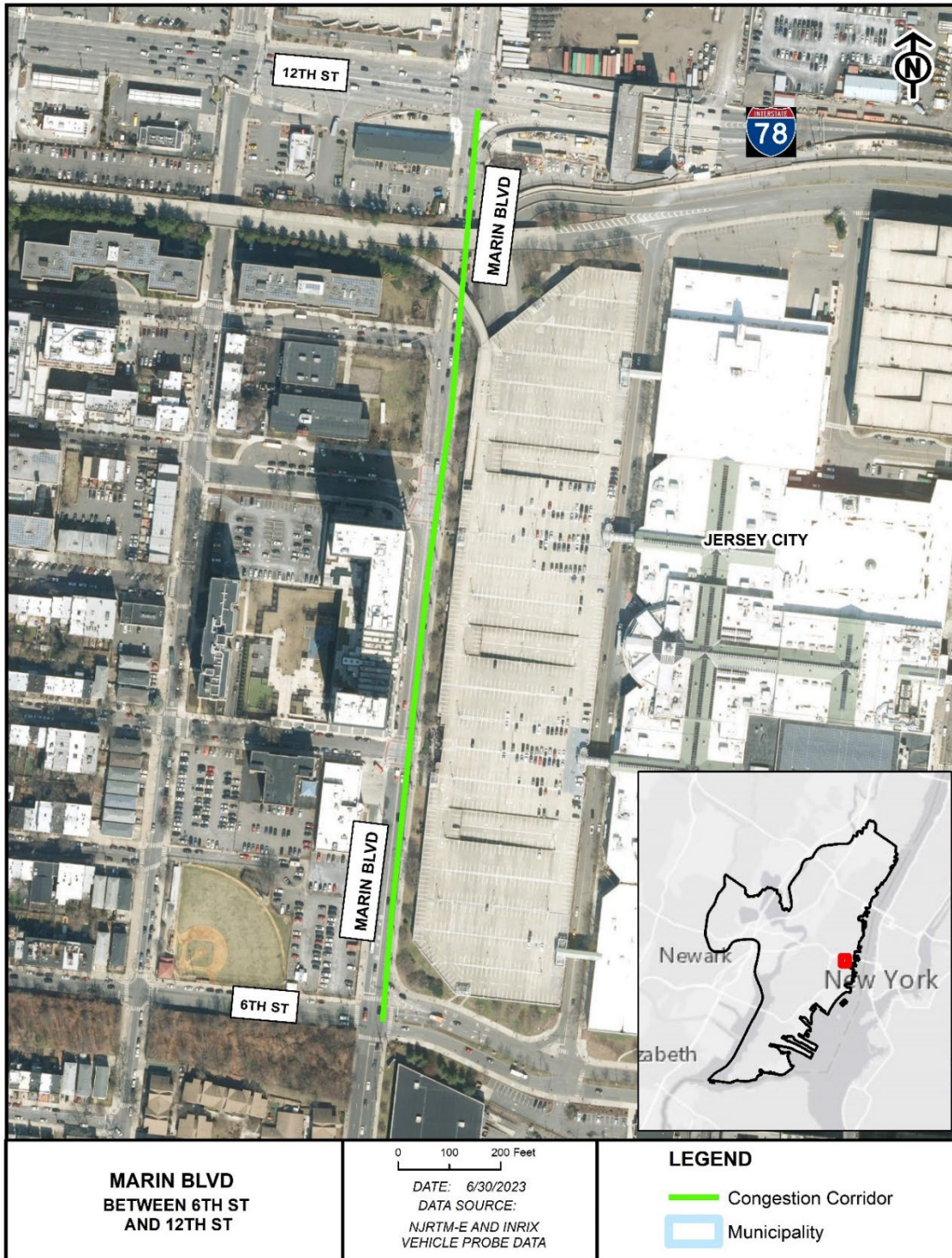


Figure 18: Marin Boulevard between 6th Street and 12th Street, Jersey City

Bergenline Avenue between 60th Street and John F. Kennedy Boulevard East, North Bergen and West New York

The Bergenline Avenue corridor extends 1.6 miles between 60th Street and John F. Kennedy Boulevard East and is shown in **Figure 19**. Between 60th Street and 79th Street, Bergenline Avenue is the center of the North Bergen and West New York commercial districts with small retail businesses lining both sides of the street. In this section, Bergenline Avenue operates with one through lane in each direction with parallel parking on both sides of the street. Between 79th Street and John F. Kennedy Boulevard East, Bergenline Avenue forms the western boundary of the James J. Braddock Hudson County Park. In this northern section, Bergenline Avenue operates with one through lane in each direction with parallel parking in the southbound direction and angled parking adjacent to the park. Throughout the corridor, Bergenline Avenue serves both local buses traveling to and from the Hoboken Terminal and Journal Square as well as interstate buses traveling to and from the Bus Terminals in Manhattan.

INRIX showed low medium truck volumes between 60th and 76th Streets and much higher truck volumes north of 76th Street. Heavy truck volumes were minimal in both segments. South of 76th Street, trucks are primarily local. North of 76th Street, close to two-thirds of trucks are traveling between Hudson and Bergen Counties. The estimated truck volumes for the two segments are shown in **Table 15**.

Table 15: Bergenline Avenue – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name	Daily Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Medium Trucks							
Bergenline Avenue - 60 th Street – 76 th Street	74	47	3	123	60%	38%	2%
Bergenline Avenue – North of 76 th Street	77	344	33	454	17%	76%	7%
Heavy Trucks							
Bergenline Avenue - 60 th Street – 76 th Street	1	0	0	1	100%	0%	0%
Bergenline Avenue – North of 76 th Street	1	1	1	2	33%	33%	33%

INRIX showed that travel conditions are generally uncongested during the morning peak period when retail traffic volumes are low. However, beginning at 10 AM in both directions, and extending through the evening peak period until 7 PM, vehicles typically travel at average speeds of 10 mph or less in both directions.

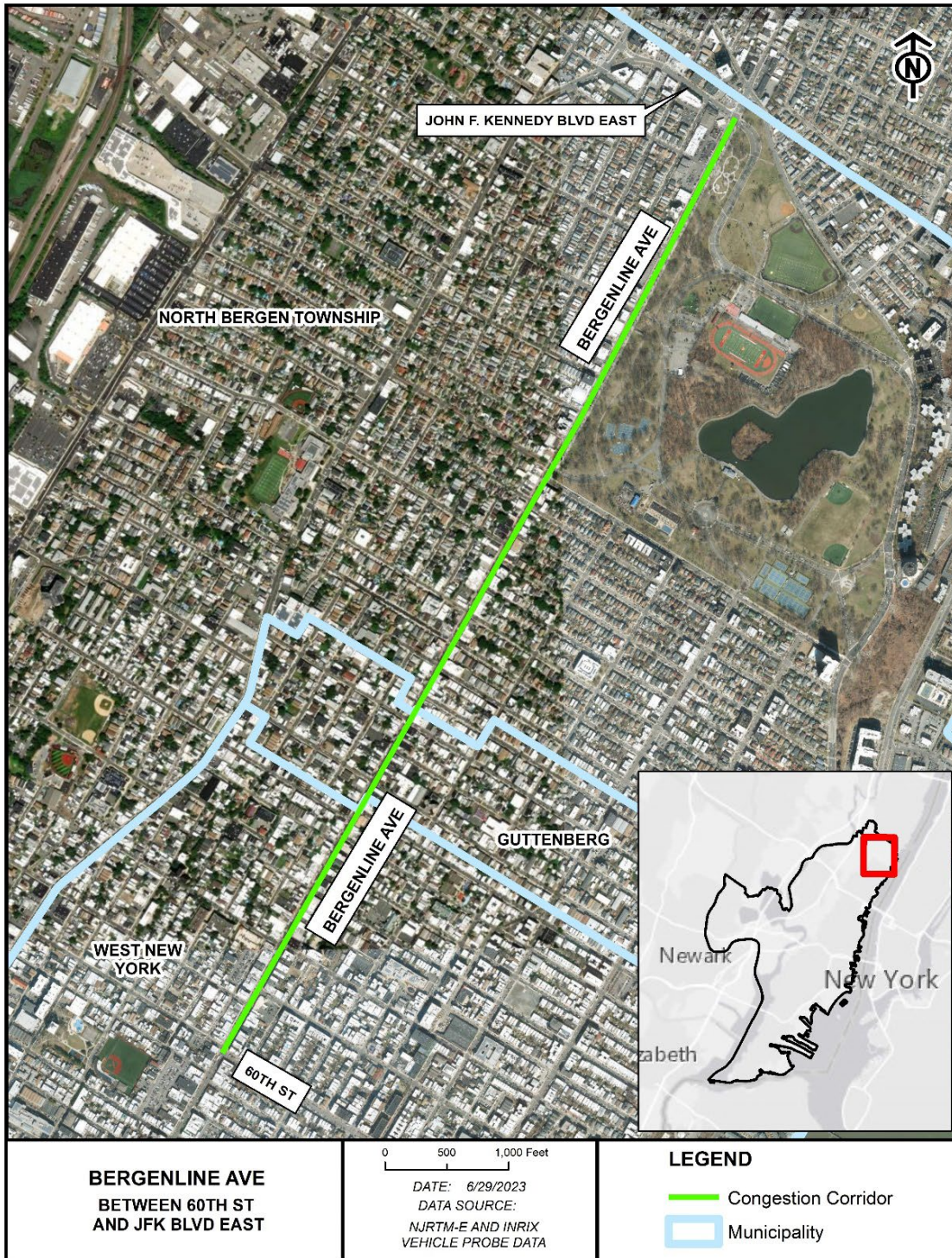


Figure 19: Bergenline Avenue between 60th Street and John F. Kennedy Boulevard East, North Bergen and West New York

County Avenue / New County Road between Paterson Plank Road (CR 681) and Seaview Drive, Secaucus

The County Avenue / New County Road corridor, shown in **Figure 20**, is 2 miles in length and provides a connection between the warehouse areas of Secaucus with the New Jersey Turnpike and NJ 3. Medium and heavy truck volumes along County Avenue / New County Road were previously presented and are both very high as shown in **Table 16**. Local trips are one-half of medium truck trips but less than one-quarter of heavy truck trips. An additional one-third of all medium and heavy truck trips are traveling between Secaucus and the NJTPA region, but there is a significant percentage traveling between the Croxton Intermodal Terminal and neighboring states to the north, south and west including New York and Pennsylvania.

Table 16: County Avenue– Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name	Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Medium Trucks							
County Avenue	1185	595	33	1813	65%	33%	2%
County Avenue	814	1807	109	2730	30%	66%	4%
County Avenue	2097	2242	148	4487	47%	50%	3%
Heavy Trucks							
County Avenue	87	310	37	433	20%	72%	9%
County Avenue	95	283	55	433	22%	65%	13%
County Avenue	103	269	37	408	25%	66%	9%

County Avenue was flagged in the NJRTM-E as congested, but INRIX generally showed uncongested conditions except at the section between the signalized intersections at Secaucus Road and the UPS Driveway.



Figure 20: County Avenue / New County Road between Paterson Plank Road (CR 681) and Seaview Drive, Secaucus

Park Avenue between 19th Street and Pleasant Avenue, Weehawken

The Park Avenue corridor, shown in **Figure 21**, is 0.7 miles in length and provides a connection between the Lincoln Tunnel and NJ 495 with Hoboken to the south and Union City and West New York to the north. Truck volumes along Park Avenue are modest as shown in **Table 17**. Most truck trips are local with both ends of the trip within Hudson County.

Table 17: Park Avenue – Medium and Heavy Trucks by Trip Type (Source: INRIX)

Segment Name	Truck Trips				Percentage of Trips		
	Local (I-I)	I-X and X-I	Through (X-X)	Total	Local (I-I)	I-X and X-I	Through (X-X)
Park Avenue (Medium Trucks)	136	28	3	167	81%	17%	2%
Park Avenue (Heavy Trucks)	0	0	0	0	0%	0%	0%

INRIX also showed congested conditions in both directions near the Lincoln Tunnel / NJ 495 local access ramps only. Congestion was observed during both the morning and evening peak periods.

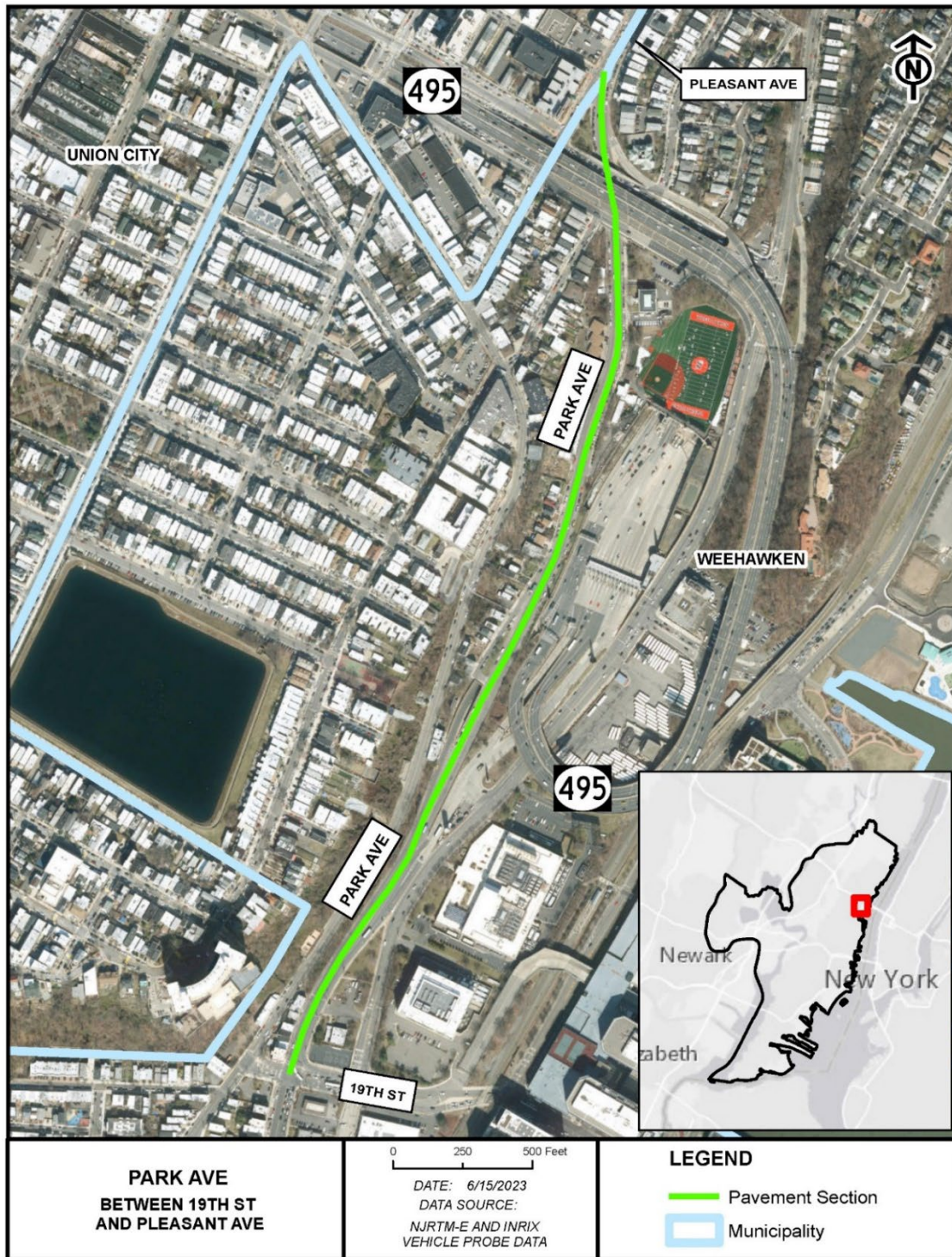


Figure 21: Park Avenue between 19th Street and Pleasant Avenue, Weehawken

Safety

Five roadway corridor segments with a high number of truck crashes were selected for further analysis and the development of recommendations. An initial list was developed consisting of all road segments with twenty or more truck crashes identified through the NJDOT Safety Voyager database for the period January 2017 to December 2021. The five-year period, rather than the typical three-year period that is generally used for crash analysis, was selected for two reasons. First, both truck crashes and pedestrian/bicyclist crashes are relatively rare events, so more years of data is desirable for the analysis. Second, the impacts of the pandemic resulted in unusual conditions with reduced traffic volumes beginning in 2020 and continuing through today in portions of Hudson County. The number and type of crashes are influenced by traffic volumes, congestion and speed. From initial list, segments that were part of recent safety analysis or other improvement studies conducted by the NJTPA or NJDOT were not considered further. The list was pared down further by removing those corridors that were already selected for further analysis and development of recommendations due to congestion. The resulting five roadway corridors are listed below in **Table 18** and highlighted in **Figure 22**.

Each of the five roadway corridors include both signalized and unsignalized intersections. The number of total crashes, truck crashes and pedestrian/bicyclist crashes are summarized in **Table 19**. As shown in the table, the crash rate for John F. Kennedy Boulevard is the highest at 29.44 crashes per million vehicle-miles of travel (MVMT); and the crash rate for County Avenue is the lowest at 6.53 crashes per MVMT. County Avenue has a similar number of truck crashes as Paterson Plank Road, however it has a much lower crash rate due to the higher MVMT. Note that the statewide average crash rates are for total crashes only. There are no statewide average crash rates for truck or pedestrian/bicyclist crashes.

Table 18: High Truck Crash Corridors

Roadway Name	Between	And	MP	Municipality
John F. Kennedy Boulevard	21 st Street	42 nd Street	33.5-34.6	Union City / North
Harrison Avenue/ Newark-Jersey City	Bergen Avenue	I-280 Interchange	13.9-14.4	Jersey City
County Avenue	Secaucus Road	UPS Drive / Turnpike Entrance	2.0-2.5	Secaucus
Paterson Plank Road	2 nd Street	11 th Street	2.0-2.5	Union City
Paterson Plank Road	Columbia Avenue	Penhorn Avenue	3.5-3.9	North

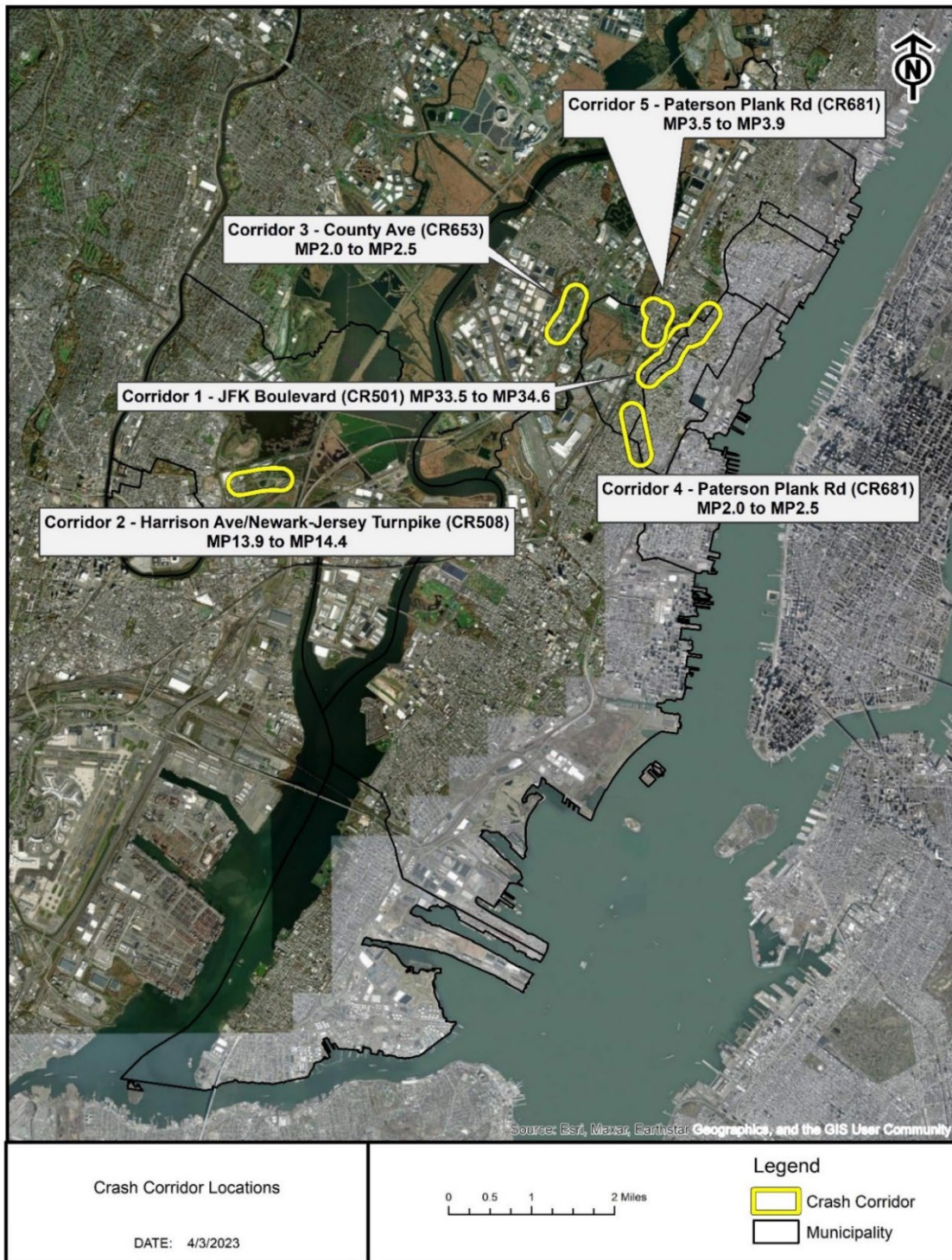


Figure 22: Crash Corridor Locations

Table 19: Number of Crashes and Crash Rates by Corridor

Corridor	Corridor Name	Total	Truck	Pedestrian / Bicyclist	Total Crash Rate [crashes per MVMT]	Statewide Average Rate [crashes per MVMT]
1	John F. Kennedy Boulevard, 20 th Street to 43 rd Street, MP 33.5 to 34.6, North Bergen and Union City	597	55	41	29.44	7.82
2	Harrison Avenue, Bergen Avenue to I-280 Ramps, MP 13.9 to 14.4, Kearny	132	63	1	10.91	3.09
3	County Avenue, Secaucus Road to Turnpike Entrance Ramp, MP 2.0 to 2.5, Secaucus	97	28	4	6.53	7.82
4	Paterson Plank Road, Central Avenue/3 rd Street to 11 th Street, MP 2.0 to 2.5, North Bergen, Union City and Jersey City	149	26	10	27.06	4.07
5	Paterson Plank Road, Columbia Avenue to West Side Avenue MP 3.5 to 3.9, North Bergen	215	38	0	19.32	4.07

Overrepresented crash types and environmental conditions (surface and light) were identified for each corridor and are summarized in **Table 20**.

Table 20: Overrepresented Crash Types and Pavement / Environmental Conditions by Corridor

Corridor	Corridor Name	Overrepresented Crash Types		Overrepresented Pavement and Environmental Conditions		
		Total	Truck	Total	Truck	Pedestrian / Bicyclist
1	John F. Kennedy Boulevard, MP 33.5 to 34.6	Rear End, Sideswipe, Parked Vehicle, Backing, Pedestrian	Sideswipe, Parked Vehicle, Fixed Object	None	Daylight	Wet, Snow, Daylight
2	Harrison Avenue / Newark-Jersey City Turnpike MP 13.9 to 14.4	Sideswipe	Sideswipe	Night	None	None
3	County Avenue, MP 2.0 to 2.5	Sideswipe, Left Turn	Sideswipe, Left Turn, Pedestrian	None	Wet	Wet, Night
4	Paterson Plank Road, MP 2.0 to 2.5	Parked Vehicle, Backing	Parked Vehicle, Backing, Opposite Direction Sideswipe	None	Day, Dry	Night
5	Paterson Plank Road, MP 3.5 to 3.9	Sideswipe	Sideswipe, Backing	None	Day	None

As shown in the table, same direction sideswipe crashes are disproportionately higher for four of the five corridors for both truck crashes and all vehicle crashes. The specific crash types will be used to identify both the causes as well as potential safety solutions.

Corridor 1: John F. Kennedy Boulevard MP 33.5 to 34.6, Union City and North Bergen Township

This 1.1-mile section of John F. Kennedy Boulevard is an urban principal arterial with closely spaced signalized intersections and access to NJ 495 and serves as the municipal boundary between Union City and North Bergen Township. The locations of truck crashes in the corridor are shown in **Figure 23**. Signalized intersections include 20th Street, 21st Street, 22nd Street, 23rd Street, 24th Street, 26th Street, 27th Street, 30th Street, 31st Street, 32nd Street (CR 691), 36th Street, 37th Street, 38th Street, 39th Street, 40th Street, 41st Street, 42nd Street and 43rd Street. This section of John F. Kennedy Boulevard also includes NJ 495. At the interchange with NJ 495, between 27th Street and 32nd Street, there is a bypass roadway with a single lane in each direction. John F. Kennedy Boulevard is two lanes in each direction with a pavement width of 60 feet and no median or shoulders. Parking is generally permitted on both sides of the street south of 23rd Street; and on the southbound side between 24th Street and 26th Street. Parking is prohibited north of 26th Street.

The most common crash types are same direction sideswipes, same direction rear end, and parked vehicles. These three crash types collectively account for about three-quarters of both truck and all vehicle crashes – almost double the statewide average. Many of these crashes can be attributed to narrow lanes, high truck volumes and on-street parking. The number of pedestrian and bicyclist crashes is also much higher than the statewide average. Surface and light conditions are consistent with statewide averages.

If all crashes are considered, over 90 percent of the same direction sideswipe and the same direction rear end crashes were within or on an approach to a signalized intersection. Of the 223 same direction sideswipe crashes identified from Safety Voyager, only 14 occurred 100 feet or more from a signalized intersection. Similarly, only 11 of 170 same direction rear end crashes occurred 100 feet or more from a signalized intersection. The results were similar for truck crashes. Of the 29 same direction sideswipe and rear end crashes, only two crashes occurred 100 feet or more from a signalized intersection.

Corridor 2: Harrison Avenue / Newark – Jersey City Turnpike MP 13.9 to 14.4, Kearny

This 0.5-mile section of Harrison Avenue and Newark – Jersey City Turnpike is an urban minor arterial centered on the I-280 interchange in Kearny and includes the signalized intersection at Bergen Avenue. Harrison Avenue / Newark – Jersey City Turnpike in this area includes two 12-foot lanes in each direction and 10-foot shoulders. The locations of truck crashes in the corridor are shown in **Figure 24**.

The most common crash types are sideswipe crashes for both trucks and all vehicles. There are two high crash locations within the corridor including the signalized intersection of Harrison Avenue and Bergen Avenue; and the eastbound weaving section between the I-280 entrance and exit ramps. A Highway Safety Manual (HSM) analysis, also included in **Appendix C**, was completed for this corridor only to evaluate several countermeasures to reduce crashes and improve safety at both locations. Surface conditions are consistent with statewide averages, however night crashes are above average.

Corridor 3: County Avenue MP 2.0 to 2.5, Secaucus

This 0.5-mile section of County Avenue is an urban minor arterial located between signalized intersections at Secaucus Road to the southwest and Paterson Plank Road to the northeast. It is a heavily traveled truck corridor that includes an additional signalized intersection at the UPS facility and an entrance ramp to the NJ Turnpike Eastern Spur southbound. County Avenue in this area includes four lanes with pavement width of only 41 feet and no median or shoulders. The locations of truck crashes in this corridor are shown in **Figure 25**.

The most common crash types are same direction rear end and same direction sideswipe accounting for more than two-thirds of all vehicle and truck crashes. Most crashes occur at the intersection of County Avenue and Secaucus Road as well as in the area between the UPS driveway and the NJ Turnpike entrance ramp.

Corridor 4: Paterson Plank Road MP 2.0 to 2.5, Union City

This 0.5-mile section of Paterson Plank Road is an urban minor arterial located in Union City. It includes signalized intersections at Central Avenue / 3rd Street, Hague Avenue / Central Avenue, 4th Street, 5th Street, 6th Street, Summit Avenue, 7th Street, 8th Street, John F. Kennedy Boulevard, and 10th Street. Paterson Plank Road in this area generally includes two travel lanes plus parallel parking on one or both sides. The pavement width varies from 33 to 38 feet and there is no median or shoulders.

The most common crash types are parked vehicles and same direction rear end accounting for almost half of all vehicle and truck crashes. For truck crashes, opposite direction sideswipe are also overrepresented. The locations of truck crashes in the corridor are shown in **Figure 26**.

This corridor also had four pedestrian and six bicyclist crashes including one pedestrian crash that involved a truck. Of these 10 crashes, three occurred at the 3rd Street / Central Avenue / Leonard Street intersection; and two occurred at the John F. Kennedy Boulevard / 8th Street intersection. The other five were spread across four different intersections.

Corridor 5: Paterson Plank Road MP 3.5 to 3.9, North Bergen Township

This 0.4-mile section of Paterson Plank Road is an urban minor arterial located in North Bergen Township. It includes the NJ 495 interchange as well as signalized intersections at Columbia Avenue, Liberty Avenue, the US Route 1&9 southbound ramp, Union Turnpike / US Route 1&9 northbound ramp, 5th Street, and West Side Avenue. Most crashes occur in the section between the signalized intersections at the US Route 1&9 southbound ramp and the Union Turnpike / US Route 1&9 northbound ramps. In this area, Paterson Plank Road includes six lanes with a pavement width of 76 feet and no median or shoulders.

The most common crash types are same direction sideswipe and same direction rear end, accounting for 80 percent of all vehicle crashes as well as 65 percent of truck crashes. Same direction sideswipe was the most prevalent, accounting for approximately half of all truck crashes. There were no pedestrian or bicyclist crashes reported in the corridor. The locations of truck crashes in the corridor are shown in **Figure 27**. The intersection of Paterson Plank Road and West Side Avenue had had 44 total crashes or about one-third of all crashes in the corridor as well as nine truck crashes, again about one-fourth of all truck crashes in the corridor.

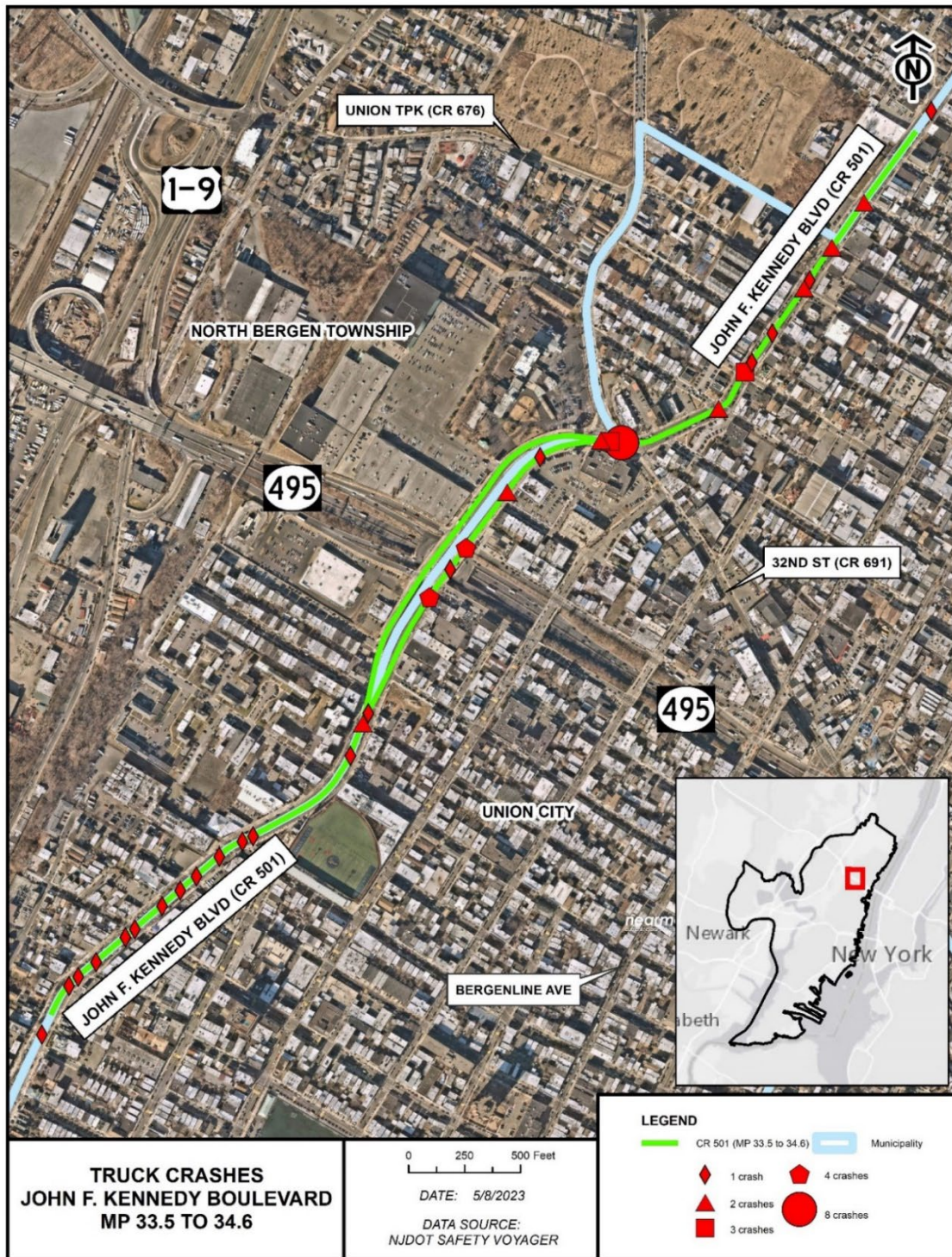


Figure 23: John F. Kennedy Boulevard MP 33.5 to 34.6 Truck Crash Locations

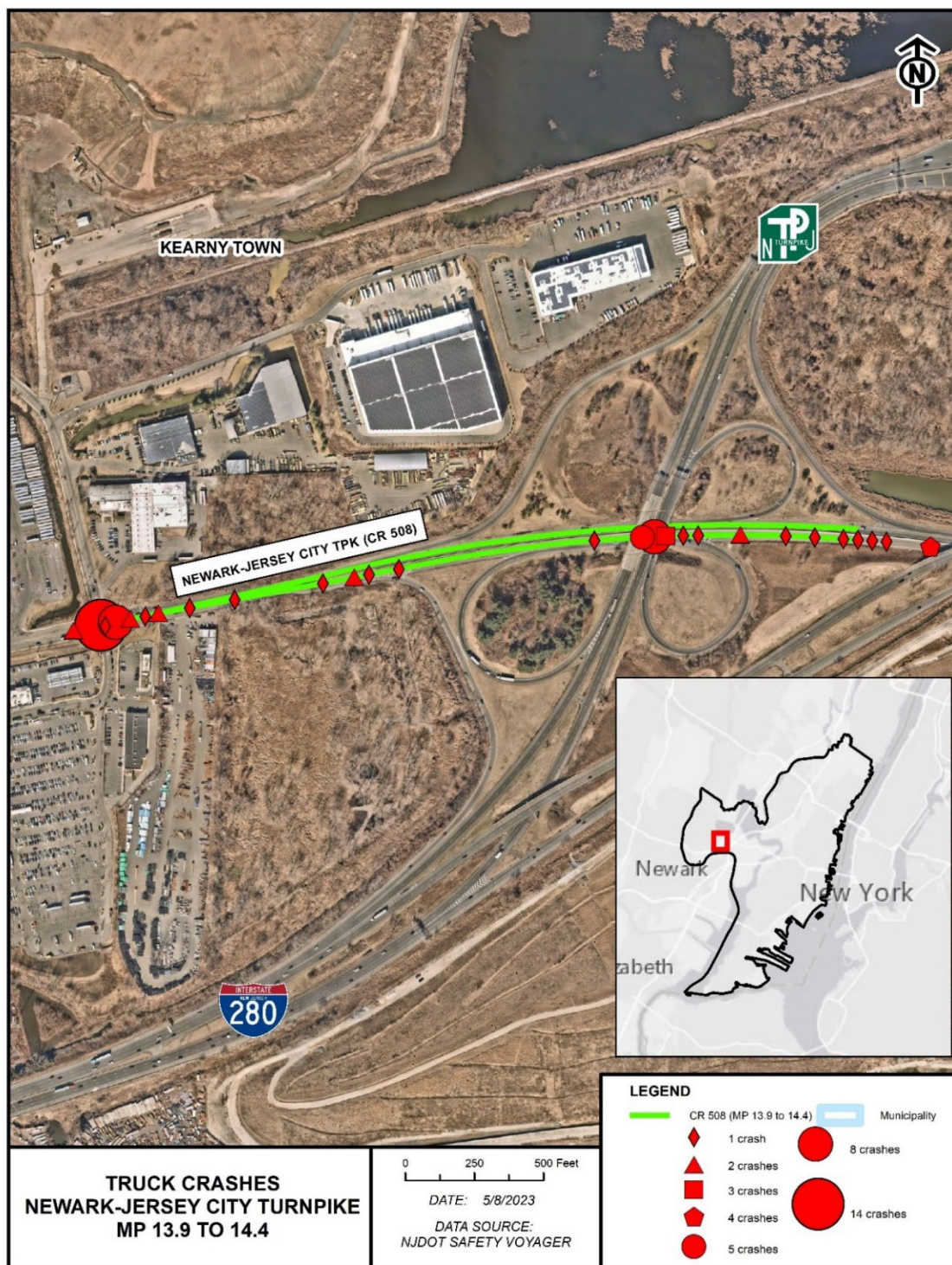


Figure 24: Harrison Avenue and Newark – Jersey City Turnpike MP 13.9 to MP 14.4
Truck Crash Locations



Figure 25: County Avenue MP 2.0 to 2.5, Secaucus Truck Crash Locations



Figure 26: Paterson Plank Road MP 2.0 to 2.5 Truck Crash Locations

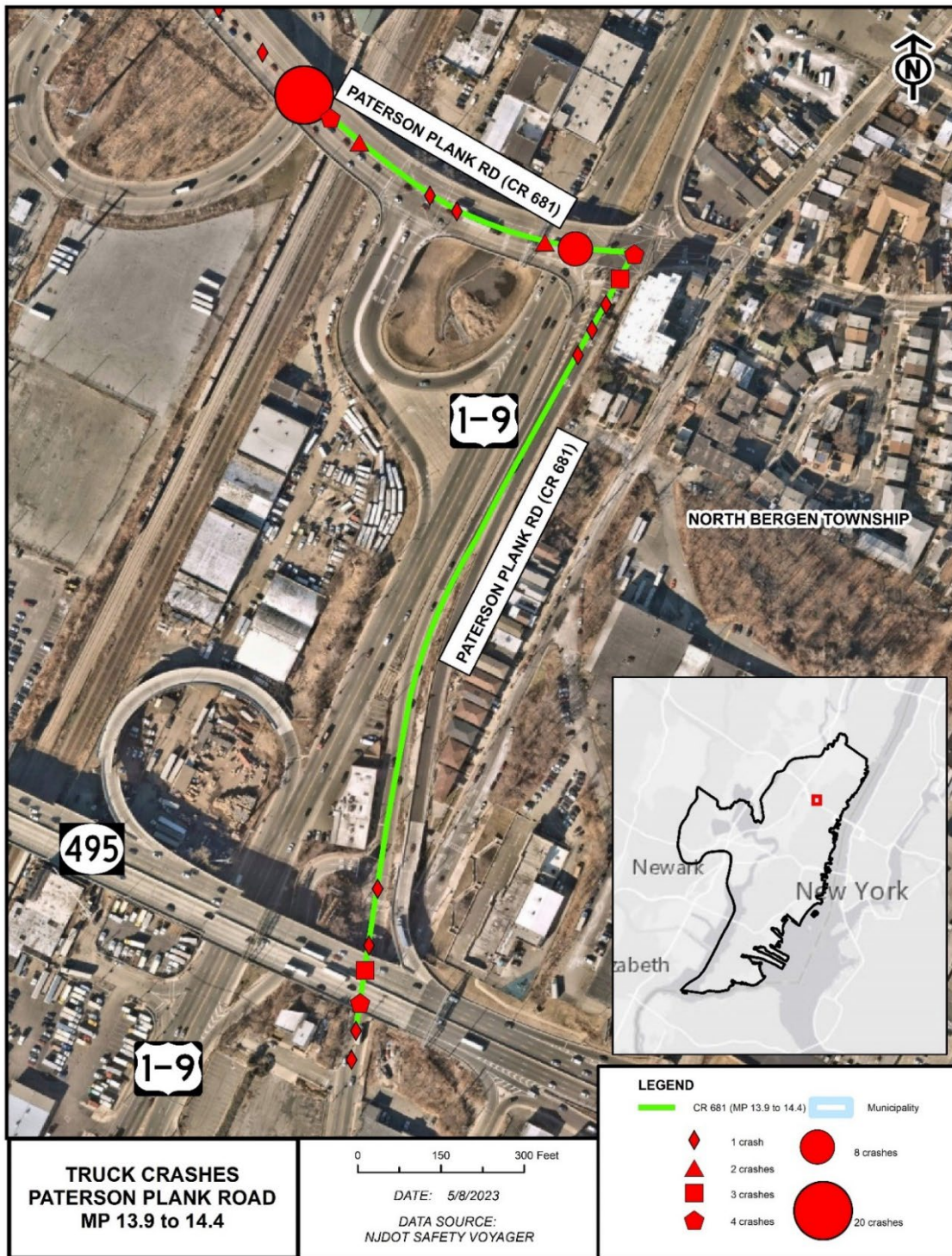


Figure 27: Paterson Plank Road MP 3.5 to 3.9 Truck Crash Locations

Bridges

NJDOT's CombIS database was used to collect data on all 30 vehicular bridges, four pedestrian bridges and one culvert owned by Hudson County and the three Passaic River Bridges owned by Essex County and Hudson County.

From the CombIS database, information was retrieved regarding the NHS network, structural deficiency (superstructure: the main part of the bridge that bears the weight of the load, sub-structure: the part of the bridge that transfers the structural load to the foundation, and roadway deck); percent heavy vehicles; and height, weight, and width restrictions. All bridges noted as deficient were selected for further analysis.

Mobility and Efficiency

As discussed in the Data Analysis Section, INRIX data was used to derive daily medium and heavy truck volumes and travel patterns. The INRIX probe and waypoint data provides the ability to compute both area-based and link-based truck flows. The highest levels of heavy truck activity correspond to the locations of intermodal freight facilities including GCT in Bayonne, NS Croxton Yard in Jersey City, and CSX facilities in Kearny and North Bergen.

Travel patterns for medium and heavy trucks entering and exiting intermodal facilities within Hudson County were reviewed. The five intermodal facilities identified through the LoadMatch database are repeated below and highlighted in **Figure 28**:

- GCT, Bayonne
- CSX Rail Yard, Kearny
- CSX Rail Yard, North Bergen
- NS Croxton Rail Yard – Jersey City
- Evans Delivery Company, Kearny

Truck travel patterns entering and exiting Global Container Terminal (GCT) in Bayonne are shown in **Figure 29**. As shown in the figure, most medium and heavy trucks use NJ Route 440 or the Turnpike Hudson County Extension. However, some trucks use Danforth Avenue and either John F. Kennedy Boulevard or Garfield Avenue, likely to avoid congestion, and/or access to and from GCT. Improved signage and enforcement should be considered to prevent trucks from using these local streets.

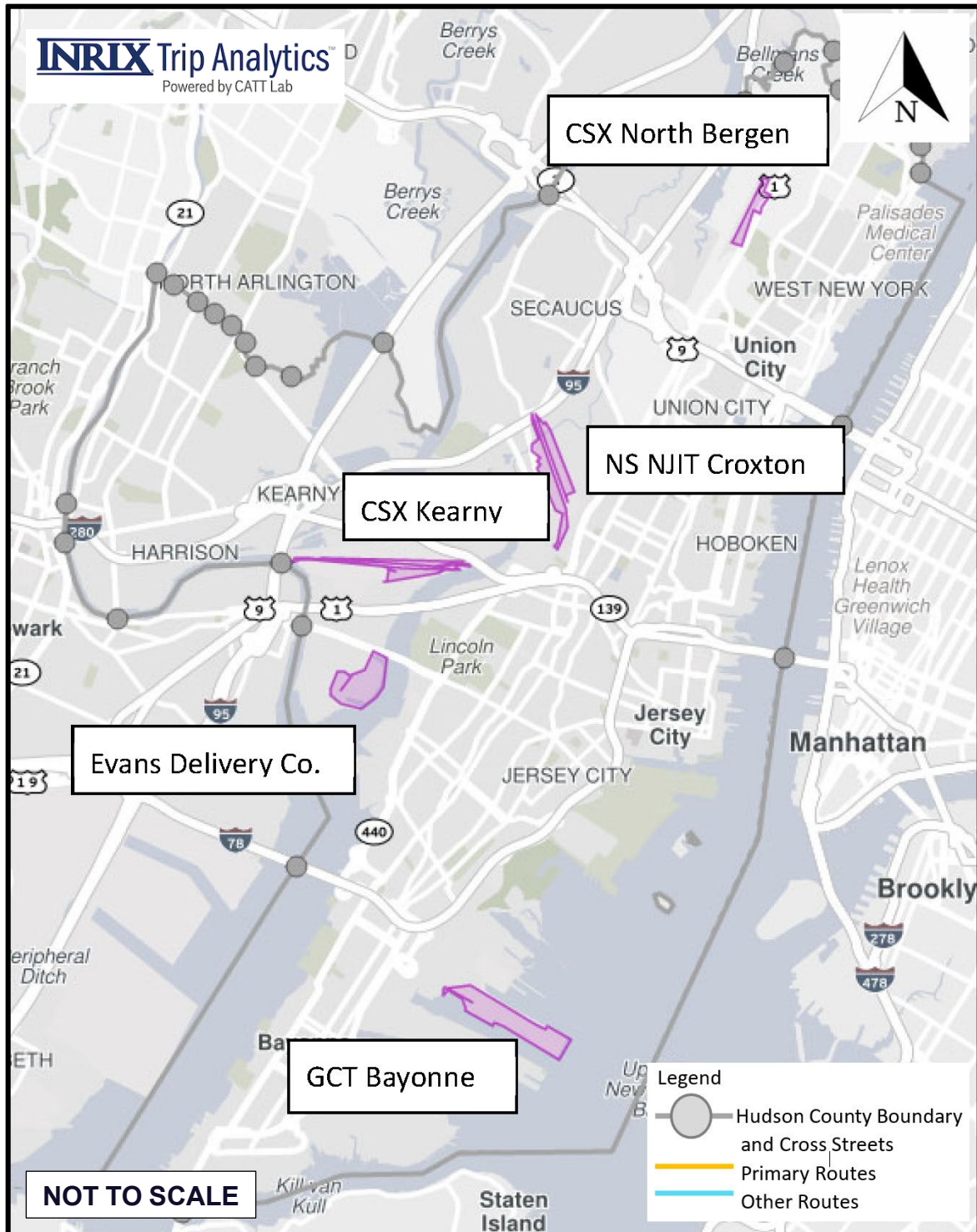
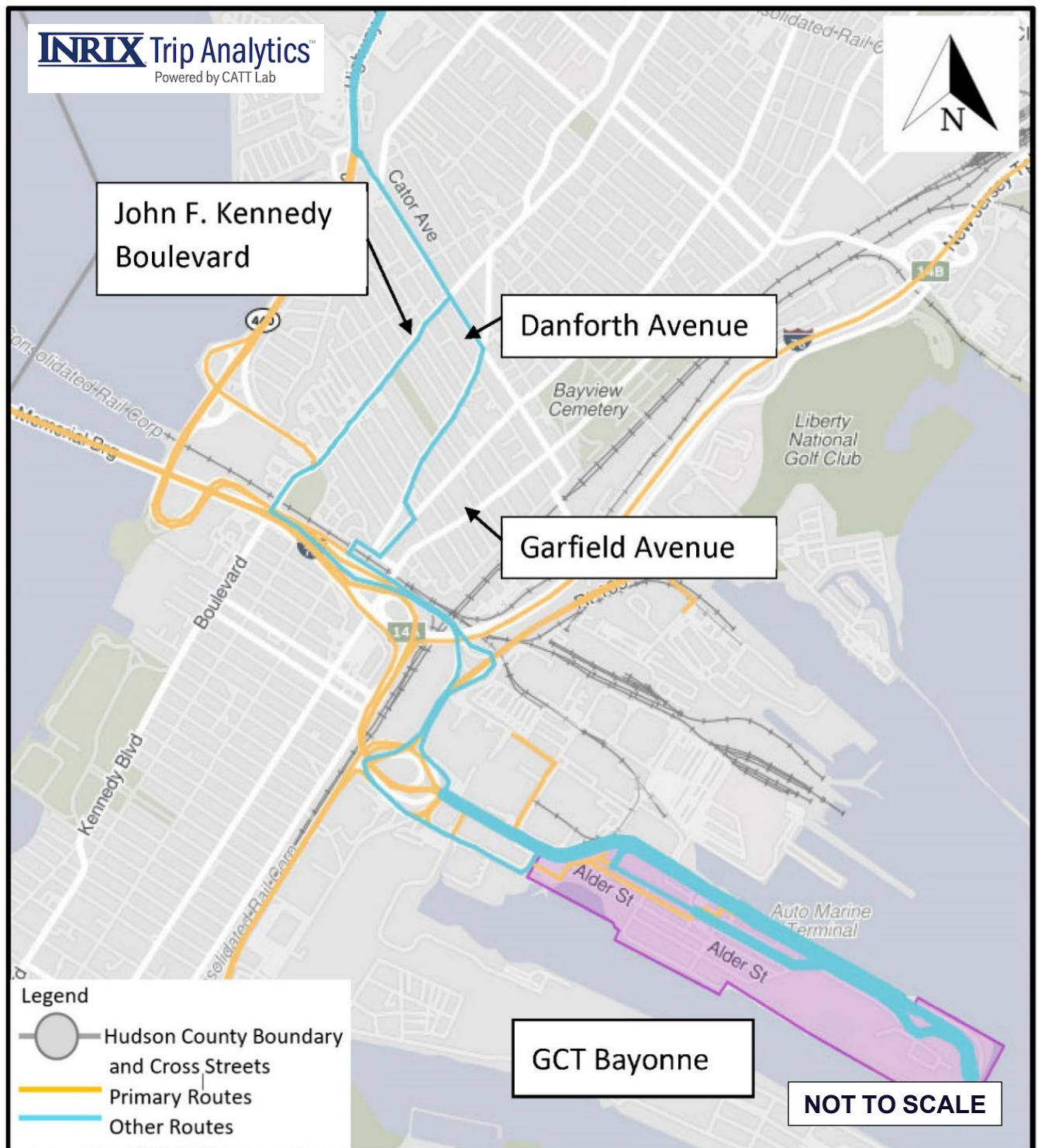


Figure 28: Major Intermodal Facilities in Hudson County (Source: INRIX, 2022)

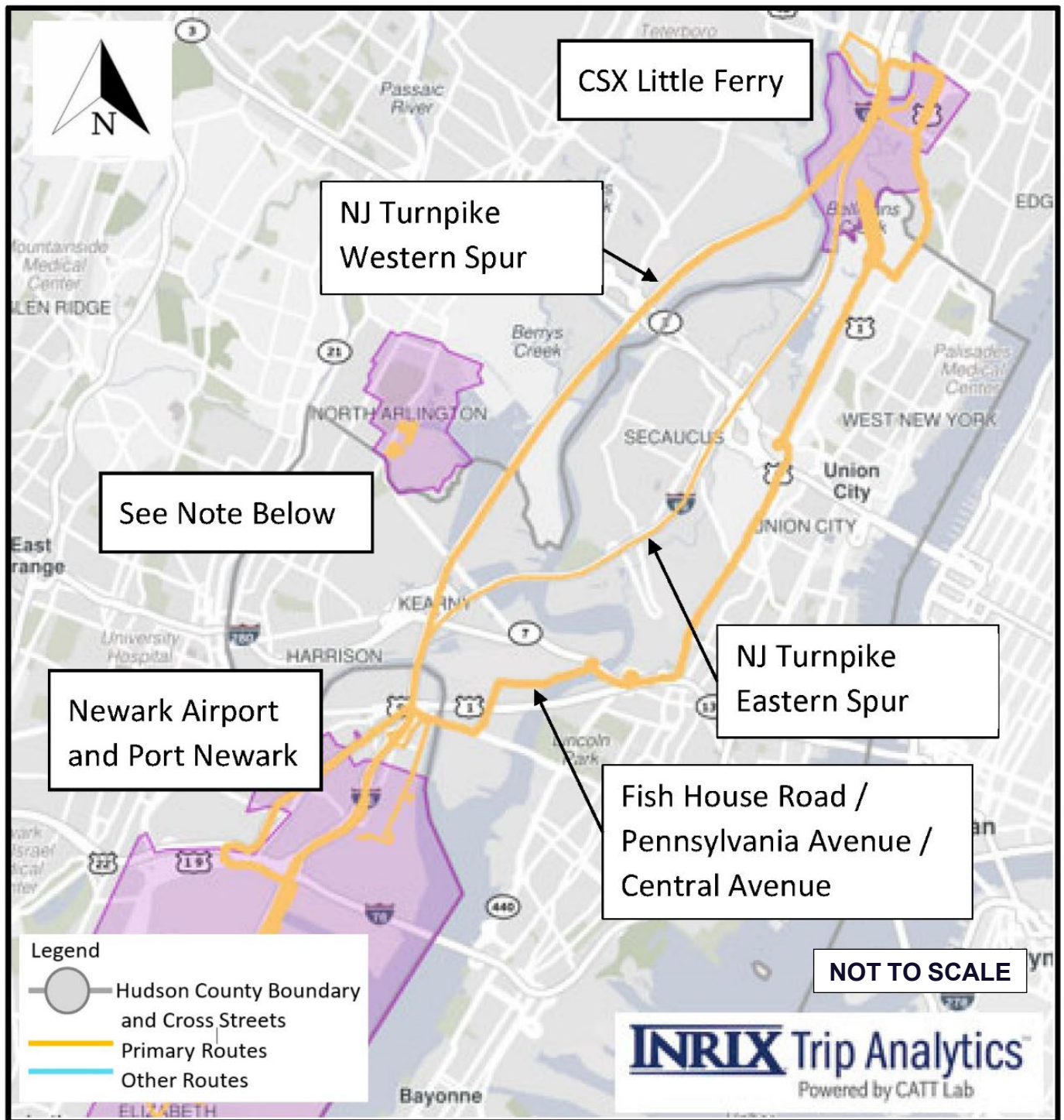


**Figure 29: Truck Travel Patterns Entering and Exiting GCT, Bayonne
(Source: INRIX, 2022)**

Truck travel patterns entering and exiting North Bergen including the CSX North Bergen intermodal facility are shown in **Figure 30**. As shown in the figure, trucks use Fish House Road / Pennsylvania Avenue / Central Avenue as an alternative to the Turnpike. These trucks are likely avoiding the toll to travel on the Turnpike. Truck tolls (Class 6) between Interchange 14 (I-78) and Interchange 16E/18E (Route 3) are \$12 to \$13 depending on toll type and peak vs. off-peak. These tolls translate to close to two dollars per mile and would certainly discourage truck use when travel time via the alternative route is not onerous. For the Turnpike, the higher tolls for large trucks pay for the increased infrastructure impacts (pavement and bridges) that the trucks cause. However, for the County roadway network, these additional costs must be borne by County residents, businesses, and other users of the transportation network.

US Route 1&9 (Tonnelle Avenue) is the preferred route for both medium and heavy trucks traveling to, from and through North Bergen as shown in **Figure 31**. Many trucks, however, currently use West Side Avenue as an alternative route if they are bound for local destinations. However, US Route 1&9 (Tonnelle Avenue) is adjacent to a mix of land uses including residential and the Hudson Bergen Light Rail Station. In contrast, West Side Avenue is adjacent to industrial land uses only. The designation of West Side Avenue as the through and local truck route between Paterson Plank Road and 83rd Street in North Bergen should be considered.

Medium and heavy truck trips traveling between Kearny and Newark use Frank E. Rodgers Boulevard and Kearny Avenue as their route as shown in **Figure 32**. Schuyler Avenue is an alternative route, however both routes are adjacent to mixed land uses including residential. The presence of large numbers of trucks on Frank E. Rodgers Boulevard has resulted in some of the worst truck crash locations in Hudson County. Again, this route selection appears to include trucks avoiding the Turnpike tolls.



**Figure 30: Truck Travel Patterns Entering and Exiting North Bergen
(Source: INRIX, 2022)**

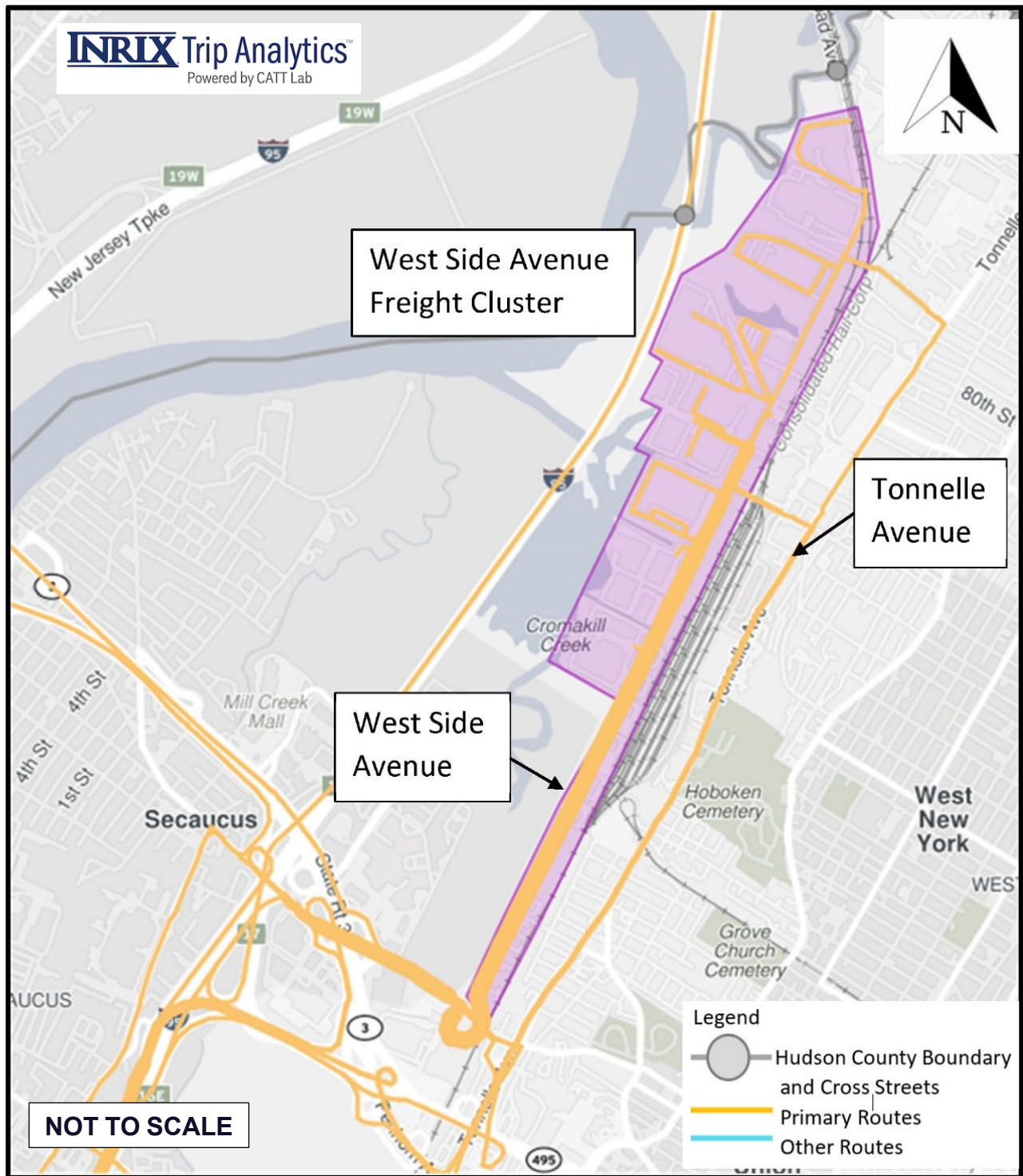


Figure 31: Truck Travel Patterns To and From West Side Avenue Corridor, North Bergen (Source: INRIX, 2022)



Figure 32: Truck Travel Patterns Through Kearny and Harrison (Source: INRIX, 2022)

Preferred Network and Industry Needs

The study team conducted an analysis of the truck travel network and truck parking needs within Hudson County. The analysis included review of commercial and truck travel patterns, case studies, regulations, and feedback from industry professionals. The following insights and strategies were noted.

Central Avenue/Pennsylvania Avenue/Fish House Road in Kearny and West Side Avenue in North Bergen should be considered for addition to the NJ Large Truck Access Network

- These corridors were noted as preferred truck routes (desire paths) based on data obtained from the INRIX Trip Analytics platform.
- Both routes run through industrial areas with no local residential communities
- Adding these routes to the truck network would help divert heavy truck volumes from vulnerable communities along US Route 1&9 Truck in Jersey City and US Route 1&9 (Tonnelles Avenue) in North Bergen. If fewer trucks traveled through these communities, it would reduce congestion, pollution, and pedestrian crash risk for residents.

Expansion of NJ Large Truck Access Network to other locations based on heavy truck trip origin and destination density is unnecessary and is likely to induce demand.

- Locations that should not be part of the Network but see above average truck volumes and would benefit from recurrent safety checks and pavement improvements include Secaucus Road, County Road, New County Road, Washington Street (Hoboken), Paterson Plank Road, Communipaw Avenue.

Truck parking in Hudson County is constrained

- There is high demand and limited land available for parking close to delivery points and destinations. Mobile apps for truck drivers help identify locations that are requested and used as viable parking and rest stops.
- Conversion of wide travel lanes within industrial areas to short-term parking for drivers to break and rest can increase parking supply in the short-term and lead to push for more privately operated rest stops and freight-supportive businesses to address the need for overnight parking. Changes to local ordinances may be necessary.

Technological solutions can address routing and parking problems while also establishing Hudson County as a regional innovator

- Particulate matter monitoring within vulnerable communities is a data-centered approach to measuring negative externalities from truck movements. The emissions data can provide feedback on how truck routes can meet NJTPA goals and can serve as a quantitative report to community members involved in truck route review processes.

- Parking availability detection, alternative fueling stations, and multi-use parking facilities (e.g., short driver breaks, overnight parking, micro-freight hubs) are potential adaptations to ensure truck parking facilities in the County meet future needs.

Equity Assessment

Introduction

Sustainability and equity are essential to all transportation initiatives in New Jersey and thus, are important focuses in the Hudson County Truck Routes Assessment. Equity refers to improving economic and social opportunities by improving access for underserved communities (i.e., low income, minority, etc.). Underserved communities have historically been disproportionately adversely impacted by new freeways as well as warehousing and industry. This analysis builds on the study's data collection and analyses with the purpose of better incorporating underserved communities, identifying, and addressing concerns, and making sure the benefits and adverse impacts of recommendations are shared as equitably as possible.

The equity analysis through this study focuses on the impacts of truck traffic, including noise, safety and emissions that are amplified based on the trucking volumes, in conjunction with an assessment of demographic and health indicators to identify areas that are negatively impacted by freight. The noise, emissions, and equity assessments are overlaid together to develop a community impact score for each Census Tract in Hudson County. Scores are applied to the transportation network and used as an additional factor to prioritize congested corridors, safety corridors, deficient bridges, and poor pavement corridors within areas that require increased attention. These corridors were previously presented, but not in a ranked order. The equity assessment takes it one step further by providing a ranking system based on the community impact score. Ultimately, this provided an additional tool for making sure the benefits and adverse impacts of recommendations are shared as equitably as possible.

Methodology

The community impacts assessment follows the methodology of NJTPA's Equity Analysis Tool, and estimates the impact of negative byproducts of trucking (emissions and noise) on underserved communities.⁴ The methodology generates a score for each of the indicators from 0 to 4. A score of 0 refers to minimal impact; a score of 4 refers to maximum impact, i.e., the

⁴ <https://equity-resources-njtpa.hub.arcgis.com/pages/equity-analysis-tool>

most vulnerable communities. The score calculation is determined by standard deviations relative to an indicator’s regional average. The region is defined as every Census Tract (2020) in Hudson County for the emissions and noise scores. The region is defined as every Census Tract (2020) in the NJTPA region for the equity score.

The indicators represented in the community impacts assessment metric are defined in **Table 21**, below.

Table 211: Indicators included in the community impacts assessment

Community Impact	Indicator	Definition	Source
Equity	Racial Minority	Percent of residents identifying as anything other than Non-Hispanic, White Only	US Census ACS (2016-2020)
	Female Population	Percent of population that is female	US Census ACS (2016-2020)
	Young Children	Percent of population under 5 years old	US Census ACS (2016-2020)
	Children	Percent of population 5-17 years old	US Census ACS (2016-2020)
	Elderly	Percent of population over 65 years old	US Census ACS (2016-2020)
	Poverty	Percent of families whose income in the past 12 months is below the poverty level	US Census ACS (2016-2020)
	Limited English Proficiency	Percent of population 5 years and over in which no one over the age of 14 speaks only English at home (or speaks English “very well” as a second language)	US Census ACS (2016-2020)
	Place of Birth	Percent of population that is foreign-born	US Census ACS (2016-2020)
	People with Disabilities	Percent of population that has a disability	US Census ACS (2016-2020)
	Zero Vehicle Households	Percent of households that do not have a vehicle available	US Census ACS (2016-2020)
	Education	Percent of individuals aged 25 years and over with less than high school degree	US Census ACS (2016-2020)
	Asthma	Current asthma prevalence among adults aged 18 years or older	PLACES: Local Data for Better Health (2020)

Community Impact	Indicator	Definition	Source
	Coronary Heart Disease	Coronary heart disease among adults aged 18 years or older	PLACES: Local Data for Better Health (2020)
	High Blood Pressure	High blood pressure among adults aged 18 years or older	PLACES: Local Data for Better Health (2020)
Emissions	Hydrocarbons (HC)	Vehicle emission totals (grams)	USEPA MOVES model
	Carbon Monoxide (CO)	Vehicle emission totals from exhaust (grams)	USEPA MOVES model
	Nitrogen Oxides (Nox)	Vehicle emission totals from exhaust (grams)	USEPA MOVES model
	Particulate Matter (PM 2.5)	Vehicle emission totals from exhaust, brakes, and tires (grams)	USEPA MOVES model
Noise	Noise	Anticipated noise levels for an average annual day (decibels)	National Transportation Atlas Database (NTAD)

The data for each of the indicators are split into five bins, with the following scores:

- well below average (score of 0)
- below average (score of 1)
- average (score of 2)
- above average (score of 3); and
- well above average (score of 4)

Note that the higher the equity score, the more vulnerable that population is relating to the conditions referenced in **Table 22** including income, language, and health barriers greater than those communities scoring 0, 1 or 2. Bin 2 for each indicator contains Census Tracts at or near (within a half standard deviation from) the regional average (mean) for that indicator. Bins 4, 3, 1, and 0 are then built out from the regional average. Bins 1 and 3 go another full standard deviation out from bin 2, and bins 0 and 4 contain any remaining Census Tracts further out from 1 or 3, respectively. **Figure 33** displays a map with the composite equity score. For the composite equity score, a high score of 3 (above average) or 4 (well above average) indicate a census tract facing more inequities based on the list of demographic and health indicators listed in **Table 22**. For example, a census tract with an equity score of 4 likely has a large

population of racial minority residents with limited English proficiency and higher rates of asthma and heart disease. A census tract with an equity score of 0 (well below average), on the other hand, is less likely face challenges from inequities and is likely a fairly wealthy, healthier, and less diverse group of residents. The standard deviations and corresponding scores for the emissions data are displayed in **Figure 34**. **Figure 35** displays a map with the composite emissions score.

The breakpoints for the noise data as measured in decibels (dBs) were set manually based on the following thresholds⁵:

- Acceptable Range of Outdoor Noise ≤ 65 dBs
- Normally Unacceptable Range of Outdoor Noise > 65 and ≤ 70 dBs
- Normally Unacceptable Range of Outdoor Noise > 70 and ≤ 75 dBs
- Unacceptable Range of Outdoor Noise > 75 dBs

Most Census Tracts fall in the 65 to 75 dBs range which is defined by the US Department of Housing and Urban Development (HUD) as the “normally unacceptable” range. To be consistent with the 1 to 4 scale used for other measures, this range was split in two. Census Tracts received a score of 1 to 4 based on their greatest noise value, ranging from acceptable to unacceptable. No location has a score of 0, as there is no Census Tract without noise. A map of the Census Tracts in Hudson County scored by noise is displayed in **Figure 36**.

⁵ <https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control/>

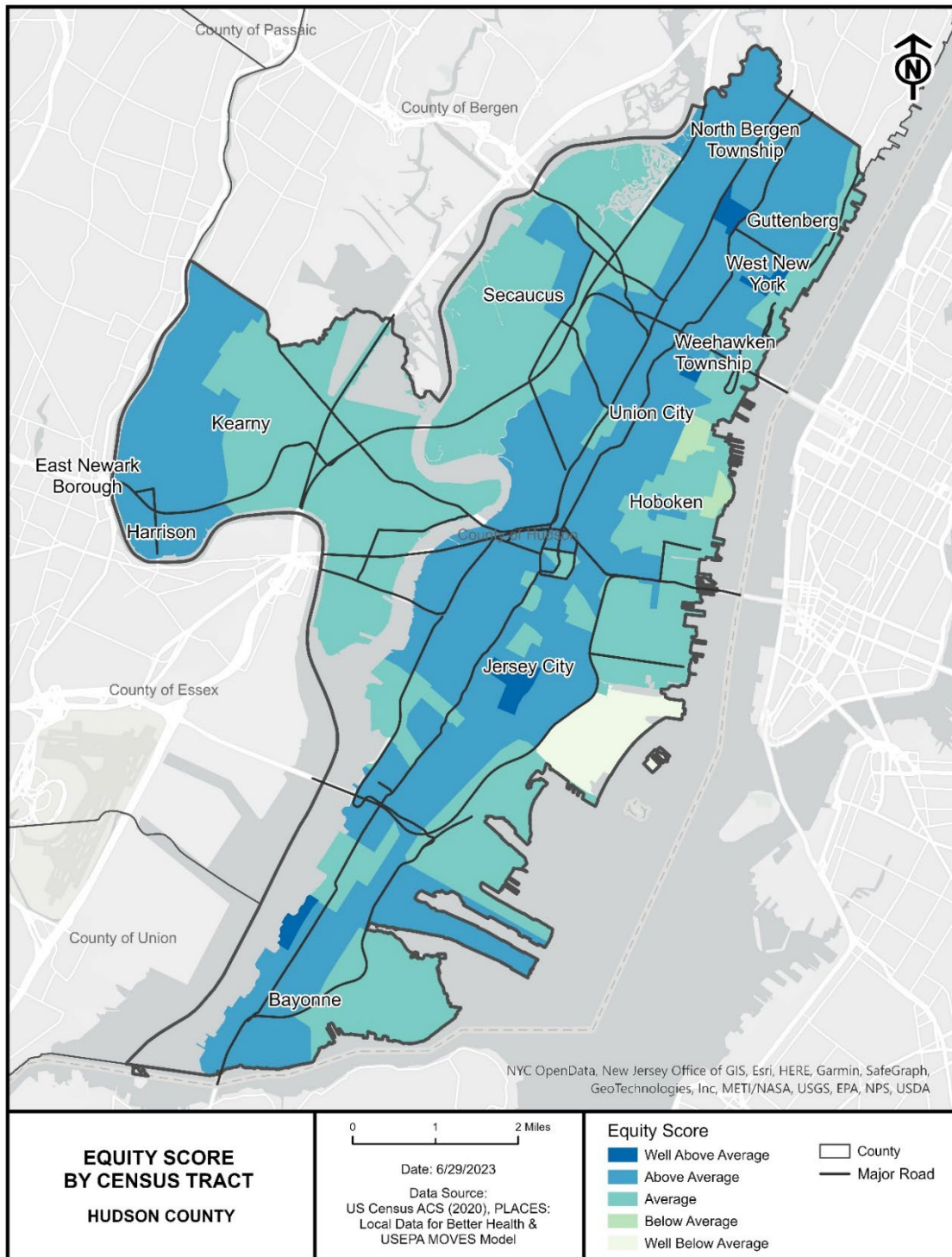


Figure 33: Composite equity score for Census Tracts in Hudson County

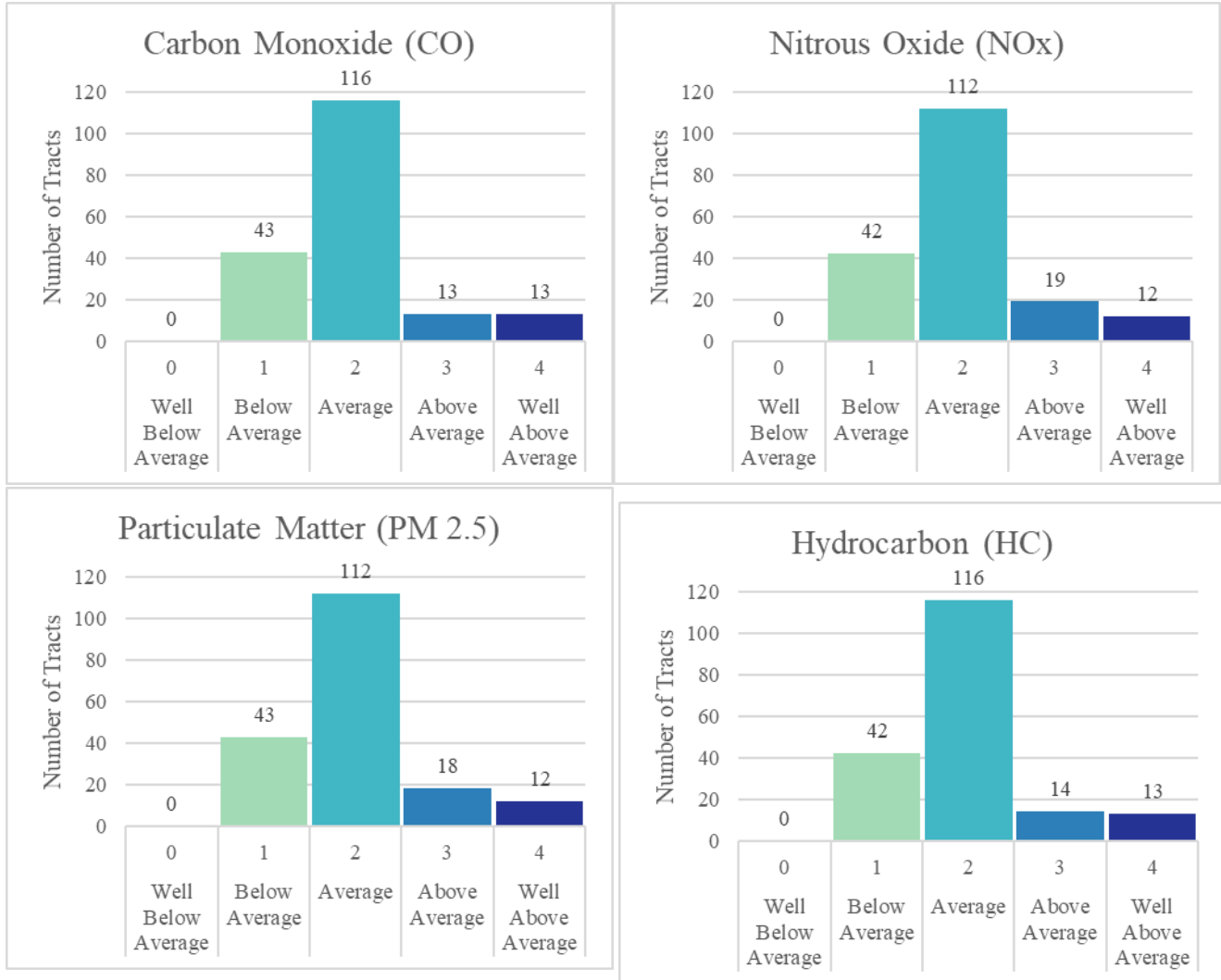


Figure 34: Emissions Scores, Binned by Deviation from the County Mean per Census Tract

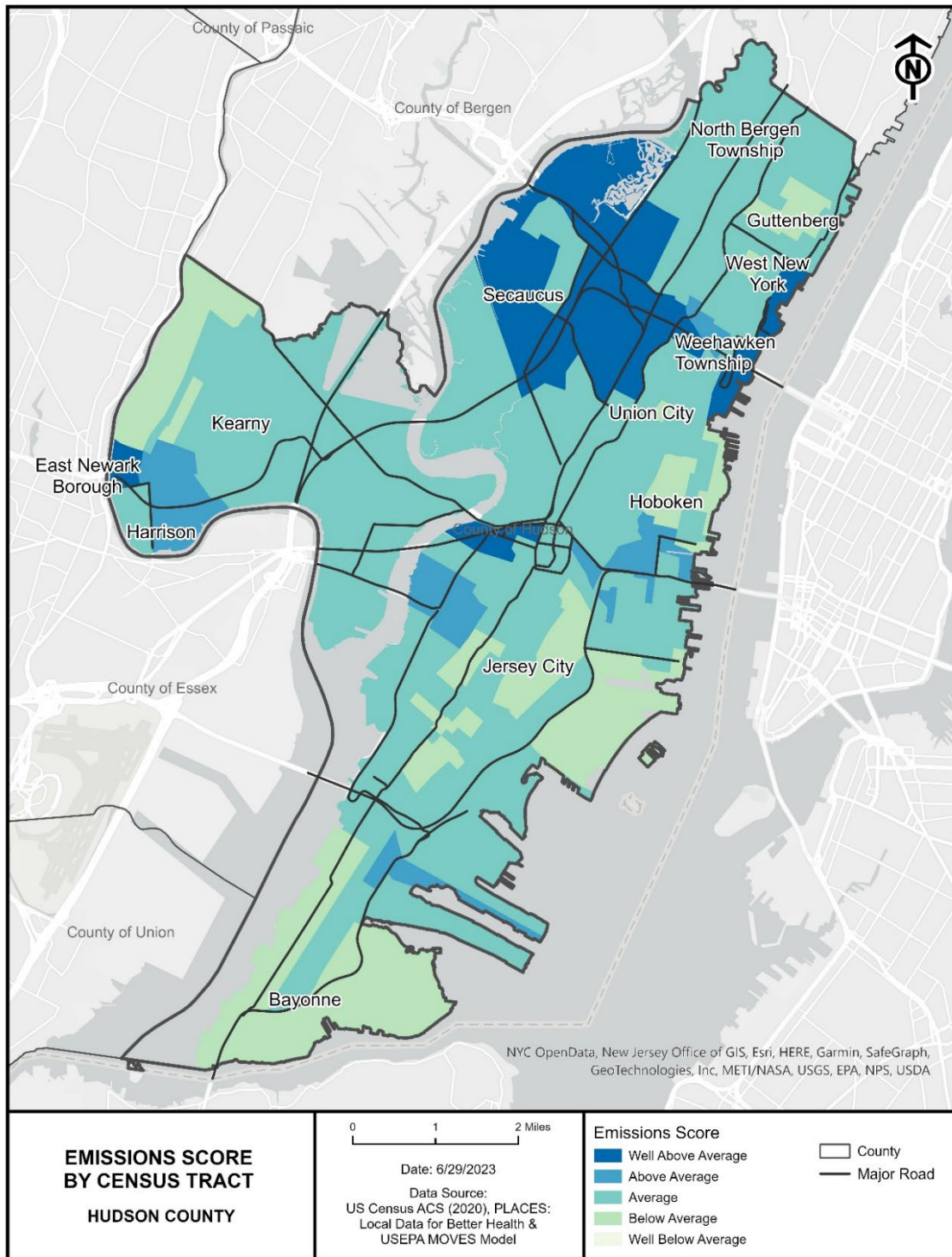


Figure 35: Composite emissions score for Census Tracts in Hudson County

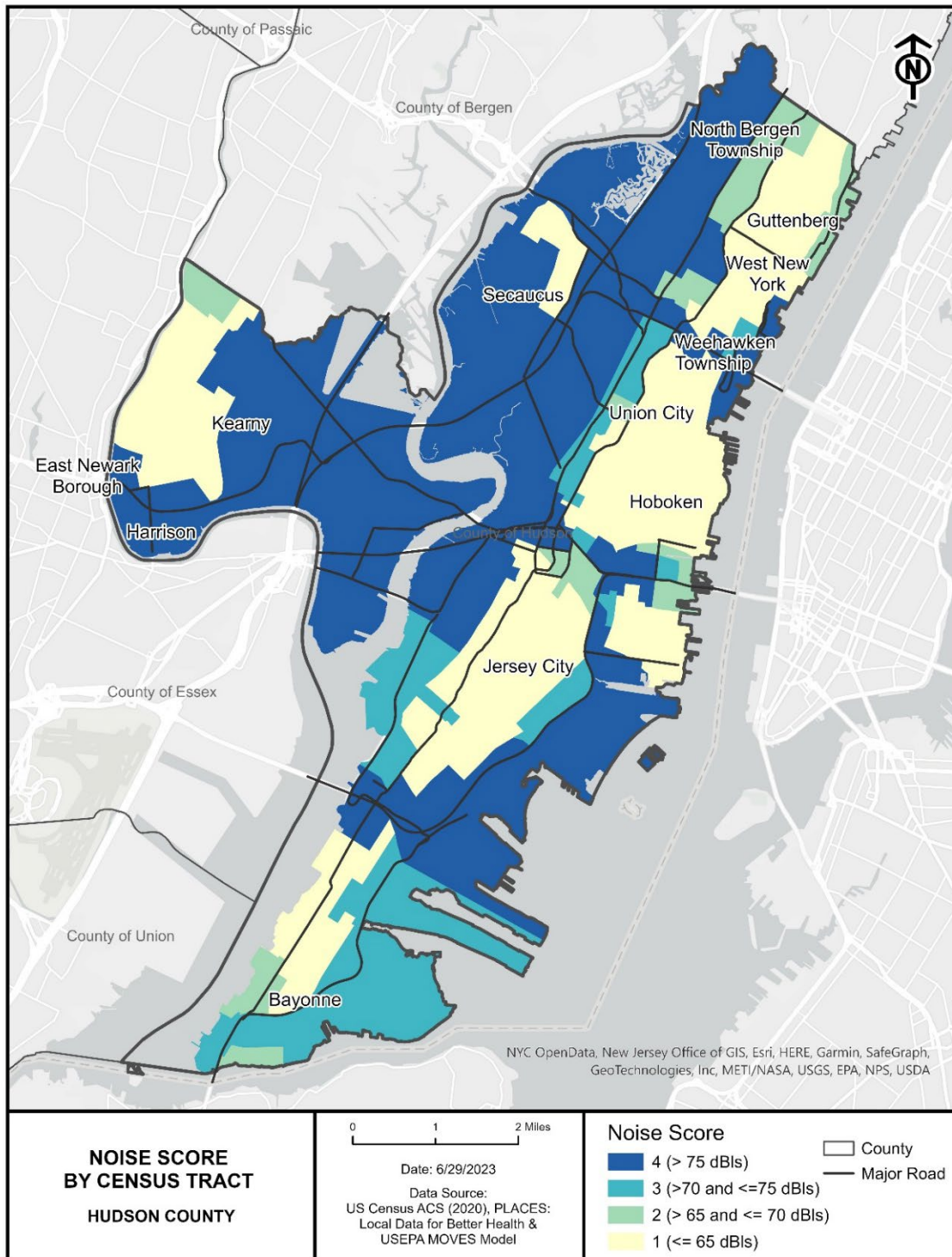


Figure 36: Composite noise score for Census Tracts in Hudson County

After binning, the scores were aggregated into a composite score for each metric (equity, emissions, noise) also ranging from 0 to 4. These scores were then summed together to generate a Total Combined Community Impacts Score ranging from 0 to 12. The next section displays the Total Combined Community Impacts Score and assessment to identify the areas that are the most vulnerable to the impacts of freight within Hudson County.

Community Impacts

Bivariate maps, which scale color intensities of two features simultaneously, were developed to compare the equity composite score with both emissions and noise. **Figure 37** displays the bivariate map of equity and emissions. **Figure 38** displays the bivariate map of equity and noise.

These maps show where the scores are compounding or are diverging. For example, in **Figure 37**, a Census Tract with a white/yellow hue (bottom left of legend) has low equity score and low emission score, so is not vulnerable. A Census Tract with a blue hue (top left of legend) has high equity score and low emission score, so it has more vulnerable populations but is not heavily impacted by emissions. A Census Tract with an orange hue (bottom right of legend) has low equity score and high emission score, so it does not have many vulnerable populations but is heavily impacted by emissions. A Census Tract with a brown hue (top right of legend) has high equity score and high emission score, so it should be prioritized for further assessment because it is vulnerable on both metrics.

Of the 183 Census Tracts within Hudson County, twelve (12) or 6.5 percent were identified as the Census Tracts with the greatest Community Impact, defined as having equity, emissions and noise scores of three or more. These locations are the most vulnerable to the impacts of freight within Hudson County. They have the darkest blue hue in **Figure 39** and are noted as “well above average”.

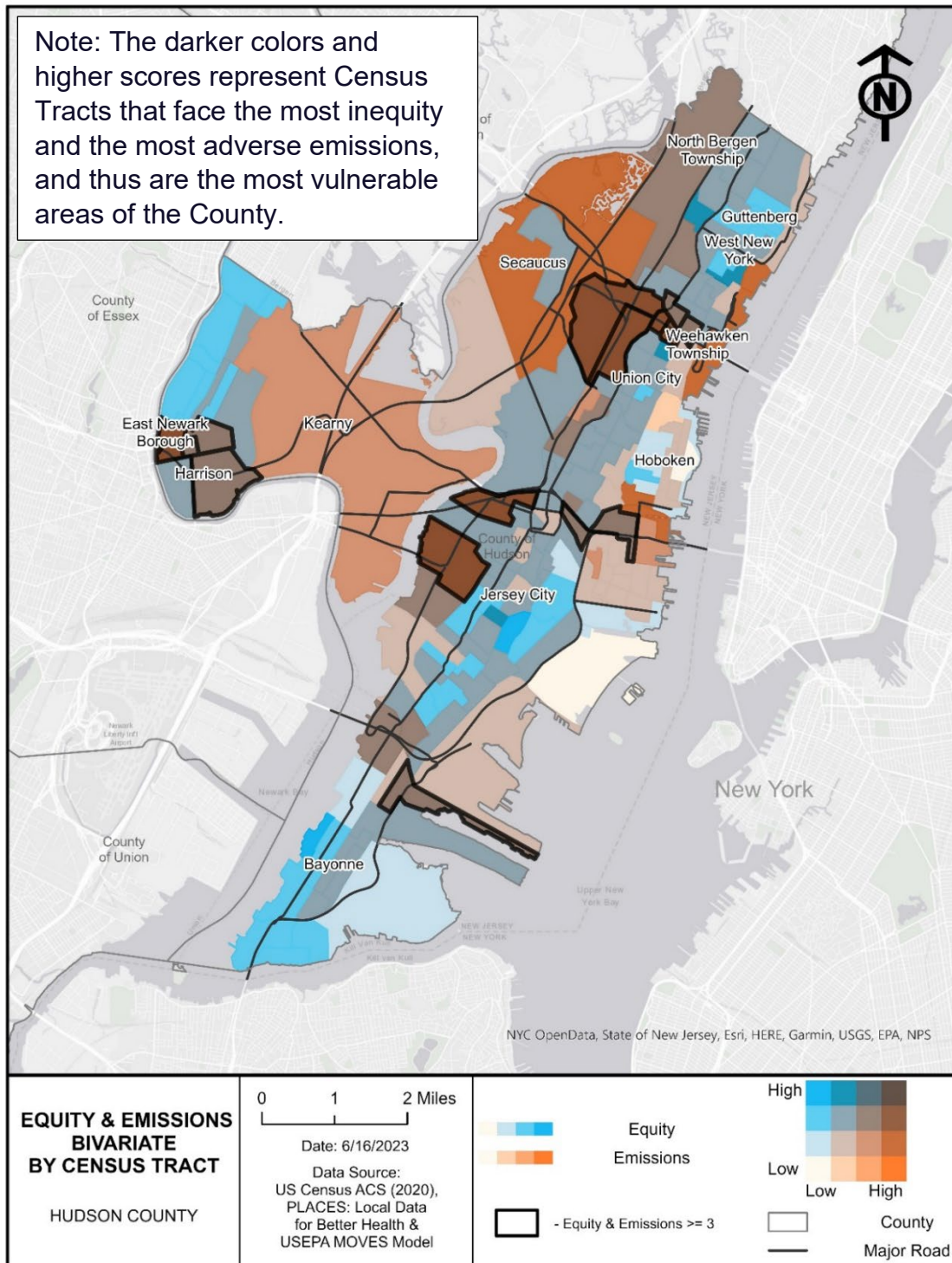


Figure 37: Bivariate map of equity score and emissions score

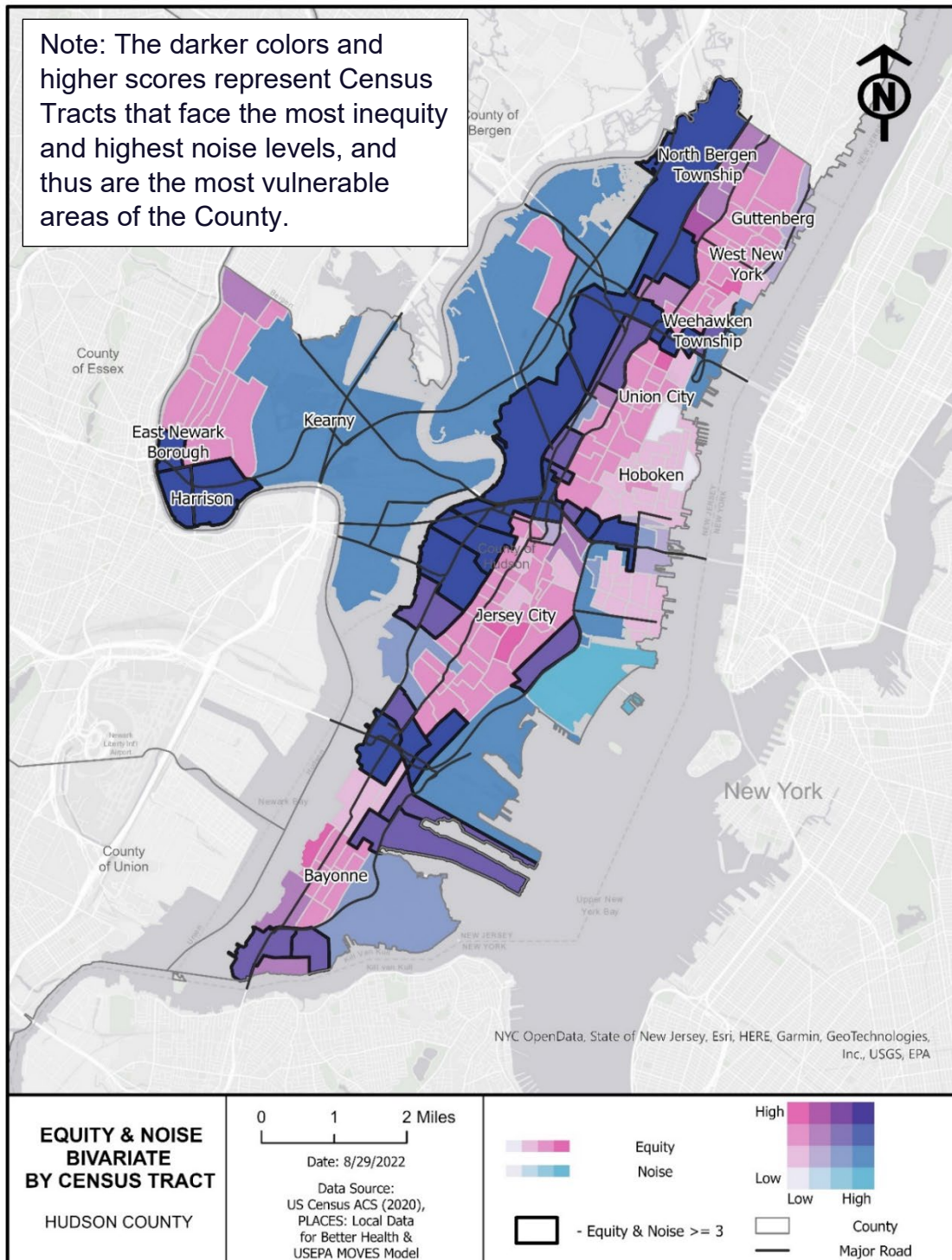


Figure 38: Bivariate map of equity score and noise score

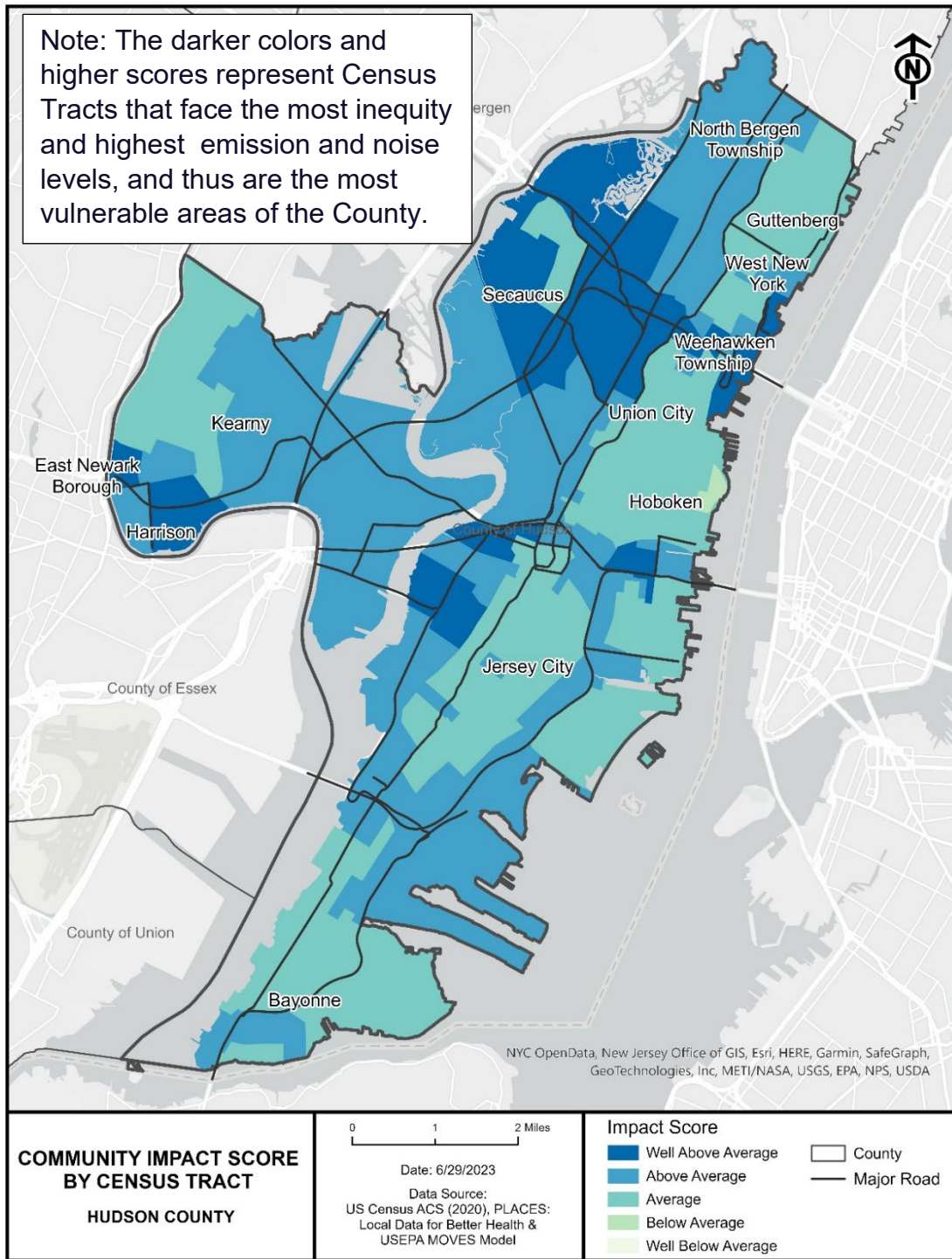


Figure 39: Total Combined Community Impacts Score for Census Tracts in Hudson County

The Total Combined Community Impacts Score was also applied to the previously identified congestion corridors, safety corridors, deficient bridges, and poor pavement corridors. Network segments were spatially joined to the community impacts data to tag each segment with score in their associated Census Tract. Network segments are often defined on small enough geographies (milepost-to-milepost) that they fall within one Census Tract. For those that cross boundaries or fall within more than one Census Tract, they were identified as the location with the higher score (higher vulnerability to inequity, greater emissions, and higher noise levels). The segments were then ranked by their score to prioritize locations for further analysis and recommendations. The following sections describe these results.

Volumes, Capacity, and Congestion

Roadway segments with high levels of congestion had previously been selected for further analysis. These segments have been assigned Total Combined Community Impacts Scores in **Table 22**. A higher score indicates that the corridor has higher vulnerability to inequity, greater emissions, and/or higher noise levels. This scored list was considered in the development of recommendations and strategies to lessen the impact of trucks on these segments.

Table 222: Congested Corridors Ranked by Total Combined Community Impacts Score

Corridor	Total Combined Community Impacts Score
Secaucus Road east and west of the US Route 1&9 Ramps	11
Broadway between US Route 1& 9 and Tonnelle Avenue	11
Tonnelle Avenue north and south of NJ 495	11
Park Avenue south of 60 th Street	10
County Avenue / New County Road between Paterson Plank Road and Seaview Drive	10
Newark – Jersey City Turnpike between Harrison Avenue and NJ Route 7	10
Marin Boulevard	10
John F. Kennedy Blvd between	9
NJ Route 440 and Paterson Plank Road	9
Manhattan Avenue	9
Bergenline Avenue north of 60 th St	7
Paterson Avenue in Hoboken	6

Safety

The truck crash analysis using Safety Voyager identified all truck crashes that involved one or more trucks on all County and municipal roadways in Hudson County. Five corridors were initially identified as having 20 or more crashes within a 0.5-mile segment. These corridors have been assigned community impacts scores in **Table 23**. A higher score indicates that the corridor has higher vulnerability/sensitivity toward inequity, greater emissions, and/or higher noise levels. This scored list was considered in the development of recommendations and strategies to lessen the impact of trucks on these route segments.

Table 23: Safety Corridors Ranked by Total Combined Community Impacts Score

Roadway Name	Municipality	Between	And	MP	Total Combined Community Impacts Score
John F. Kennedy Boulevard	Union City / North Bergen	21 st Street	42 nd Street	33.5-34.6	11
Paterson Plank Road	North Bergen	Columbia Avenue	Penhorn Avenue	3.5-3.9	11
County Avenue	Secaucus	Secaucus Road	UPS Drive / Turnpike Entrance Ramp	2.0-2.5	10
Paterson Plank Road	Union City	2 nd Street	11 th Street	2.0-2.5	10
Harrison Avenue/ Newark-Jersey City Turnpike	Kearny	Bergen Avenue	I-280 Interchange	13.9-14.4	8

Bridges

The Hudson County owned bridges, including those owned jointly with Essex County, have been assigned community impacts scores in **Table 24**. As described in previous sections, a higher score indicates that the bridge is located in a Census Tract that has higher vulnerability to inequity, greater emissions, and/or higher noise levels. This scored list should be considered when developing recommendations and strategies to lessen the impact of trucks on these bridges.

Pavement

County and municipal corridors with “Poor” pavement conditions have been assigned community impacts scores for each segment in the corridor. The minimum and maximum scores are presented in **Table 25**. A higher score indicates that the corridor is located in a Census Tract that has higher vulnerability to inequity, greater emissions, and/or higher noise levels. This scored list should be considered when developing recommendations and strategies to lessen the impact of trucks on these route segments.

Table 23: Deficient and High Truck Volume Bridges in Hudson County with Community Impacts Scores

Structure Number	Structure Name	Location	Deficient	High Truck Volume (4+ percent)	Total Combined Community Impacts Score
0700-HO1	Clay Street over Passaic River	Newark, East Newark	Yes	No	11
0700-HO3	Bridge Street over Passaic River	Newark, Harrison	Yes	Yes	11
900004	Secaucus Road Over Penhorn Creek	North Bergen	No	Yes	11
900005	Eldorado Arch over Cliff	Weehawken	No	Yes	10
900034	New County Road over County Road Ramps C&D	Secaucus	No	Yes	10
900015	County Road over Penhorn Creek	Secaucus	No	Yes	9
900013	Newark Avenue Over National Dock Secpndary Railroad	Jersey City	No	Yes	8
900033	New County Road over Norfolk Southern	Secaucus	No	Yes	8
900007	John F. Kennedy Boulevard East / Cliff	North Bergen	No	Yes	6
900008	John F. Kennedy Boulevard over Conrail	Jersey City	No	Yes	6
900009	John F. Kennedy Boulevard over HBLRT	Jersey City	No	Yes	6
900011	Bergen Avenue over HBLRT	Jersey City	No	Yes	6
900016	14 th Street Viaduct	Hoboken, Union City	No	Yes	6
900017	Manhattan Avenue Viaduct North Wing over Gorge	Union City	No	Yes	6

Structure Number	Structure Name	Location	Deficient	High Truck Volume (4+ percent)	Total Combined Community Impacts Score
900035	John F. Kennedy Boulevard East Concrete Arch	North Bergen	No	Yes	6
900028	Palisade Avenue over New York Avenue	Jersey City	No	Yes	5
900029	Passaic Avenue over Passaic River Bank	Kearny	No	Yes	5
900002	Willow Avenue over HBLRT	Hoboken, Weehawken	No	Yes	4

Table 245: “Poor” Quality Pavement Segments in Hudson County with Community Impact Scores

Corridor Name	Municipalities	Total Combined Community Impact	
		Minimum	Maximum
Newark Avenue	Jersey City	11	11
Marin Boulevard	Jersey City	11	11
Paterson Plank Road	North Bergen, Secaucus	10	11
Secaucus Road	Secaucus	9	11
John F. Kennedy Boulevard	Jersey City, Union City, North Bergen, Guttenberg, West New York	6	11
Tonnelle Avenue	Jersey City	6	11
Broadway	Jersey City	10	10
Frank E. Rodgers Boulevard	Harrison	10	10
County Avenue	Secaucus	6	10
John F. Kennedy Boulevard	Bayonne	9	9
Sip Avenue	Jersey City	9	9
Fish House Road / Pennsylvania Avenue / Central Avenue	Kearny	8	8
John F. Kennedy Boulevard East	Union City, Weehawken, North Bergen, Guttenberg, West New York	7	8

VI. Improvement Strategy Groups

A comprehensive set of recommendations were developed to address issues related to capacity, safety, congestion, infrastructure, emissions, noise and equity. The specific improvements are grouped into eight categories as discussed below. For some specific locations, multiple types of improvements as well as policy and technology changes may be appropriate. At other locations, the recommendation may be a single geometric or traffic signal improvement.

Geometric improvements

Geometric improvements refer to physical improvements at a specific location. Examples of recommended geometric improvements include physical modifications to an existing roadway junction or intersection such as channelization of a turning movement, construction of a turning lane, lengthening existing queue storage, or relocation of a merge or diverge junction. Roadway widening to provide additional capacity are not desirable and were not recommended at congested locations. Furthermore, FHWA “Proven Safety Countermeasures” also includes construction of medians and/or pedestrian refuge islands as well as conversion of signalized or unsignalized intersections to roundabouts. Neither of those strategies were deemed appropriate for the specific locations studied.

Traffic signal improvements

Traffic signal improvements refer to a wide range of improvements from signalization of an existing unsignalized intersection to changes to the current signal timing or phasing plan to strategies to improve the visibility of signal heads. Increases to yellow clearance times were found to be a common strategy at multiple locations, particularly along the John F. Kennedy Boulevard corridor. In addition to clearance times, the FHWA “Proven Safety Countermeasures” also includes other strategies.

Install new traffic control devices

The installation of a traffic signal (or a roundabout) at an unsignalized intersection can improve capacity, reduce delay, and improve safety. Installation requires a warrant analysis (which is a determination for the need of a traffic signal) to ensure that minimum traffic volume requirements are being met. There is also a warrant analysis if there is a history of five or more similar crashes each year.

Modify signal timing directives

Signal timing directives define how a traffic signal operates. Signals have two or more phases where a specific set of movements have the right-of-way for a fixed or variable period of time. The total time to complete all phases is referred to as the cycle length. A simple four-way signal

operation would have two phases: the east-west movement combined with the north and south crosswalks followed by the north-south movement combined with the east and west crosswalks. More complex directives may include left turn advance phases for one or more approaches; or split phasing where two opposing movements have separate phases rather than moving together in a single phase. Adjusting the signal timing and/or phasing can increase capacity and reduce delays and queues. Shorter cycle lengths reduce capacity and delay as vehicles arriving during a red phase have shorter waits for the green phase. Longer cycle lengths increase capacity, delay and queue lengths as vehicles have to wait longer for a green phase, but there are fewer cycles per hour. The FHWA countermeasures include evaluating and adjusting the yellow clearance time. The yellow clearance time needs to be long enough at larger intersections, especially five-leg intersections, to allow a vehicle arriving on the yellow to travel through the entire intersection before a conflicting movement has a green phase.

Other strategies

The FHWA “Proven Safety Countermeasures” also include other strategies that may be applicable to Hudson County including leading pedestrian intervals, pedestrian hybrid beacons, rectangular rapid flashing beacons (RRFB), and backplates with reflective borders.

Truck prohibitions

The NJDOT defines permitted truck routes for large trucks only, as well as length, width, and height restrictions. Other truck restrictions are defined by the municipalities. Trucks are currently prohibited from leaving the permitted truck routes unless they are using the shortest route to and/or from a local delivery. However, truck drivers do use the County and local street network to avoid recurring and non-recurring congestion as well as to avoid the Turnpike truck tolls, especially for shorter trips. “Top routes” data from the INRIX database provided visual maps of the extent of this issue. Truck prohibitions need to include additional signs combined with education and enforcement.

Signage improvements

Signage improvements are typically a low-cost option to improve safety and capacity without the construction cost of geometric improvements. Signage improvements include both replacements of existing and installation of new guide and regulatory signs. In Hudson County, signage improvements should be targeted towards truck routing and wayfinding, and also curbside (on-street) loading zone designation.

Update truck route signage and wayfinding

There is a need for increased signage indicating viable truck routes and roads prohibited to trucks. Truck route signage could be part of a County-wide wayfinding scheme to increase visibility of truck routes and adherence to the network.

For most roads, updated signage and wayfinding will help with adherence to the NJ Large Truck Access Network. The New York City Department of Transportation’s (NYC DOT) Truck Signage Program serves as a good model for organizing how to improve and maintain truck route signs in Hudson County. See **Table 26** for these recommendations.⁶ Different signs (directional, advance, on-route) are appropriate depending on the location and the type of road.

Table 26: Truck Route Signs and Locations

Type of Sign	Description	Location
Directional	Signs pointing to truck routes where decisions about travel direction can be made (i.e., intersections).	All intersections Points at which truck routes turn left or right at intersections with non-truck routes. At base of exit ramps At tunnel and bridge exits
Advance	Signs in advance of intersection at which trucks may have to change lanes to turn onto truck route.	150 feet before intersection
On-route	Signs reassuring drivers that they are on a truck route.	All truck routes One-half mile increments

Resign/repaint/redesign curbs to enable loading zones

Improvements to curb usage require the County to work with the applicable municipalities. A uniform and consistent update to curb signage – possibly through road design guidelines that accommodate large vehicles – is recommended to increase transparency of truck operations,

⁶ Table from: <https://ops.fhwa.dot.gov/publications/fhwahop10019/truckrtgmt.htm>

both for drivers and for residents and businesses who rely on and navigate around freight deliveries.

An example of a successful loading zone in Union City is located at the corner of Bergenline Avenue and 11th Street and is shown in **Figure 40**. The business on the corner is able to move palettes from a loading bay that is outlined in white on the street. The loading zone is clearly marked, and the “No Parking” zone is marked with a yellow curb that extends to the end of the block to allow space for delivery vehicles to pull in and out without impacting the cross-street.



Figure 40: Loading Zone at Bergenline Avenue and 11th Street

Pavement marking improvements

Pavement marking improvements also include both replacement and new installation. The most significant improvements involve road diets where roadways are restriped for example to convert a four-lane section to a three-lane section that includes a center left turn lane. Road diets frequently include bicycle lanes in one or both directions, crosswalk enhancements and accompanying signage improvements to reflect the modifications. In addition to road diets, the FHWA “Proven Safety Countermeasures” also include variable speed limits, and improved pavement markings for horizontal curves.

Truck route modifications

Improved signage, education and enforcement are the appropriate strategies for enforcing existing truck prohibitions. However, changes to the truck network may also be warranted to reflect current truck origins, destinations and travel patterns and to minimize truck impacts in residential areas. Several specific changes to the County roadways that comprise the truck network were proposed as part of this study. The addition of these corridors to the NJ Large Truck Access Network will codify desire paths for truckers and has the potential to shift trucks away from vulnerable Census Tracts in the County – thereby improving local air quality (e.g., reduced particulate matter, reduce diesel emissions), safety outcomes (less opportunity for collision with large, heavy vehicles) and local traffic, among other benefits.

As stated earlier, municipalities are able to develop their own truck route plans to minimize truck traffic in residential and other sensitive areas. An example from the recent Hoboken Truck Study is shown in **Figure 41**.

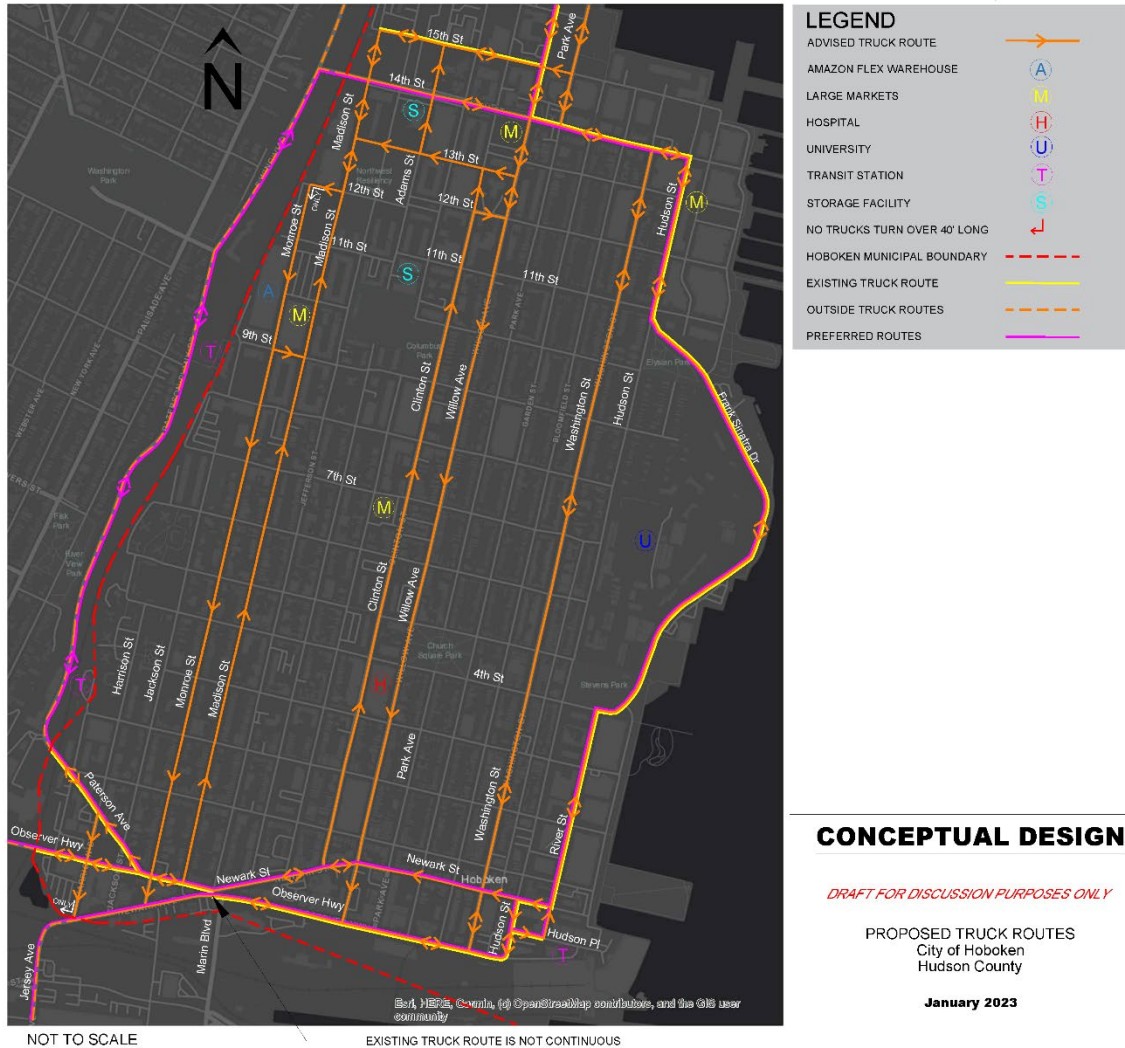


Figure 41: Hoboken Truck Routes

Technology advancements

Technology advancements can be divided into two groups: regional or operator level, and neighborhood or last-mile level. Regional or operator level includes improved levels of truck autonomy (active braking, active steering, active warning and camera monitoring); new high-speed technologies for long-distance freight movements; improved real-time truck-specific navigation and parking applications; and improved safety technologies. Neighborhood or last-mile level includes improved curb management and pricing; cargo bikes; drones; autonomous local delivery vehicles; and freight lockers.

Policy changes

Most policy changes are typically not limited to Hudson County only but should be implemented at a larger regional or state level. These state and regional policy changes are focused on improved safety with reduced emissions and noise and include truck replacement and alternative fuel programs. Other policy changes can be implemented at a municipal level and would focus on changes to zoning requirements to ensure that dedicated loading zones, and on-street / off-street short-term truck parking is required for new development to minimize the impacts of illegally parked trucks on the local street network. The dedication of curb space among competing users and restricted hours for parking, deliveries, etc. are also typically implemented at a municipal level.

Maintain a transparent and accessible truck route review process

Beyond this study, additional and recurrent review of the County's truck routes are recommended to ensure that routes are designated and updated as needed. Many departments of transportation maintain publicly accessible, transparent procedures for requesting changes to truck routes.⁷ For example, the City of Hamilton, Ontario, undertakes a regular review of its Truck Routes Master Plan which includes public consultation.⁸ Online maps and commenting periods can enable the community to identify locations that are concerning for truck movements and help develop data that can be analyzed against other studies, such as results from an INRIX analysis.

Establish a buffer zone requirement for new freight-related developments

When considering truck routes, a buffer zone between locations with high rates of diesel emissions and locations with residential populations is recommended in a range from 300 to 1,000 feet. The California Air Research Board (CARB), a national leader in air quality management and regulation, recommends all developments be beyond 500 feet from freeways to reduce exposure from dispersed emissions⁹. This is especially important for dense, infill developments – such as those in Hudson County – where people spend time living and working near high-volume roadways. Many of these locations cannot be relocated and new investments

⁷ https://www.oregon.gov/ODOT/Planning/Documents/LocalTruckRoute_ApprovalProcedure.pdf;
<https://transportation.baltimorecity.gov/sites/default/files/Truck%20Route%20Designation-Procedures%20for%20Requesting.pdf>

⁸ <https://engage.hamilton.ca/trmp>

⁹ <https://ww2.arb.ca.gov/resources/fact-sheets/strategies-reduce-air-pollution-exposure-near-high-volume-roadways>;
<https://www.latimes.com/local/california/la-me-freeway-pollution-what-you-can-do-20171230-htmstory.html>

in distribution centers in the County will increase demand for truck trips, indicating a need for continued attention and investment in the reduction of health-damaging air pollution.

Establish particulate matter monitoring

An important aspect of mitigating air pollution from truck emissions is to track performance and provide guidance for future policy. There is currently little to no local data on air quality in Hudson County.¹⁰ Soft infrastructure (e.g., paint, signage, wayfinding) investments can be built upon with low-cost air quality monitoring stations¹¹ throughout the County that quantify (spatially and temporally) typical truck emissions such as PM 2.5, PM 10, NO₂, O₃, and CO. These monitoring stations will provide insight into areas that are seeing benefits from changes in the truck routing network, and, more generally, provide more data the County to assess emissions goals.

Delivery strategies

Delivering goods on time, efficiently, and safely while minimizing disruptions to communities can be difficult in dense, congested environments – especially as demand for deliveries (in smaller, and more frequent shipments) has increased in recent years.

Comprehensive planning is essential to manage the curb. Active involvement is required from receivers, delivery companies, and government to ensure that goods movement is efficient and not disruptive.

Based on the literature review and a review of best practices from other regions, a solution matrix was developed to target strategies by land use typology and is shown in **Table 27**.

The strategies are:

¹⁰ For example, the American Lung Association’s State of the Air report has an “Incomplete” grade for Hudson County. <https://www.lung.org/research/sota/city-rankings/states/new-jersey/hudson>.

¹¹ The approach can be cost effective by using outdoor, stand-alone sensors. A study by the Southern California Air Quality Management District (SCAQMD) (<https://www.aqmd.gov/aq-spec/sensordetail/purpleair-pa-ii>) found that \$250 particulate matter sensors are “very reliable” and highly correlated to the corresponding measurements collected using a substantially more expensive particle instrument (minimum \$2,000). The sensors simply require a 100-240V AC power supply to operate, and therefore could be installed at nearly every light pole in the County.

- Curb Loading Zone: a curbside on-street area designated and indicated through pavement markings and/or signage for trucks to park while making deliveries to local businesses
- Curb Demand Management: the active regulation defining the use of curbside space for different users at specific locations and times based on prioritization of need
- Shared Space: designated on-street spaces which may be reserved for use for deliveries by trucks during business hours and permit other uses such as parking for private vehicles at other times.
- Off-Hour Delivery: defined agreement between businesses, suppliers, and truck operators for the delivery of goods by trucks during off-peak hours (outside of the normal morning and evening rush hour), when traffic and demand for parking is reduced
- Delivery Consolidation: coordinated arrangement among multiple independent supplies and truck operators with deliveries to various customers in the same vicinity to combine orders and deliveries from a central location, reducing total vehicle miles traveled
- Enforcement: monitoring of the curbside space through observation by officers and/or technology include sensors, and issuing warnings or penalties for violations to ensure compliance with regulations to promote safe and efficient deliveries
- Outreach: conversations with businesses, suppliers, truck operators, and the general public regarding challenges with making deliveries and safety to promote safe and efficient deliveries, understand issues, and pursue appropriate policy and infrastructure improvements
- Technology and Innovation: the use of advanced equipment and systems such as cameras, sensors, digital applications, and smart parking meters to monitor and enforce the regulations for designated loading zones and curbside deliveries

Delivery strategies are most effective within Commercial and Commercial (Mixed Use) locations. However, as with all plans, identified solutions will require incorporation of local context considerations.

Table 27: Typology/Solutions Matrix for Hudson County

Strategies	Land Use Typology				Legend	
	Commercial	Commercial (Mixed Use)	Residential	Industrial	Effectiveness	
Curb Loading Zone	High	High	Medium	Low	High	Medium
Curb Demand Management	High	High	Medium	Low	High	Medium
Shared Space	High	High	Medium	Low	High	Medium
Off-Hour Delivery	High	High	Medium	Low	High	Medium
Delivery Consolidation	Low	Medium	High	Low	High	Medium
Enforcement	High	High	Medium	Low	High	Medium
Outreach	High	High	High	High	High	Medium
Technology and Innovation	Medium	Medium	Medium	Low	High	Medium

Additionally, solutions for the curb will need to be adaptable and flexible. The state of freight movement is constantly evolving and adapting to consumer needs and demands. Plans and goals that align with those promoted by neighboring communities and jurisdictions will go a long way in developing a cohesive and robust approach to managing the curb.¹²

¹² As an example, the Manhattan Borough President proposed a curb congestion and e-commerce plan at the same time as the development of this document: <https://mobile.twitter.com/MarkLevineNYC/status/1580540423562723328>

Community engagement strategies

Success on all noted strategies will rely on increased communication and feedback from residents, business owners, commercial operators, truck drivers, and local business district organizations. Communication will enable targeted solutions that address community concerns and incorporate considerations of vulnerable populations. Recurrent community engagement events (e.g., bi-annual freight forums, staffed booths at regional events) that are dedicated to discussions of freight movement can be used to inform peoples of planned changes, check on local sentiments related to trucks and goods movements, and gather new insight from industry professionals.

Parking improvements

Typically, state DOTs and highway authorities are responsible for public truck parking and rest stop planning (e.g., Alexander Hamilton Service Area). There is opportunity for these agencies and regional governments, such as Hudson County, to work with the private sector to expand privately owned and operated truck parking capacity. Developing parking near existing freight facilities supports the truck routing solutions discussed in this document that aim to keep heavy trucks out of residential neighborhoods to limit the distribution of air and noise pollution.

The County can also work with municipalities to identify safe, on-street truck parking locations. Responses from the Freight Forum indicated that short-term parking is an applicable approach to supporting the needs of truck drivers in the County. Other parking solutions include replacing multiple private auto parking spots with one large truck space, signage and metering parking, installing new or improved street lighting to enhance safety outcomes, coordinating with freight centers to create parking spaces outside of facilities, coordinating with retailers to bring restaurants and other facilities to industrial districts, and enforcing parking space compliance to ensure vehicle turnover.

VII. Recommendations

The first set of recommendations are organized by place type: commercial, industrial, and residential. The second set of recommendations are organized by geographic focus area. In this section, the place type strategies are presented first followed by specific improvements for the locations that were identified in Section V. Locations and strategy types are presented in **Table 28**. For some locations, multiple improvements as well as policy and technology changes may be appropriate.

Place Types: Commercial and Commercial (Mixed Use)

Examples of commercial and commercial (mixed use) place types that are located adjacent to County routes include: Harrison Avenue and Frank E. Rodgers Boulevard in Harrison; Paterson Plank Road in Union City; and John F. Kennedy Boulevard in Jersey City.

Many recommendations will require coordination with the local municipalities. Some recommendations may not be applicable or desirable for residents or local businesses in certain communities. Recommendations include:

- Designate curbside loading zones to create spaces for vehicles to pull in and make quick deliveries or pick-ups. They are often designated by time of day and used for on-street parking during alternative times of day.
- Encourage off-hours deliveries during the evening or other off-peak hour times to mitigate street congestion. New York City has implemented its Off-Hour Delivery Program that has had success in reducing peak period congestion.
- Develop design guidelines to ensure that intersections are sized or striped to allow for trucks to be able to maneuver unencumbered through an intersection, to avoid the requirement for backing up maneuvers or to mitigate trucks mounting sidewalks.
- Evaluate on-street parking to ensure it does not encroach on truck turning paths and monitor locations to ensure that vehicles comply with designated on-street parking zones.
- At intersections with poor visibility, consider signage, pavement and curb markings, and warning lights to improve safety.
- Investigate freight consolidation locations in urban areas where land is expensive, and congestion and fuel costs are high to reduce the number of delivery trucks
- Conduct public outreach and enforcement to ensure that trucks are following all existing regulations.

Place Types: Residential

There are many residential communities throughout Hudson County. Hudson County is the most densely populated county in the United States outside of New York City and San Francisco. The four most density populated municipalities in the United States: Guttenberg, Union City, West New York and Hoboken are all located in Hudson County.

- Add truck prohibition signs and increase enforcement along residential streets that are being used as alternative routes by trucks to avoid recurring and/or non-recurring congestion.
- Investigate freight consolidations in urban areas where land is expensive, and congestion and fuel costs are high to reduce the number of delivery trucks
- Encourage the use of new technologies such as E-Cargo bikes to reduce truck deliveries.

Place Types: Industrial

Industrial sites include the intermodal terminals: Port Jersey including GCT, CSX North Bergen, CSX Kearny and the NS Croxton rail terminals. There are many warehouse and industrial districts throughout the County including Secaucus and South Kearny.

- Identify additional potential truck parking and rest stop facilities
- Consider working with the NJDOT to identify areas where there are significant numbers of overweight trucks and create strategies to target enforcement.
- Combine improved truck prohibition and wayfinding signage with targeted enforcement to ensure trucks follow designated truck routes.
- Create a public process to receive and evaluate truck route changes.

Focus Areas

The focus areas are listed below and are shown graphically in **Figure 42**. The focus areas were developed by reviewing the corridors identified in the Section V and noting that many of the corridors pass through a small group of geographic areas. This small group evolved into the nine focus areas. The focus areas aided in analyzing multiple corridors holistically rather than in isolation. Thus, a single planned, proposed, or recommended improvement can actually benefit multiple corridors. Note that many of the focus areas include Census Tracts that ranked high in the Total Combined Community Impacts Score.

- Focus Area 1: Harrison
- Focus Area 2: Harrison Avenue and Newark-Jersey City Turnpike, Harrison and Kearny
- Focus Area 3: Fish House Road / Pennsylvania Avenue / Central Avenue, Kearny
- Focus Area 4: Secaucus
- Focus Area 5: North Bergen and Union City
- Focus Area 6: North Hudson
- Focus Area 7: Hoboken
- Focus Area 8: Journal Square, Jersey City
- Focus Area 9: GCT, Bayonne

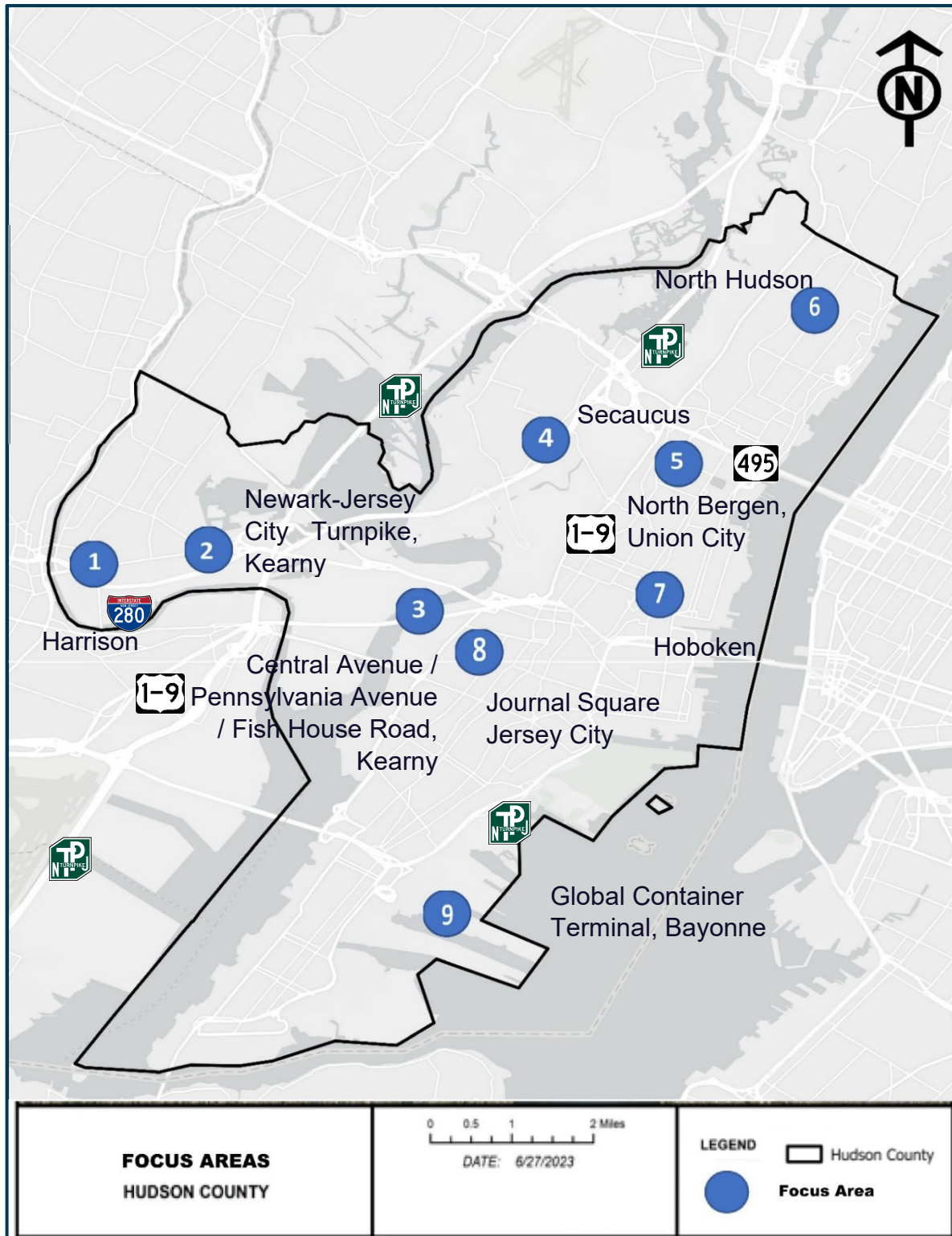


Figure 42: Focus Area Locations

Table 28: Preferred Strategies for Each Corridor and Location

Location / Intersection (Note: This table includes locations and intersections that were identified in Section 5 but were not selected for additional analysis)	Focus Area	Geometric improvements	Signal Improvements	Truck prohibitions	Signage / Marking improvements	Truck route modifications	Technology advancements	Policy Changes	Delivery strategies	Community engagement	Bridge Rehabilitation / Replacement
Harrison Avenue, Harrison	1					X		X	X	X	
Frank E. Rodgers Boulevard, Harrison	1	X	X			X					
Clay Street Bridge, Harrison	1										X
Bridge Street Bridge, Harrison	1										X
Harrison Avenue / Newark – Jersey City Turnpike between Bergen Avenue and NJ Route 7, Kearny	2	X	X			X					
Fish House Road / Pennsylvania Avenue / Central Avenue, Kearny	3	X			X	X					
Secaucus Road between Tonnelle Avenue (US Route 1&9) and County Road, North Bergen and Secaucus	4	X			X						
County Avenue between Secaucus Road and Paterson Plank Road, Secaucus	4	X	X		X						
New County Road Over County Road Ramps C & D, and over County Road, north of Seaview Drive, Secaucus	4										X
County Road Over Penhorn Creek east of NJ Turnpike, Secaucus	4										X

Location / Intersection (Note: This table includes locations and intersections that were identified in Section 5 but were not selected for additional analysis)	Focus Area	Geometric improvements	Signal Improvements	Truck prohibitions	Signage / Marking improvements	Truck route modifications	Technology advancements	Policy Changes	Delivery strategies	Community engagement	Bridge Rehabilitation / Replacement
Secaucus Road Over Penhorn Creek, between Penhorn Avenue in Secaucus & 16 Street in North Bergen	4										X
John F. Kennedy Boulevard between 21 st Street and 42 nd Street, Union City and North Bergen	5		X								
Paterson Plank Road between Columbia Avenue and Penhorn Avenue, North Bergen	5		X								
Park Avenue between 19 th Street and Pleasant Avenue, Weehawken	5					X					
West Side Avenue, North Bergen	6	X	X		X	X				X	
Bergenline Avenue between 60 th Street and John F. Kennedy Boulevard East, Union City	6				X			X	X	X	
Bergen Avenue Over NJ Transit Hudson Bergen Light Rail Line between Kearny Avenue and Ege Avenue, Jersey City				X							X
Paterson Avenue between Observer Highway and Paterson Plank Road, Hoboken	7	X									
Paterson Plank Road between 2 nd Street and 11 th Street, Union City	7		X			X					
Washington Street, Hoboken	7						X	X	X	X	

Location / Intersection (Note: This table includes locations and intersections that were identified in Section 5 but were not selected for additional analysis)	Focus Area	Geometric improvements	Signal Improvements	Truck prohibitions	Signage / Marking improvements	Truck route modifications	Technology advancements	Policy Changes	Delivery strategies	Community engagement	Bridge Rehabilitation / Replacement
Broadway between US Route 1&9 Truck and Tonnelle Avenue, Jersey City	8	X		X		X					
Newark Avenue between John F. Kennedy Boulevard and Summit Avenue (MP 0.00-0.20), Jersey City	8	X			X	X					
Tonnelle Avenue between Sip Avenue and St. Paul's Avenue, Jersey City	8				X	X					
Global Container Terminal, Bayonne	9	X		X	X	X	X			X	
Manhattan Avenue, between Central Avenue and County Road, Jersey City		X									
John F. Kennedy Boulevard between Communipaw Avenue and Tonnelle Avenue (US Route 1&9), Jersey City		X	X							X	
Marin Boulevard between 6 th Street and 12 th St, Jersey City		X	X								

Focus Area 1: Harrison

Harrison Avenue and Frank E. Rodgers Boulevard had both been identified in Section IV. Issues and findings and the proposed recommendations are listed below and are shown graphically in **Figure 43** and **Figure 44**, respectively.

The issues and findings in Harrison are:

- Harrison Avenue and Frank E. Rodgers Boulevard both have high truck volumes.
- Harrison Avenue is on the NJ Truck Access Network, and therefore must accommodate large through trucks in addition to trucks with local destinations. This can create severe bottlenecks during peak hours when multiple types of trips require the street for connection.
- This area is among highest number of truck crashes in County.
- Harrison Avenue was flagged for both congestion and high truck volumes. Harrison Avenue also serves as a toll-free alternative to the Turnpike for trucks traveling to and from Newark.
- The Clay Street Bridge and the Bridge Street Bridge were both identified as deficient.
- Frank E. Rodgers Boulevard was flagged for “poor” pavement conditions.

The recommendations include projects that have already been initiated by other agencies. The Transportation Improvement Program (TIP) identifies federally-funded infrastructure projects. Local Safety (LS) projects are specifically focused on safety and crash reduction.

- Flexible shared spaces (designated to serve loading/unloading activity during peak commercial hours and general parking otherwise) can balance multiple needs on the street.
- The Clay Street and Bridge Street Bridges are deficient and are currently under study / preliminary engineering funded through the TIP Program.
- There is an ongoing improvement project on Frank E. Rodgers Boulevard funded through the TIP Program.



Figure 43: Focus Area 1: Issues and Findings



Figure 44: Focus Area 1: Recommendations

Focus Area 2: Harrison Avenue / Newark-Jersey City Turnpike, Harrison and Kearny

Harrison Avenue / Newark – Jersey City Turnpike is a four-lane roadway that connects Harrison and Kearny with major roadways: I-280, New Jersey Turnpike, and NJ Route 7. It had been identified for multiple evaluation criteria in Section IV. Issues and findings and the proposed recommendations, including geometric, traffic signal, and signage and pavement markings, are listed below and shown graphically in **Figure 45** and **Figure 46**, respectively.

The critical issues are:

- The signalized intersection of Harrison Avenue and Bergen Avenue was identified as a high crash location.
- The eastbound weaving section between the I-280 entrance and exit ramps was identified as a high crash location.
- The westbound weaving section approaching Bergen Avenue was also identified as a high crash location.

The recommendations are:

- At the signalized intersection of Harrison Avenue (CR 508) and Bergen Avenue, consider the extension of the I-280 exit ramp to the westbound right turn lane.

- Consider conversion of Harrison Avenue / Newark-Jersey City Turnpike west of Bergen Avenue from a four-lane facility to three lanes: a single travel lane in each direction plus a center left turn lane. This conversion would allow for the relocation of westbound trucks turning left at Bergen Avenue to a reconfigured USPS/Walmart driveway to the west.
- Consider the use of lane balance to improve eastbound weaving operations and reduce crashes in the high crash location at the eastbound weaving section between the I-280 entrance and exit ramps as shown in **Figure 47**. Lane balance provides an additional through lane so that one of the weaving movements is not required to change lanes.

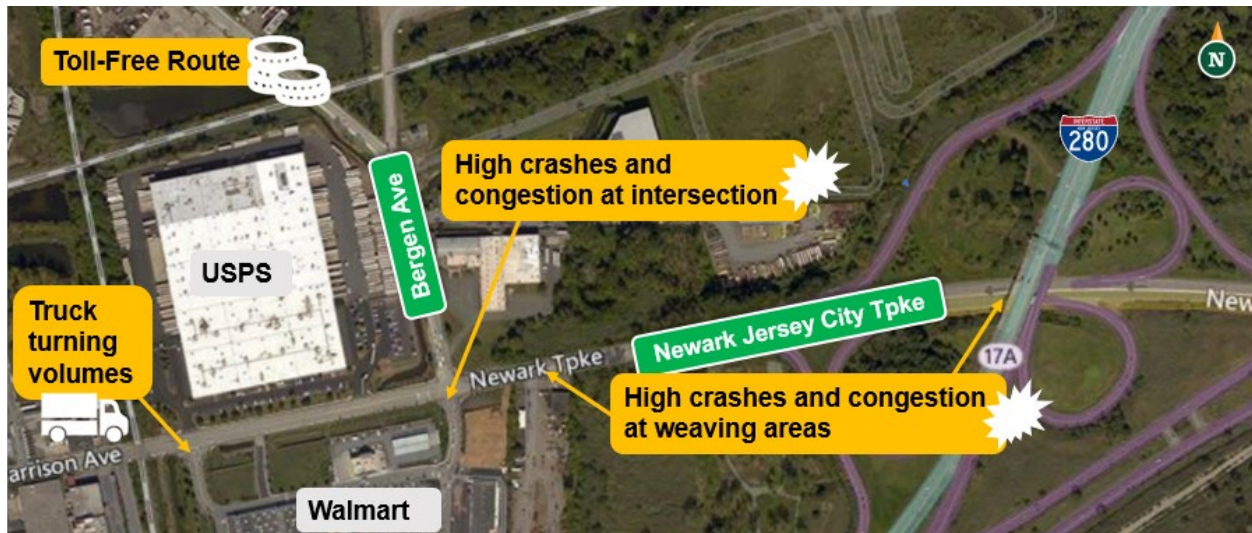


Figure 45: Focus Area 2 – Issues and Findings

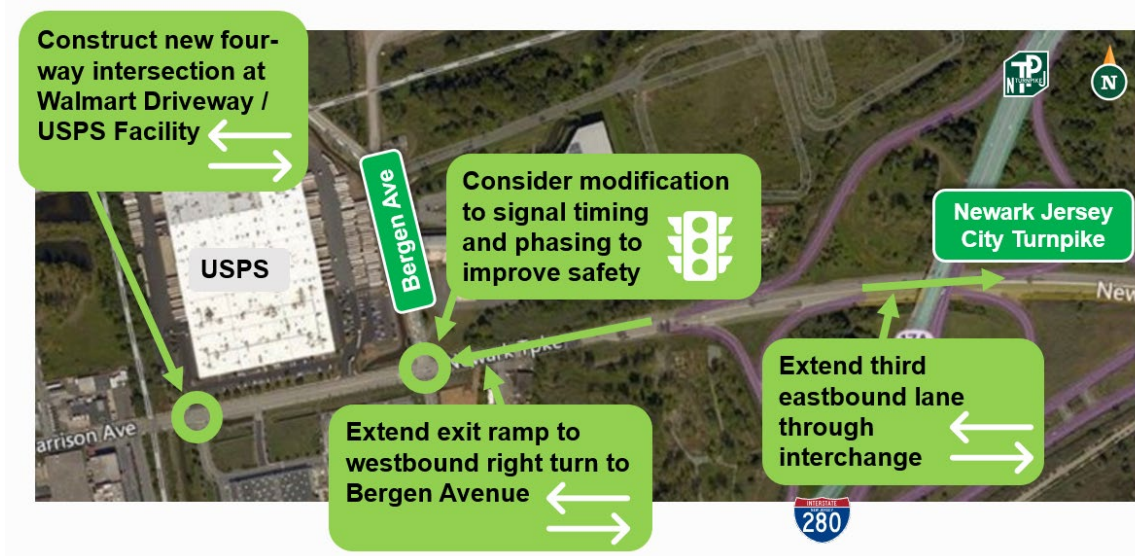


Figure 46: Focus Area 2 – Recommendations

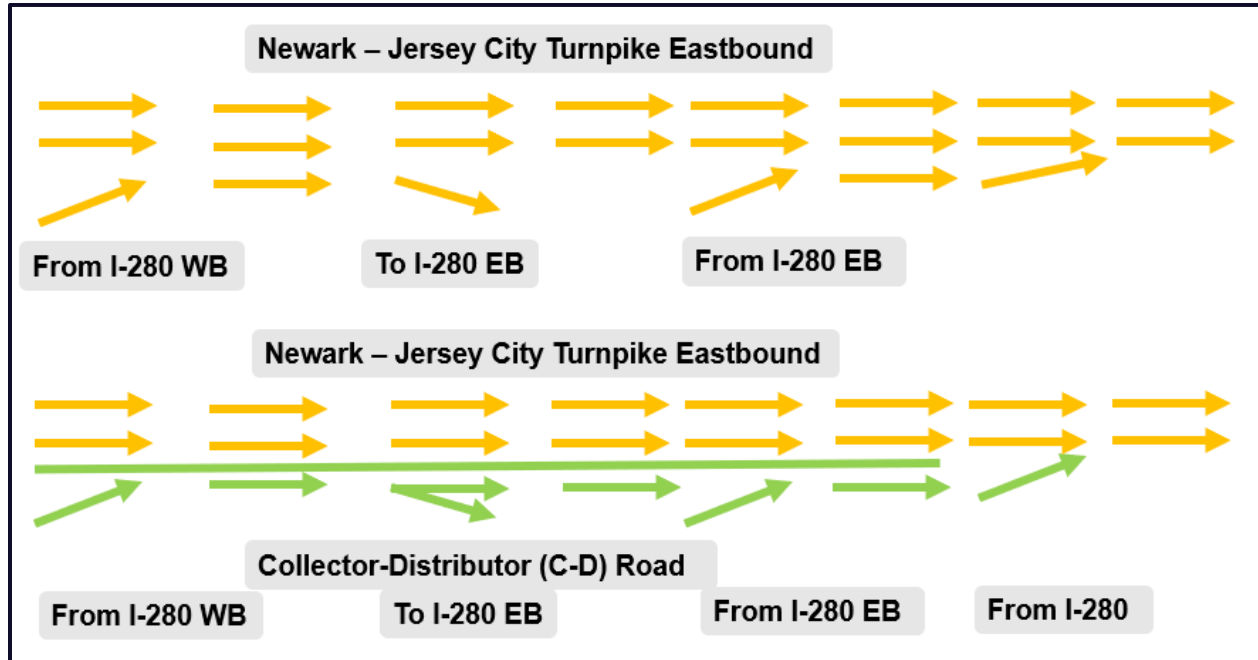


Figure 47: Focus Area 2 – Eastbound Roadway Without and With Lane Balance

Focus Area 3: Central Avenue / Pennsylvania Avenue / Fish House Road, Kearny

Operational and safety improvements are being constructed on Pennsylvania Avenue / Fish House Road / Central Avenue and it is premature to recommend any additional geometric improvements. Recommendations are therefore limited to policy improvements specifically the addition of this roadway to the New Jersey Large Truck Network. It is anticipated that improvements to this corridor will divert trucks from US Route 1&9 Truck. US Route 1&9 Truck is located adjacent to residential land uses while this focus area is industrial. The truck diversion would therefore be anticipated to improve emissions and noise levels in those residential communities. The previously identified issues and the proposed recommendations are listed below and shown graphically in **Figure 48** and **Figure 49**, respectively.

The critical issues are:

- There are poor pavement issues throughout corridor
- Based on the INRIX route data, the corridor was noted to be a frequent shortcut for trucks that travel through the County but have both origin and destination outside of the County.
- The corridor was identified as a high crash location due to the heavy truck volumes and substandard geometric conditions.

- The two Passaic River lift bridges along US Route 1&9 Truck encourage trucks to divert to this corridor to avoid nonrecurring delays on US Route 1&9 Truck.

The recommendations include a current County project:

- Add Central Avenue/Pennsylvania Avenue/Fish House Road to the NJ Large Truck Access Network to codify a desired travel path for truck drivers.
- There is a County roadway improvement project underway



Figure 48: Focus Area 3 – Issues and Findings

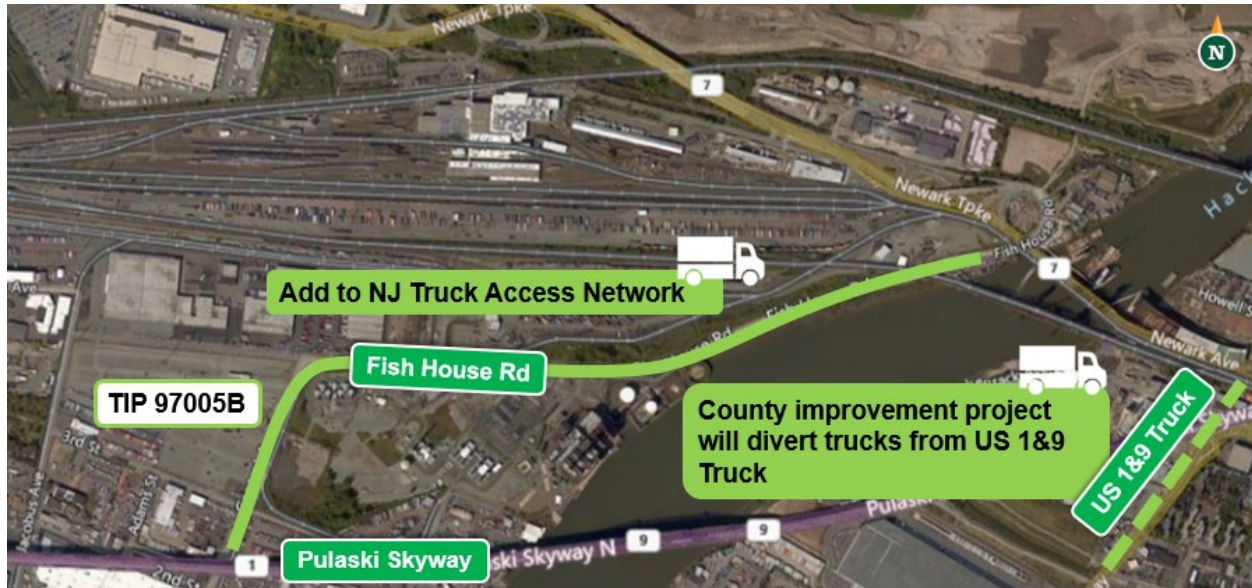


Figure 49: Focus Area 3 – Recommendations

Focus Area 4: Secaucus

Secaucus is a major warehouse district with heavy truck volumes traveling to and from the Turnpike and NJ Route 3. The previously identified issues and the proposed recommendations are listed below and shown graphically in **Figure 50** and **Figure 51**, respectively.

The critical issues are:

- The intersections of County Avenue and Secaucus Road and at County Avenue and the UPS Driveway were identified as high crash locations.
- County Avenue was identified due to high congestion.
- Deficient bridges are located on New County Road over the railroad, New County Road over the County Avenue ramps, County Avenue over Penhorn Creek, and Secaucus Road over Penhorn Creek
- Adjacent areas were identified as having well above average noise, emissions, and equity concerns

The recommendations are:

- Consider geometric and signal phasing changes to improve safety at County Avenue and Secaucus Road. The following recommendations are presented for consideration:
 - Modify the Secaucus Road eastbound approach from two left turn lanes to a single left turn.

- Modify the County Avenue northbound approach from through and shared through/right lane to a through lane and a right turn lane.
- Consider signal phasing changes at County Avenue and the UPS Driveway and County Avenue and the Turnpike Southbound Entrance Ramp. Conduct a signal warrant analysis for the newly created clustered signalized intersection with NJ Turnpike Entrance Ramp. A signal warrant analysis considers traffic volumes, crashes and adjacent signalized intersections to determine if a traffic signal is warranted.
- Install wayfinding and truck route signage along heavily used truck corridors, specifically County Avenue and Secaucus Road.
- Investigate conditions of bridges to determine remaining service life and/or need for truck prohibitions.
- Projects in the focus area should be prioritized to mitigate equity and pollution concerns, and ease burdens on underserved communities near the freight facilities



Figure 50: Focus Area 4 – Issues and Findings

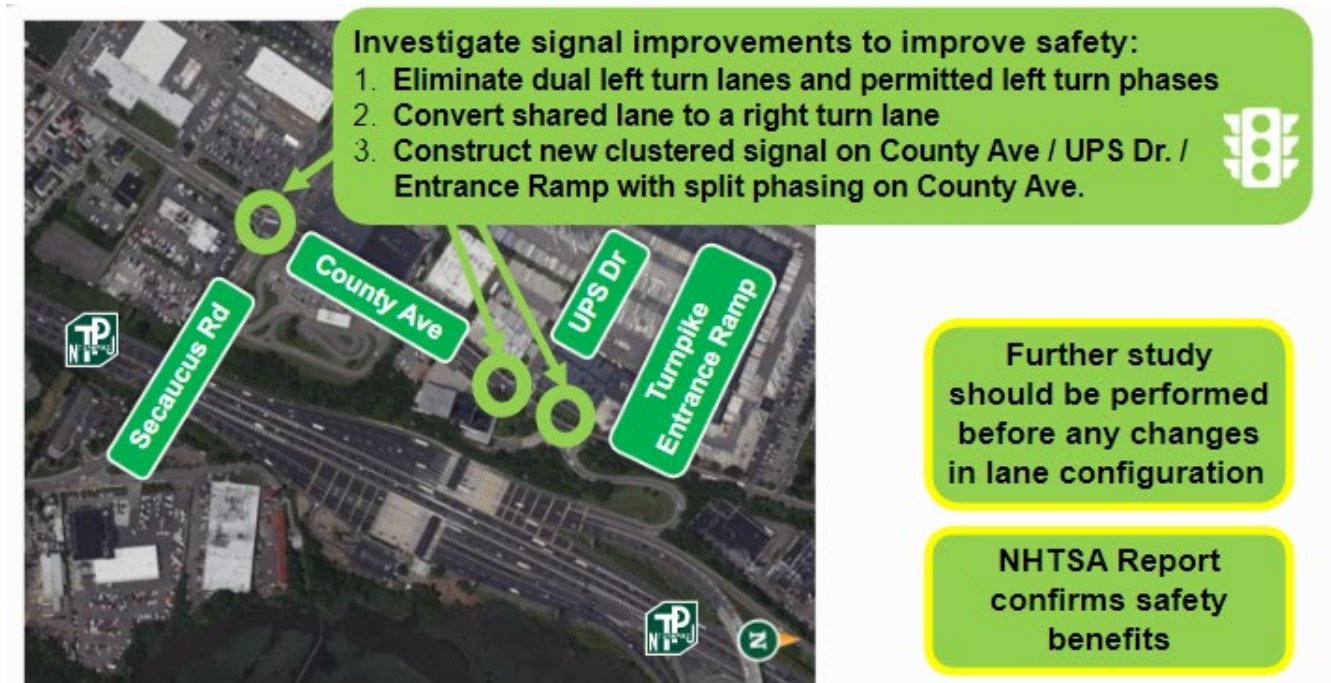


Figure 51: Focus Area 4 – Recommendations

Focus Area 5: North Bergen and Union City

This focus area consists of four parallel north-south routes: US Route 1&9 (Tonnelle Avenue), Paterson Plank Road, John F. Kennedy Boulevard and Park Avenue. The previously identified issues and the proposed recommendations are listed below and shown graphically in **Figure 52** and **Figure 53**, respectively.

The critical issues are:

- John F. Kennedy Boulevard was identified as a high crash corridor specifically at 32nd Street
- There is existing congestion on Tonnelle Avenue (US Route 1&9) that diverts through traffic to the parallel County routes: Paterson Plank Road, John F. Kennedy Boulevard and Park Avenue
- Adjacent area was identified as having well above average noise, emissions, and equity concerns.

The recommendations are:

- Evaluate the clearance intervals on John F. Kennedy Boulevard especially for the skewed intersections at 32nd Street and 26th Street to improve safety and reduce crashes.

- The NJDOT is currently constructing New Road which will connect County Avenue to NJ Route 7 and US Route 1&9 Truck. New Road should divert through traffic from Tonnelle Avenue (US Route 1&9) as well as the parallel County routes.
- Install an air quality monitoring sensors to inform County and residents about where truck emissions occur. A great potential location is at the nearby McKinley elementary school, which would create opportunities to teach youth about environmental science.
- Projects in this focus area should be prioritized to mitigate equity and pollution concerns, and ease burdens on underserved communities near the freight facilities



Figure 52: Focus Area 5 – Issues and Findings



Figure 53: Focus Area 5 – Recommendations

Focus Area 6: North Hudson

This focus area consists of three parallel north-south routes: West Side Avenue, US Route 1&9 (Tonnelle Avenue), John F. Kennedy Boulevard and Bergenline Avenue. The previously identified issues and the proposed recommendations are listed below and shown graphically in **Figure 54** and **Figure 55**, respectively.

The critical issues are:

- West Side Avenue (North Bergen) is a major corridor for trucks due to freight facilities on street and less congestion than Tonnelle Avenue (US Route 1&9) but it is not on the NJ Large Truck Access Network.
- Bergenline Avenue north of 60th Street was flagged for both congestion and high truck volumes.

The recommendations are:

- The place type strategies presented earlier for commercial areas should be applied to the Bergenline Avenue corridor.
- Improve 83rd Street between West Side Avenue and Tonnelle Avenue (US Route 1&9) to provide an alternative through truck route through the industrial area. Once this project has been completed, consider adding West Side Avenue (North Bergen) to the NJ Large Truck Access Network.



Figure 54: Focus Area 6 – Issues and Findings



Figure 55: Focus Area 6 – Recommendations

Focus Area 7: Hoboken

Improved signage, education and enforcement are the appropriate strategies for enforcing existing truck prohibitions. However, changes may also be warranted to minimize truck impacts in residential areas. Several specific changes to the County roadways that comprise the truck network were proposed. The previously identified issues and the proposed recommendations are listed below and shown graphically in **Figure 56** and **Figure 57**, respectively.

The critical issues are:

- Two sections of Paterson Plank Road were identified as corridors with high numbers of truck crashes
- Paterson Avenue between Observer Highway and Paterson Plank Road was identified for high medium truck volumes and congestion.
- Washington Street was mentioned by both the public and the freight community as a pain point for delivery vehicles (difficult to load/unload). Lane and parking violations were frequently observed as a result.

The recommendations are:

- The place type strategies presented earlier for commercial areas should be applied to the Washington Avenue corridor.

- Install improved signage and wayfinding to direct trucks to travel via NJ Route 139 to US Route 1&9 Truck rather than using Paterson Plank Road through residential areas of Jersey City.

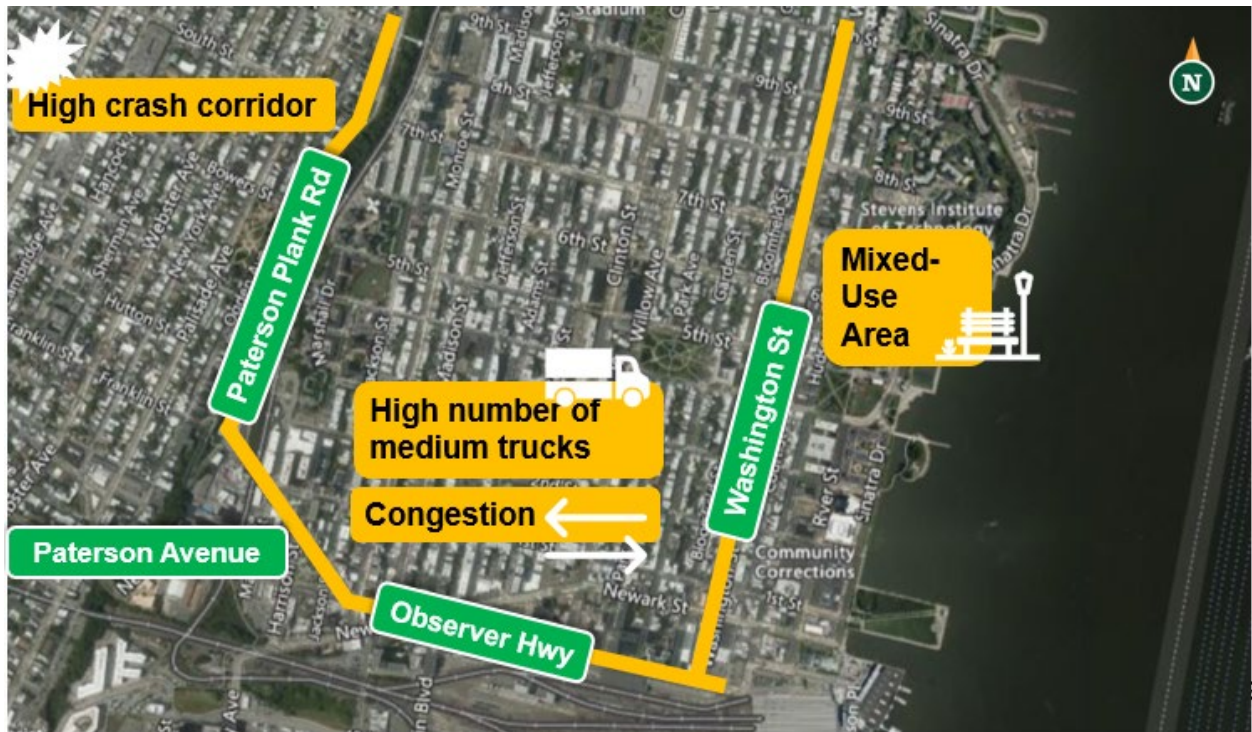


Figure 56: Focus Area 7 – Issues and Findings



Figure 57: Focus Area 7 – Recommendations

Focus Area 8: Journal Square

Journal Square is a major commercial area in Jersey City. Truck access to and from US Route 1&9 Truck uses three parallel east-west routes: Newark Avenue, Broadway and Sip Avenue to access Tonnelle Avenue and John F. Kennedy Boulevard. The previously identified issues and the proposed recommendations are listed below and shown graphically in **Figure 58** and **Figure 59**, respectively.

The critical issues are:

- John F. Kennedy Boulevard was noted for congestion, crashes and poor pavement.
- The adjacent residential area was identified as having well above average noise, emissions, and equity concerns
- The parallel east-west routes: Newark Avenue, Broadway and Sip Avenue were all identified for high truck volumes and “poor” pavement conditions. Broadway was also identified for congestion. It was later noted by Jersey City that Broadway has been recently repaved.
- St. Paul’s Avenue was not identified by INRIX as a high truck volume corridor. This observation was contrary to information received at a public meeting. Residents identified construction vehicles as a significant problem on St. Paul’s Avenue. Available

traffic volume data was reviewed and did not identify high truck volumes, however available data likely was collected prior to much of the local construction. The Hudson County Division of Planning conducted in-person truck counts and did observe some truck traffic on St. Paul's Avenue.

The recommendations are:

- There are ongoing congestion and safety studies and projects throughout the John F. Kennedy Boulevard corridor
- Institute truck prohibitions on Broadway, Sip Avenue and St. Paul's Avenue and divert traffic to Newark Avenue. Broadway, Sip Avenue and St. Paul's Avenue travel through largely residential areas while Newark Avenue is largely industrial. Investigate geometric improvements to Newark Avenue while also making the parallel routes less accessible to trucks. Jersey City Transportation Planning was largely in agreement with this recommendation. A recently completed project that provided a direct ramp from US Route 1&9 Truck southbound to Newark Avenue, noted in **Figure 52**, should direct more trucks to Newark Avenue and away from the parallel streets. Additionally, Jersey City is in the process of designing a safety improvement project for St. Paul's Avenue.
- Both Tonnelle Avenue and John F. Kennedy Boulevard should be signed as truck routes connecting Newark Avenue with the Journal Square area.
- The place type strategies presented earlier for commercial mixed-use areas should be applied to the Journal Square area.
- Projects in this focus area should be prioritized to mitigate equity and pollution concerns, and ease burdens on underserved communities near the freight facilities.



Figure 58: Focus Area 8 – Issues and Findings

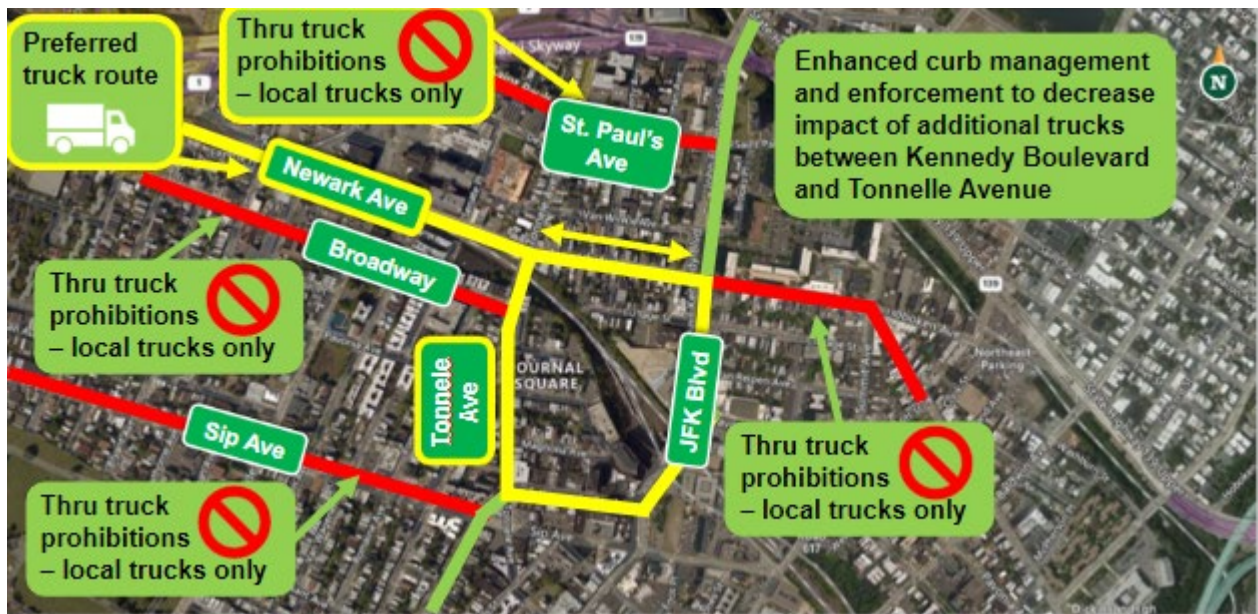


Figure 59: Focus Area 8 – Recommendations

Focus Area 9: Global Container Terminal, Bayonne

Focus Area 9 includes the GCT and the adjacent port-related land uses. This area is one of the largest truck origins and destinations in Hudson County, Issues and findings and proposed

recommendations for Focus Area 9 are listed below and shown graphically in **Figure 60** and **Figure 61**, respectively.

The issues and findings are:

- GCT, combined with the adjacent industrial land uses, is one of the highest generators of large trucks in Hudson County.
- Trucks entering and exiting the GCT area primarily use the New Jersey Turnpike Newark Bay – Hudson County Extension to travel north, south and west; and NJ Route 440 to and from other locations within Hudson County. The INRIX data found that trucks were using Danforth Avenue and Garfield Avenue in Jersey City to avoid congestion on NJ Route 440.
- Because of the presence of the Newark Bay – Hudson County Extension, adjacent EJ communities are subject to high levels of both emissions and noise.

The recommendations are:

- Prohibit trucks from using Danforth Avenue and Garfield Avenue to bypass NJ Route 440 through improved truck prohibition signage, education and enforcement.
- Projects in this focus area should be prioritized to mitigate equity and pollution concerns, and ease burdens on underserved communities near the freight facilities.

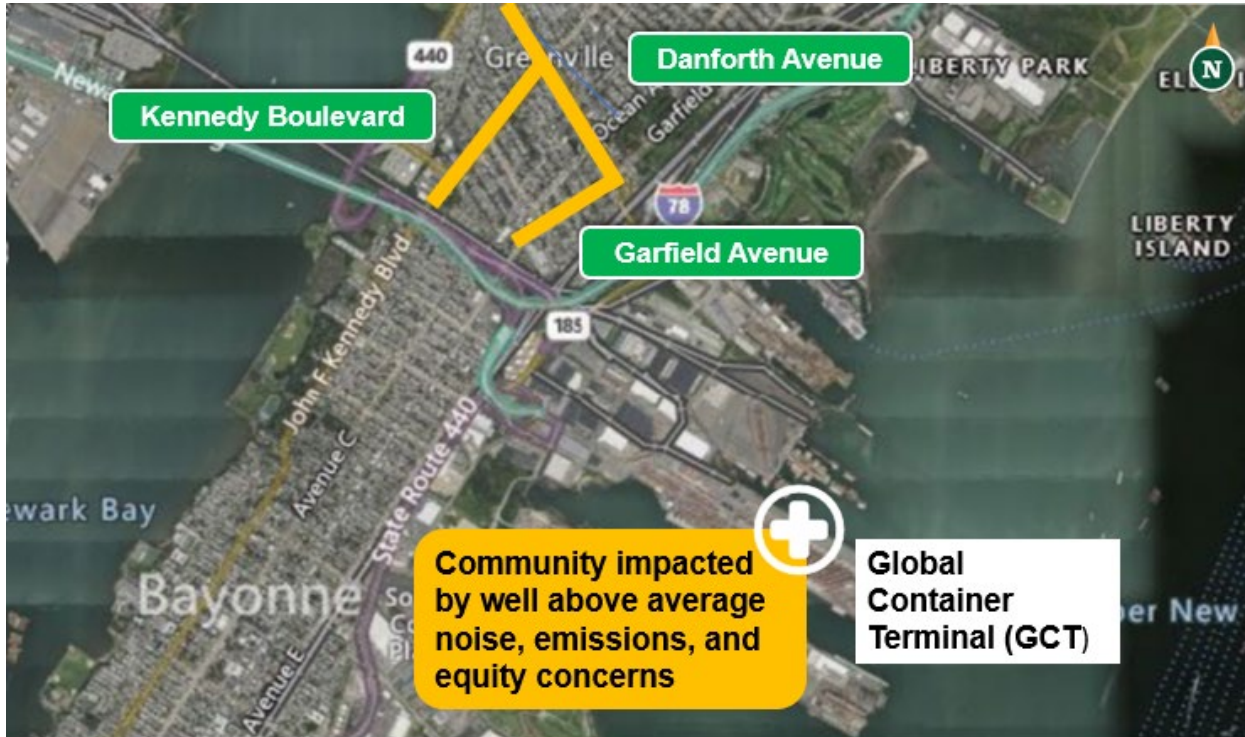


Figure 60: Focus Area 9 – Issues and Findings

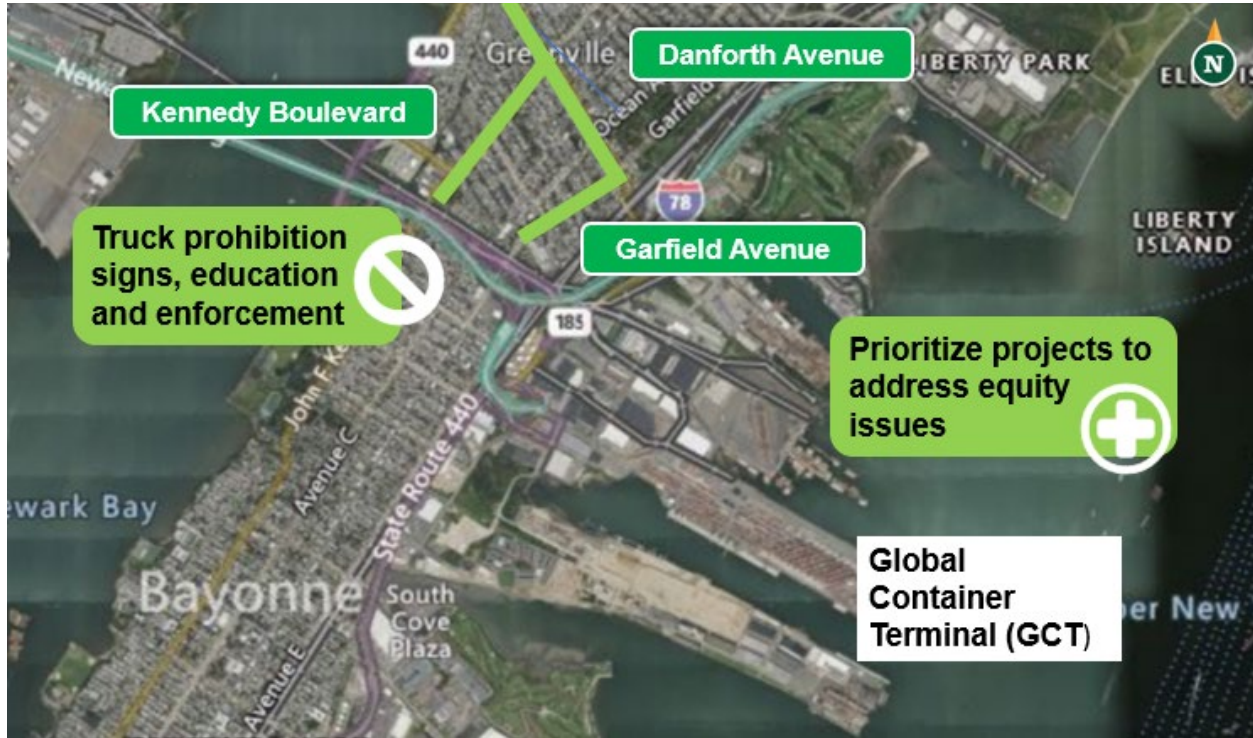


Figure 61: Focus Area 9 – Recommendations

An implementation matrix is shown in **Table 29**. Each recommendation is listed along with its focus area and location. For each recommendation, the responsible parties are listed along with a general time frame for implementation.

Table 29: Implementation Matrix for Each Focus Area and Recommendation

Recommendation and Location	Focus Area	Short term (less than 2 years)	Medium term (less than 5 years)	Long Term (greater than 5 years)	Agencies
Flexible shared spaces, Harrison	1	✓			Hudson County, Harrison

Recommendation and Location	Focus Area	Short term (less than 2 years)	Medium term (less than 5 years)	Long Term (greater than 5 years)	Agencies
Clay Street and Bridge Street Bridges TIP Projects, Harrison	1			✓	Hudson County, NJTPA, NJDOT
Frank E. Rodgers Boulevard TIP Project, Harrison	1		✓		Hudson County, NJTPA, NJDOT
I-280 Exit Ramp Extension, Kearny	2			✓	Hudson County, Turnpike Authority
Harrison Avenue Improvements, Harrison	2			✓	Hudson County, Harrison
Newark – Jersey City Turnpike Eastbound Improvements	2			✓	Hudson County, Turnpike Authority
Add Fish House Road Corridor to New Jersey Access Network, Kearny	3	✓			Hudson County, Kearny, NJDOT
Fish House Road TIP Project, Kearny	3	✓			Hudson County, NJTPA, NJDOT
Geometric Improvements at County Avenue and Secaucus Road, Secaucus	4			✓	Hudson County, Secaucus, NJTPA, NJSEA, NJDOT
Signal Improvements at County Avenue and Secaucus Road, Secaucus	4		✓		Hudson County, Secaucus, NJSEA
Signal Improvements at County Avenue and UPS	4		✓		Hudson County, Secaucus, NJSEA

Recommendation and Location	Focus Area	Short term (less than 2 years)	Medium term (less than 5 years)	Long Term (greater than 5 years)	Agencies
Drive / Turnpike Entrance Ramp, Secaucus					
Install Wayfinding and Truck Route Signs, Secaucus	4	✓			Hudson County, Secaucus
Evaluate Clearance Intervals on John F. Kennedy Boulevard, Jersey City	5	✓			Hudson County, Jersey City
New Road – TIP Project, Jersey City	5		✓		Hudson County, Jersey City, NJTPA, NJDOT
Air Quality Monitoring Project, North Bergen	5	✓			Hudson County, North Bergen
Place Type Strategies for Commercial Areas – Bergenline Avenue, West New York and North Bergen	6	✓			Hudson County, West New York, North Bergen
Proposed 83 rd Street Improvement, North Bergen	6			✓	Hudson County, North Bergen, NJTPA, NJDOT
Place Type Strategies for Commercial Areas – Washington Avenue, Hoboken	7	✓			Hudson County, Hoboken
Install Wayfinding and Truck Route Signs, Hoboken	7	✓			Hudson County, Hoboken
Ongoing Congestion and Safety Studies on John F.	8	✓			Hudson County, Jersey City

Recommendation and Location	Focus Area	Short term (less than 2 years)	Medium term (less than 5 years)	Long Term (greater than 5 years)	Agencies
Kennedy Boulevard, Jersey City					
Install Truck Prohibitions on Broadway, Sip Avenue, and St. Paul's Avenue. Improve Newark Avenue to address increased truck traffic.	8	✓			Hudson County, Jersey City, NJTPA
Install Wayfinding and Truck Route Signs – John F. Kennedy Boulevard and Tonnelle Ave, Jersey City	8	✓			Hudson County, Jersey City
Place Type Strategies for Commercial Areas – Journal Square, Jersey City	8	✓			Hudson County, Jersey City
Install Truck Prohibitions on Danforth Avenue and Garfield Avenue, Jersey City.	9	✓			Hudson County, Jersey City
New Jersey Turnpike Newark Bay – Hudson County Extension Program	9			✓	Hudson County, Bayonne, Turnpike Authority

VIII. Conclusion

The comprehensive examination of trucking through the Hudson County Truck Routes Assessment has provided valuable information on truck transportation in Hudson County. The study outlines the current conditions of trucking and freight related infrastructure, and how it interacts with and affects the local Hudson County community. Specific issues have been identified, and recommendations have been developed which define short and long term infrastructure needs, policy considerations, and equity goals.

Following the study, the next steps are for the County to work with municipal partners, the business community, and residents to consider policy changes and infrastructure investment. The place type improvement strategies may be further examined and considered in more detail for implementation at specific locations throughout the county. The focus area recommendations provide potential proven, evidence-backed solutions to address specific, identified issues. Numerous capital projects have been identified to make trucking safer and more efficient. The County will seek additional grant funding to pursue specific projects identified in the recommendations. In particular, the County will continue to pursue grants through the NJDOT's Local Freight Impact Fund, which the county has pursued in the past, along with United States Department of Transportation funding, supported by and within the context of a prioritized comprehensive plan.

While the demand for goods continues to increase, the available space for roadways and infrastructure is static. In order to meet the needs of goods movement, the efficiency of existing facilities and infrastructure must be increased, while also improving safety and preventing harm to our communities and residents. This is a complex and difficult challenge. It can only be achieved through strategic planning, design, policy, and investment to enhance the current system without disruption.

Finally, Hudson County will continue the dialogue with industry professionals, local businesses, and community organizations and residents. As we are all connected by trucks through the supply chain, we must all work together to implement effective and equitable changes which benefit everyone.

Appendix A

Task 2A: Public Outreach



Technical Advisory Committee (TAC) Meeting #1



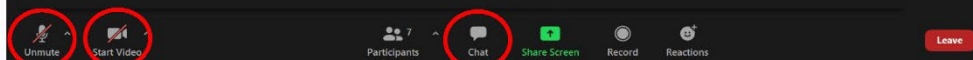
HUDSON COUNTY TRUCK ROUTES ASSESSMENT

Technical Advisory Committee Meeting #1
August 10, 2022





Zoom Meeting Guidelines

- Muted upon entry
- Video optional
- Chat function available for questions



Introductions/Welcome

Project Team

- Hudson County Division of Planning 
- North Jersey Transportation Planning Authority (NJTPA) 
- Consultant Team
 - GPI
 - FHI Studio
 - Arup
 - Cheng Solutions, LLC



3

Agenda

- Study Purpose & Need
- Study Work Plan
- TAC Roles & Responsibilities
- Public Engagement Plan
- Data Assessment & Initial Findings
- Discussion/Next Steps



Purpose & Need

Enhance the efficient movement of trucks through Hudson County and support the trucking industry through infrastructure improvements and policy recommendations, while reducing negative impacts to traffic, safety, and our communities.



Need

- Congestion
- Emission/noise levels
- Crashes
- Pavement/bridge wear
- Roadway design/geometries
- Community impacts



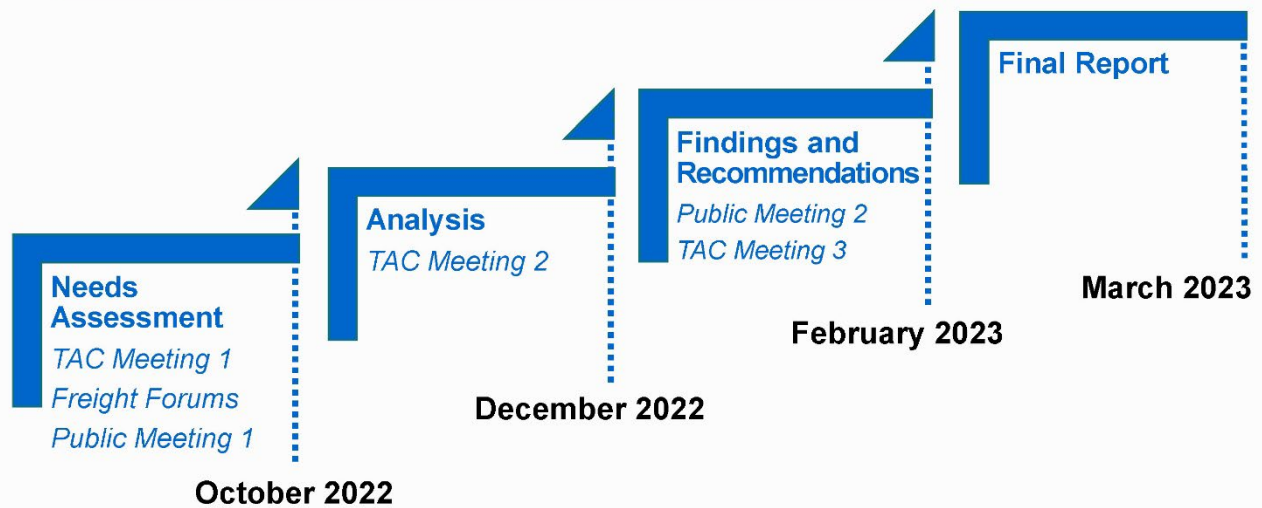
Goals

- Develop policy, regulatory, and infrastructure recommendations to:
- Improve truck flow
 - Reduce negative community impacts



5

Study Work Plan



6

TAC Roles & Responsibilities

- Guidance on overall study direction and development
- Review analysis, recommendations and work products
- Input on study topics, insights and expertise for discussion
- Provide knowledge of local projects and issues/concerns
- Assist with outreach efforts



Public Engagement Plan



What/Why

- Provide education/share info about freight trucking and its role in Hudson County
- Identify best practices and challenges faced by the trucking industry
- Understand effects/impacts on residents and businesses
- Facilitate an inclusive dialogue

How

- Branding
- Social media
- TAC meetings
- Freight Forums
- Public meetings
- Newsletter
- Survey
- Website

hcnj.us/trucking-study

8



Data Assessment

Mobility and Efficiency



Data:

- Truck origin-destination
- Truck route data
- Local deliveries/curb management

Road Conditions



- Pavement conditions
- Bridge conditions
- Maintenance schedules

Safety



- All crashes and individual truck crash locations
- Travel patterns and speed

Data Assessment

Community Impacts



Data:

- Equity/EJ population
- Emissions
- Noise

Economic Activity and Value



- Freight activity
- Economics
- Trucking facilities & business districts

Requires Stakeholder Input



Literature review and case studies

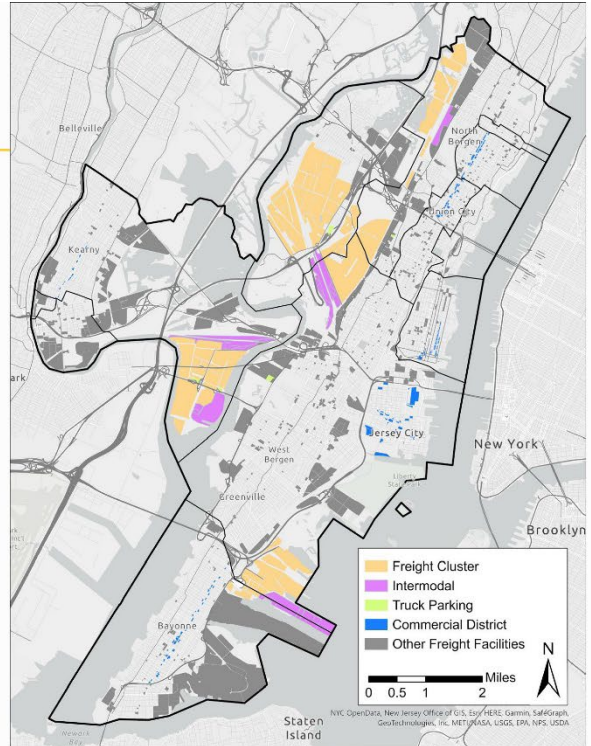
- Preferred network and industry needs
- Deliveries and curb management
- Technology and best practices



Initial Findings: The Big Picture

Parcel Types Studied

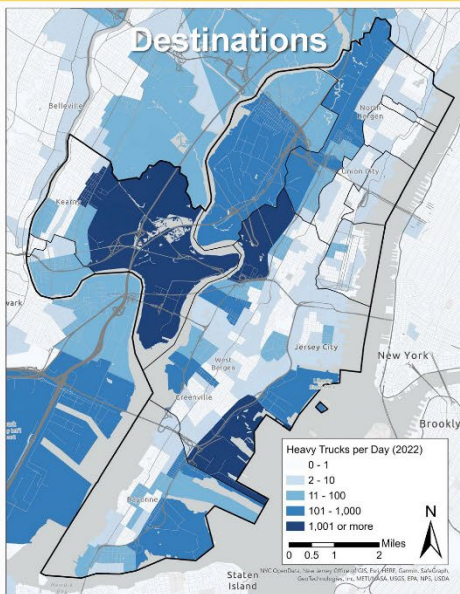
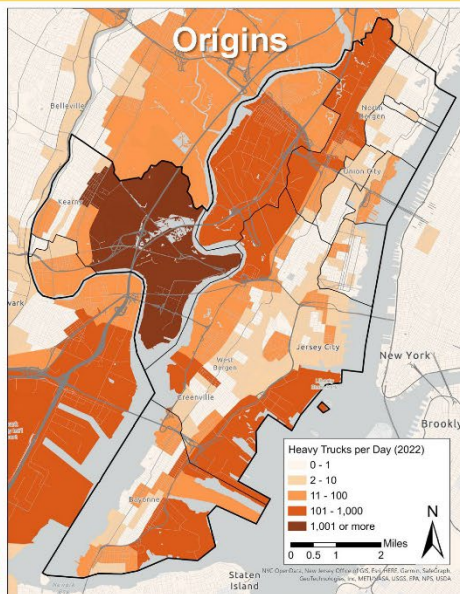
- Freight Cluster
- Intermodal
- Truck Parking
- Commercial District
- Other Freight Facilities



11



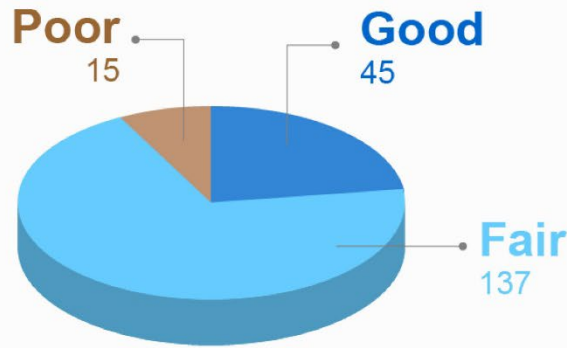
Initial Findings: Heavy Truck O/D



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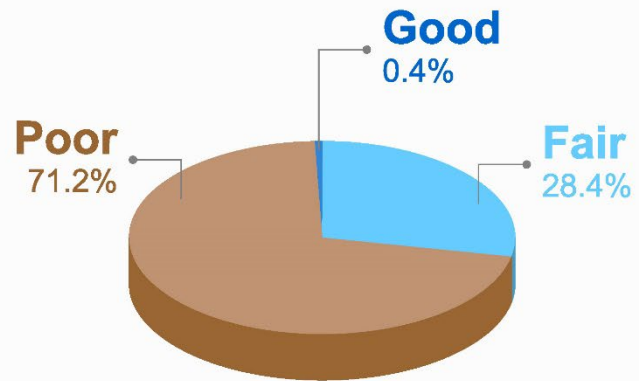


Initial Findings: Hudson County Road Conditions



197 Bridges

Source: FHWA 2021 Bridge Condition Data



National Highway System Pavements

Source: NJDOT Pavement Management System

15



Initial Findings: Safety

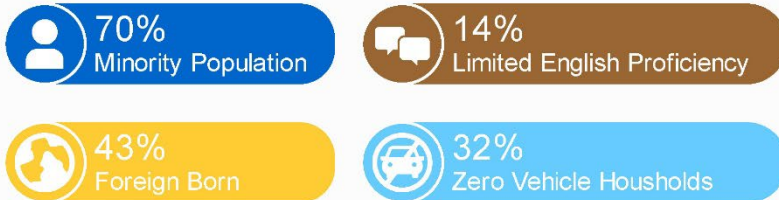
- 1,069 County-wide truck crashes, 2017-2021
- 24 truck crashes (14 fatal) with pedestrians/cyclists, County roads, 2010-2019
- Five high crash corridors
 - CR501, CR508, CR653, CR681 (two locations)



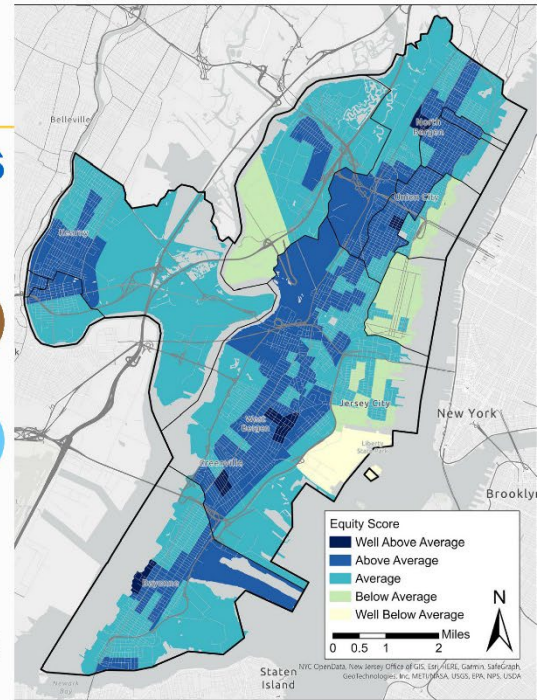


Initial Findings: Community Impacts

Demographics

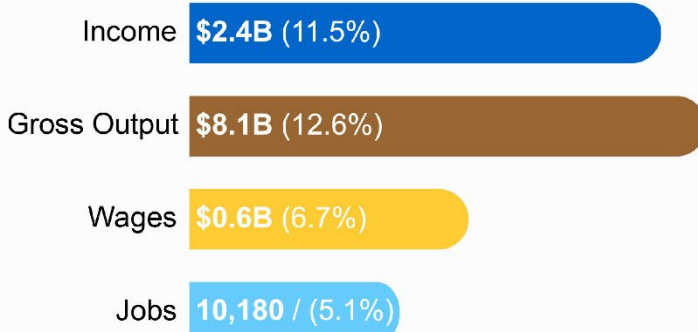


Noise/Emissions Problem Locations



Initial Findings: Economic Activity/Value

Transportation/warehousing share of Hudson County economy



Inbound Markets % of Tonnage



Outbound Markets % of Tonnage



Over 75% of Hudson County freight activity is by truck



Discussion

- Are there any specific areas of concern you are aware of that we should investigate?
- Are there any projects that you are aware of that will affect trucking in the region?
- Are there any best practices from elsewhere that should be considered for Hudson County?
- Other thoughts/suggestions?



Next Steps

- Complete data collection
- Hold Freight Forums in early September
- Hold Public Meeting #1 in late September
- TAC Meeting 2 in December

Thank You!

Contact

Kevin Force, Project Manager

kforce@hcnj.us

www.hcnj.us/trucking-study

countyplanning@hcnj.us

HUDSON COUNTY TRUCKING STUDY

TECHNICAL ADVISORY COMMITTEE (TAC)



Meeting #1 - Minutes (or Summary)

Date: August 10, 2022

Time: 2:00 PM

Meeting Recording: <https://bit.ly/3wyCD71>

Prepared: August 17, 2022

Purpose

The primary objectives of TAC Meeting #1 were to:

- Review study purpose, goals, work plan, and TAC role
- Get feedback on initial data findings
- Explore TAC local/regional expertise and best practices

Meeting Attendees (32)

NJTPA

William Long
Chris Wichman

Hudson County

Kevin Force
Francesca Giarratana
Thomas Malavasi
Finn Hagerty
Byron Nicholas
Daryl Krasnuk

Member Agencies

Jay DiDomenico Hudson TMA

Nipa Maniar

Nady Moini

Lu Ding

Rosemary Nivar

Abraham Abreu

Leslie Fordjour

Stephan Pezdek

Member Agencies, Cont.

Zoe Baldwin

Tiffany-Ann Taylor

NJDOT

NJSEA

NJ Turnpike Authority (NJTA)

NJTA

NYC Planning

NYMTC

PANYNJ

RPA

RPA

Municipalities

Greg Francese

Hoboken

HUDSON COUNTY TRUCKING STUDY



TECHNICAL ADVISORY COMMITTEE (TAC)

		Consultant Team
Mike Manzella	Jersey City	
Kevin Wong	Jersey City	Josh Curley Arup
Stephen Marks	Kearny	Ethan Ebinger Arup
Janet Castro	North Bergen	Ken Hausman GPI
Lt. Otto Cruz	North Bergen	David Kuhn GPI
Razzaq Manley	Secaucus	Julia Steponanko GPI
Jennifer Modi	Secaucus	Stephanie Brooks FHI Studio

Meeting Summary

1. Introduction/Welcome
2. Project Purpose, Need & Goals
 - Included key statistics about the County and freight
3. Project Work Plan & TAC Role

Provided general overview
4. Public Engagement Plan
 - Noted that if attendees had any recommended community groups to please reach out to project team with information.
5. Data Assessment & Analysis/Initial Findings
 - Shared initial findings: truck origin and destination routes, predominant roadway use, infrastructure conditions, etc.
6. Questions/Discussion
 - The following summarizes the key points of discussion.

Chat Questions

- a. *Nady Moini, NJSEA*: I was wondering whether your analyses focus on County roads or all roads in Hudson County.
 - *Verbal response*: Kevin Force, Hudson County, responded that the focus is on all roads within the County that have significant truck traffic, with recommendations for County roads and a few local roads, in partnership with municipalities.

TECHNICAL ADVISORY COMMITTEE (TAC)

- b. *Stephan Pezdek, PANYNJ*: Is the study going to be looking at truck storage/ truck parking areas for overnight for truckers to stop at?
- *Verbal response*: K. Force responded that the study team will be examining truck storage/parking areas to determine if there is a need for additional storage/parking.
- c. *Nady Moini*: Are you developing truck weighting network map based on different classification of heavy trucks?
- *Verbal response*: Ken Hausman, GPI, responded that the INRIX data and the NJTPA regional model only identify trucks that are greater than 26,000 pounds. He inquired if NJSEA is retrieving that data as part of the master signal system (MASSTR). N. Moini responded that MASSTR does not use weight classifications, but NJSEA is looking at weight classification as part of their recommended projects since some roadway infrastructure is not yet able to handle large trucks. K. Force added that the team would like to review weight classification as part of the study to determine if truck restrictions or alternative routes are needed. The team wants to develop a high-level truck map as part of this study, similar to what the NYCDOT did for New York City. K. Hausman asked S. Pezdek if the Port Authority is tracking truck weight data. S. Pezdek responded that this information is not usually pertinent to their work.
- d. *Byron Nicholas, Hudson County*: Lu, is there traffic forecasting data from NJTA that was used you can send the County?
- *Verbal response*: Lu Ding, NJTA, responded that she will provide forecasting data to Hudson County.

Verbal Questions

- e. L. Ding asked if the team was using future forecasts of potential increases in truck traffic.
- K. Force responded that the study team is using the NJTPA regional transportation model, which examines conditions through 2045. K. Hausman added that sources include the NJTPA Freight Forecast Tool, and regional transportation models. L. Ding added that the NJTA has been coordinating with PANYNJ on the Global Terminal expansions and asked if the County is examining these expansions. K. Force responded that the County is not tracking these projects and asked if NJTA could provide any pertinent information about future expansion plans. PANYNJ



TECHNICAL ADVISORY COMMITTEE (TAC)

ports division was also involved in discussions. S. Pezdek noted that the Port is trending at a volume approximately 40% higher than 2019 due to the COVID-19 pandemic shift from west coast ports. K. Hausman added that this additional information can be added to the data collected. S. Pezdek will discuss with members of his department and share any projections the Port department is working on with NJTA with Hudson County.

- f. Kevin Wong, Jersey City, asked if zoning was going to be considered as part of the study, particularly since the amount of truck repair stations and related facilities in the County is directly responsible for the number of trucks in the area. Particularly the area around Duncan Avenue.
- K. Force responded that the County has not yet examined zoning regulations and instead focused on land use and building footprints but can investigate current zoning to determine recommendations for any updates or developments.

Verbal Discussion

- g. Are there any specific areas of concern you are aware of that we should investigate?

Mike Manzella, Jersey City, responded that preventing truck traffic on local Jersey City streets is a priority, particularly at Journal Square and along Communipaw Avenue. K. Force responded that this is good information to have, as the study will examine the viability of truck restrictions. K. Force asked if there are any truck restrictions in Jersey City; M. Manzella responded that there are none that he is aware of but will review the issue and provide the County with any additional information.

- h. Are there any projects that you are aware of that will affect trucking in the region?

L. Ding noted that the NJTA is planning to replace/enhance the I-78 corridor through Bayonne and Jersey City. A key project is to replace the Newark Bay Bridge, doubling capacity by twinning the bridge. Construction will begin in 2026. The GPI team suggested a meeting with Hudson County, the NJTA, and Jersey City to discuss

M. Manzella noted that NJDOT's New Road project will help relieve congestion on US Route 1&9 by diverting trucks onto the same (to date, only a portion is under construction). Thomas Malavasi, Hudson County, added that NJDOT likely has

HUDSON COUNTY TRUCKING STUDY



TECHNICAL ADVISORY COMMITTEE (TAC)

projections for this project and can inquire with NJDOT if that information is available.

Zoe Baldwin, Regional Plan Association (RPA), complimented the presentation and conversation, and flagged the need to connect with Hudson County regarding the upcoming e-commerce study spearheaded by RPA. K. Force will be in touch to discuss and share study findings with RPA.

i. Are there best practices from elsewhere that should be considered for Hudson County

S. Pezdek noted that AIA New York (American Institute of Architects) is developing a document regarding on-street deliveries and streetscaping for last-mile and e-commerce issues. These ideas are pertinent for residential streets and could be helpful to the County. Upon its release, S. Pezdek will pass this document on to Hudson County.

M. Manzella added that many cities, including New York City, are working on pilot programs to provide local deliveries via smaller vehicles such as e-bikes and e-scooters, to reduce medium-sized truck activity. The study team should review this information. K. Force responded that this is also being considered for Hudson County, where feasible, depending on the delivery type.

7. Next Steps/Schedule

- Complete data collection
- Hold Freight Forums in early September
- Hold Public Meeting #1 in late September
- • TAC Meeting 2 in December

Meeting was adjourned at 3:03 pm

Action Items:

- Lu Ding, NJTA, will provide forecasting data to Hudson County
- Stephan Pezdek, PANYNJ, will discuss with members of his department and share any projections the Port department is working on with NJTA with Hudson County

HUDSON COUNTY TRUCKING STUDY



TECHNICAL ADVISORY COMMITTEE (TAC)

- Mike Manzella, Jersey City, will review any truck restrictions and provide the County with any additional information
- Kevin Force, Hudson County, will follow up to arrange a meeting with Hudson County, the NJTA, and Jersey City to discuss the I-78 corridor project
- Kevin Force, Hudson County, will reach out to RPA discuss the upcoming e-commerce study spearheaded by RPA
- Once released, Stephan Pezdek, PANYNJ, will provide to Hudson County the AIA New York on-street deliveries and streetscaping document \
- The Project Team will provide attendees with a copy of the presentation in PDF format (*completed August 11, 2022*).

Copy: Attendees; File

This summary is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Stephanie Brooks, FHI Studio, at sbrooks@fhistudio.com within 10 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Technical Advisory Committee (TAC) Meeting #2

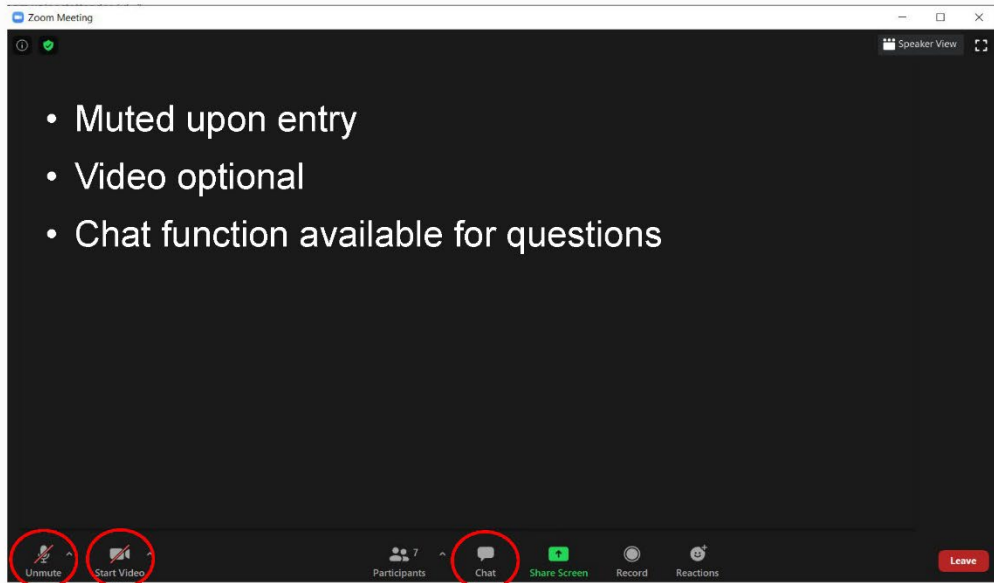


HUDSON COUNTY TRUCK ROUTES ASSESSMENT

Technical Advisory Committee Meeting #2
February 9, 2023



Zoom Meeting Guidelines



Introductions/Welcome

Project Team

- Hudson County Division of Planning
- North Jersey Transportation Planning Authority (NJTPA)
- Consultant Team
 - GPI
 - FHI Studio
 - Arup
 - Cheng Solutions, LLC



3

Agenda

- TAC Meeting Purpose
- Outreach/Feedback Received
- Data Analysis, Findings and Recommendations
- Discussion
- Next Steps



4

TAC Meeting Purpose

- Feedback on additional analysis presented
- Guidance on overall study recommendations
- Provide knowledge of local projects and issues/concerns
- Assist with additional outreach efforts



5

Outreach/Feedback Received

6

TAC Meeting #1

August 17, 2022

- Study overview, TAC role, initial data findings
- TAC members provided information on:
 - ✓ Forecasting data
 - ✓ Traffic projections
 - ✓ Key problem areas

7

Virtual Freight Forums

September 21: Policy & Economy Forum

September 27: Local Deliveries

September 27: Warehousing & Distribution

Key Issues

- Infrastructure and geometry (upgraded signage, striping, signals, adding capacity and breakdown lanes)
- Parking access (both municipal parking and loading zones)
- New technologies of interest, but cost prohibitive

8

Virtual Public Information Meeting

November 3, 2022

Key Issues

- Large delivery trucks using local streets as cut-throughs
- Trucks are in restricted areas, enforcement is critical
- Disconnect in “no truck” signage vs. actual restricted areas
- Trucks are double parking, crosswalks and bike lanes are blocked, loading zones are needed
- Weehawken problem areas: JFK Boulevard East, local streets off Tonnelle Ave., and local streets off Lincoln Tunnel onto Park Ave.
- Jersey City problem areas: local streets in St. Paul’s neighborhood

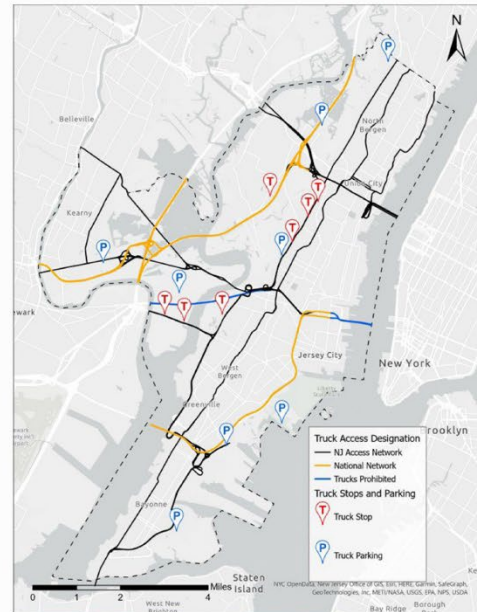
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Data Analysis, Findings, Recommendations

10




Data Analysis















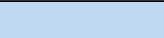



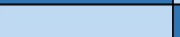





















Truck Volumes and Travel Patterns
Congestion
Safety
Pavement
Bridges
Equity
Emissions
Noise
Intermodal Terminals
Commercial and Warehouse Areas
Truck Routes and Truck Parking



11

Place Types

	Effectiveness
High	
Medium	
Low	

	Commercial	Commercial (Mixed Use)	Residential	Industrial
 Curb Loading Zone				
 Curb Demand Management				
 Shared Space				
 Off-Hour Delivery				
 Delivery Consolidation				
 Enforcement				
 Outreach				
 Technology and Innovation				

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Commercial/Commercial (Mixed-Use)

Examples

- Harrison Ave and Frank Rodgers Blvd, Harrison
- Paterson Plank Road, Union City
- Kennedy Blvd, Jersey City
- Newark St, Hoboken

Effective Strategies

- Curb loading zones
- Curb demand management
- Shared space
- Enforcement
- Outreach



13

Residential

Examples

- Throughout Hudson County

Effective Strategies

- Improved signage, enforcement
- Low-cost approaches to daylight intersections
- E-Cargo bikes
- Consolidated delivery sites



14



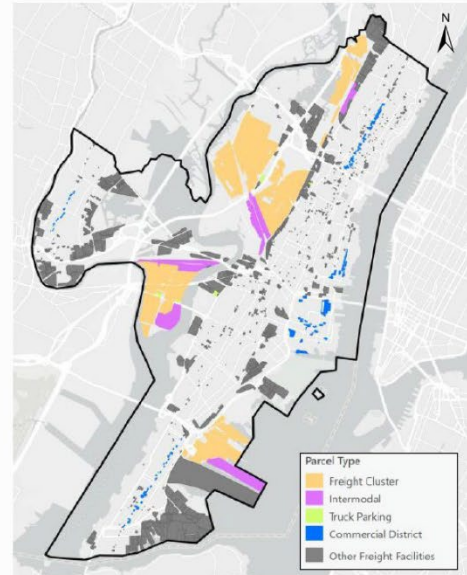
Industrial

Examples

- Intermodal Terminals
- Freight Clusters

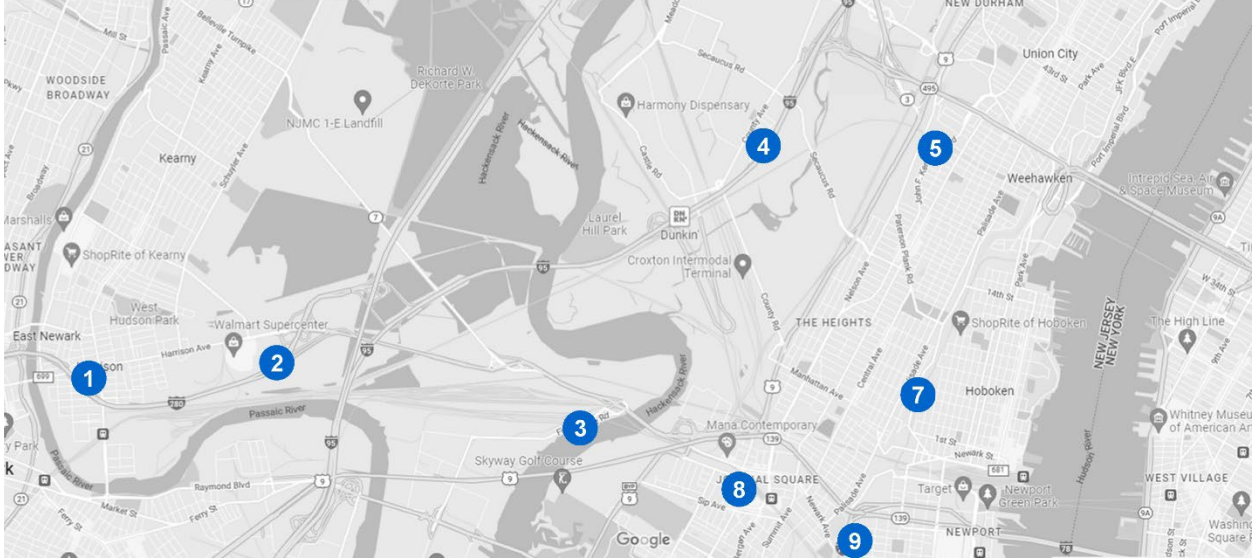
Effective Strategies

- Updated signage and wayfinding
- Geometric changes
- Engagement with other transportation agencies
- Truck parking and rest stops
- Public process for truck route changes
- Emissions, noise and equity

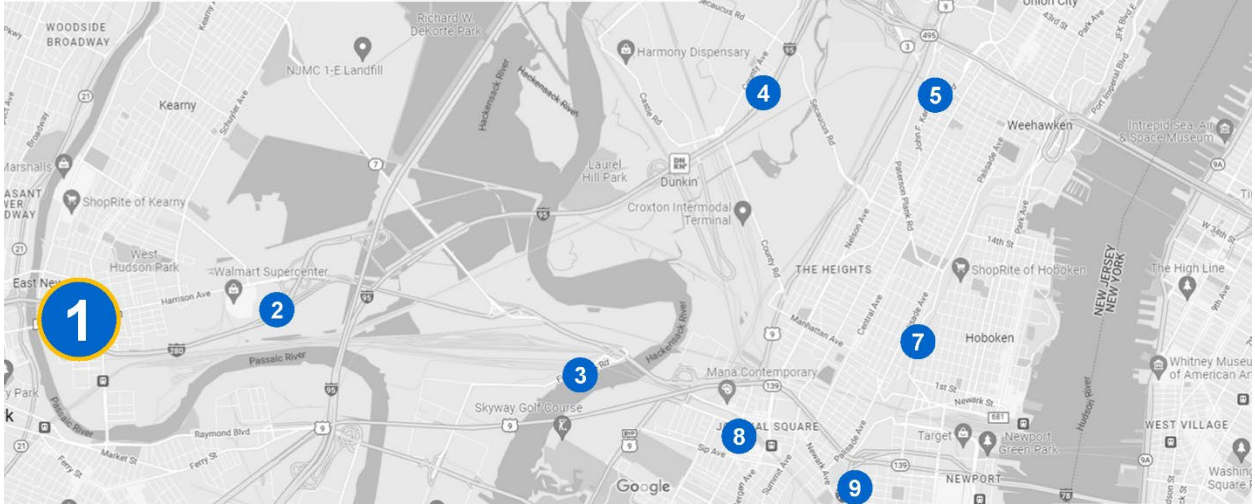


Discussion

Focus Areas



Focus Area 1: Harrison



1) Findings



ISSUES
 High truck volumes
 Safety
 Bridges
 Truck Routes
 Land Use
 Equity
 Emissions
 Noise

19

1) Findings (Harrison Ave./Church Sq.)



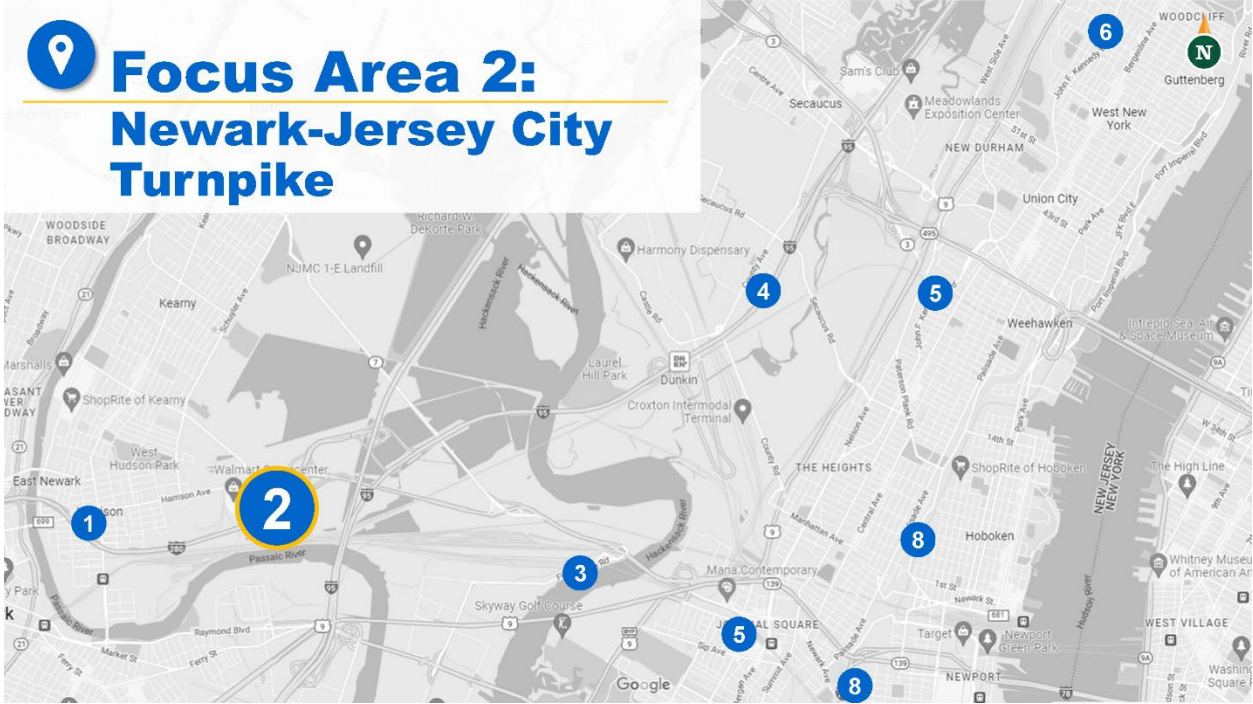
20

1) Recommendations

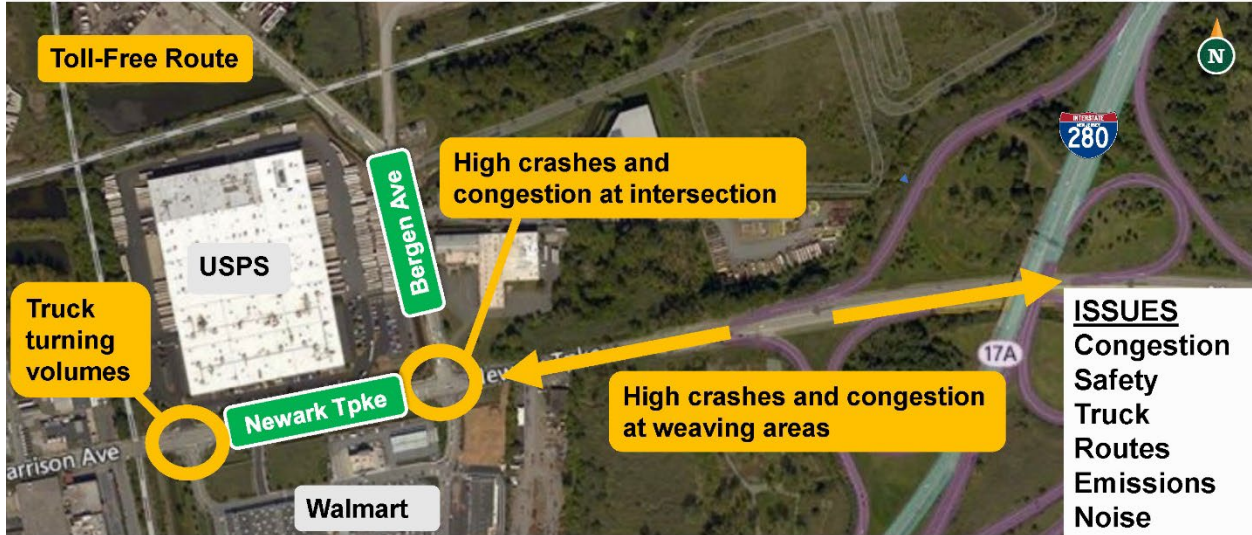


21

Focus Area 2: Newark-Jersey City Turnpike

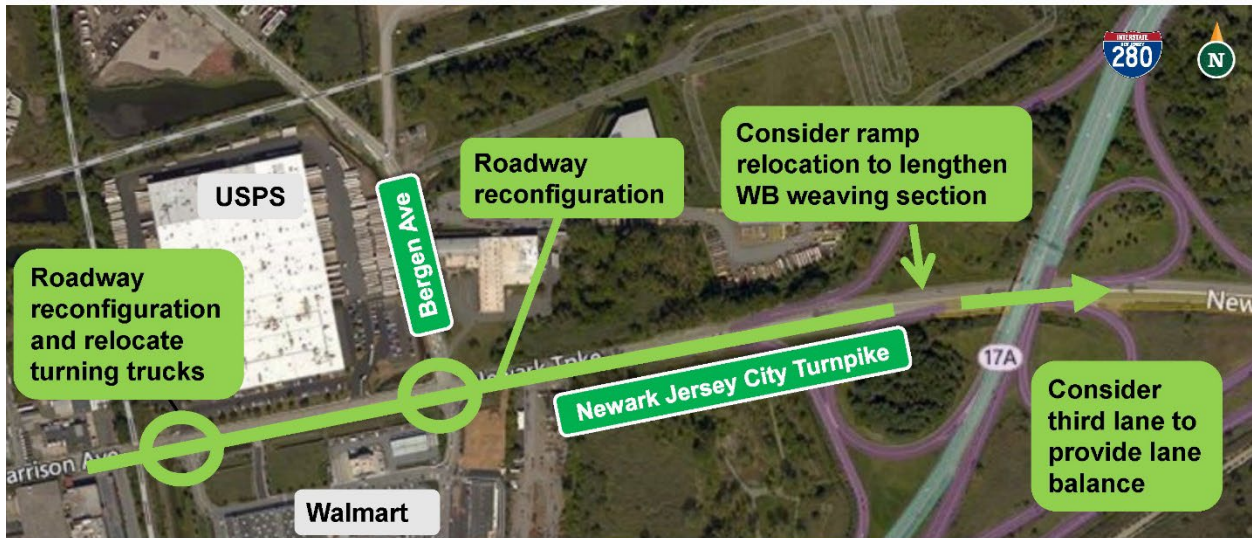


2) Findings



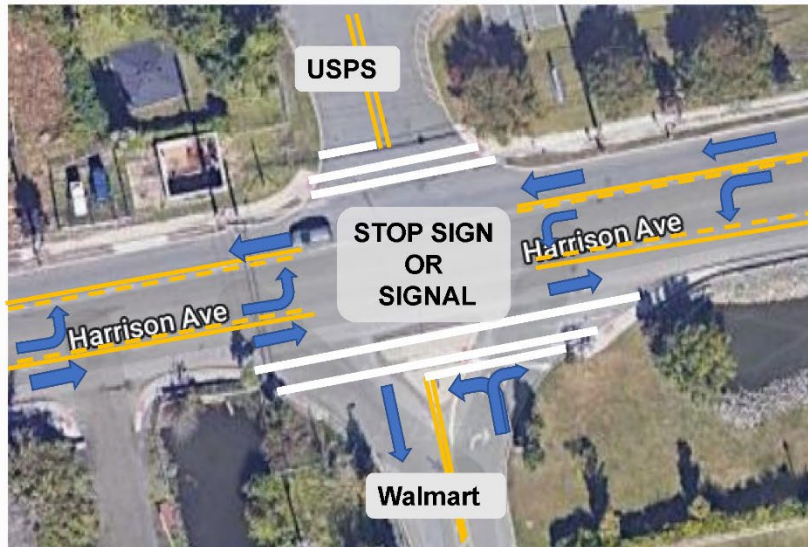
23

2) Recommendations



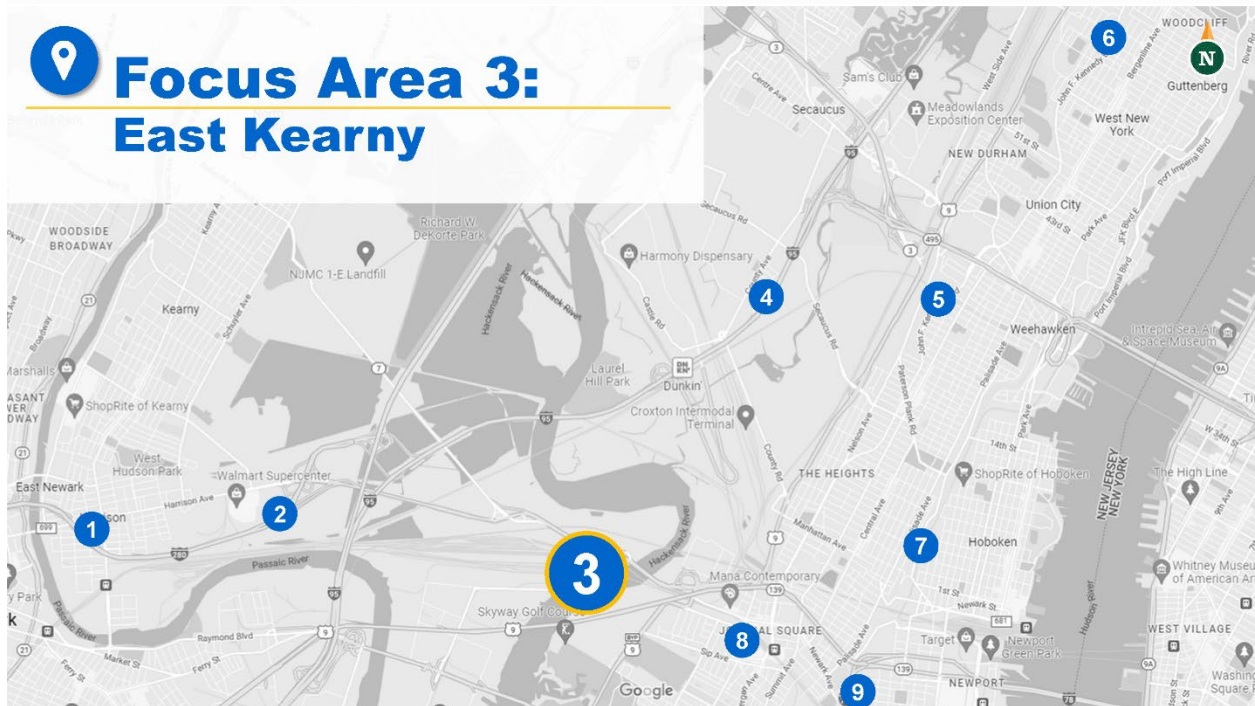
24

2) Recommendations (Road Reconfiguration)

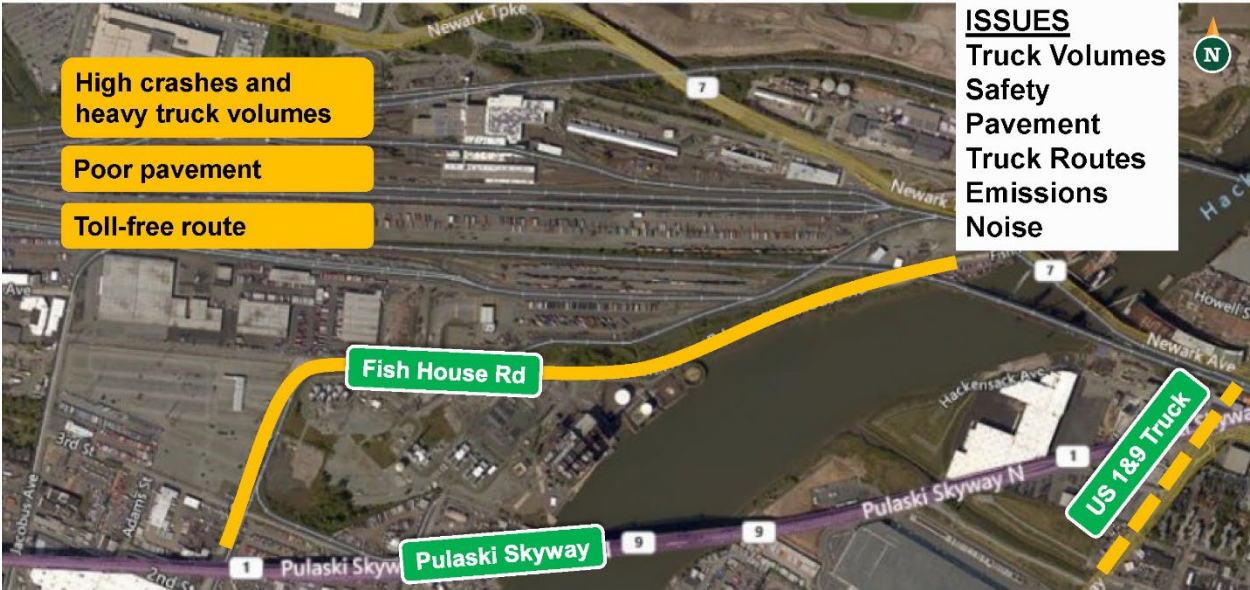


25

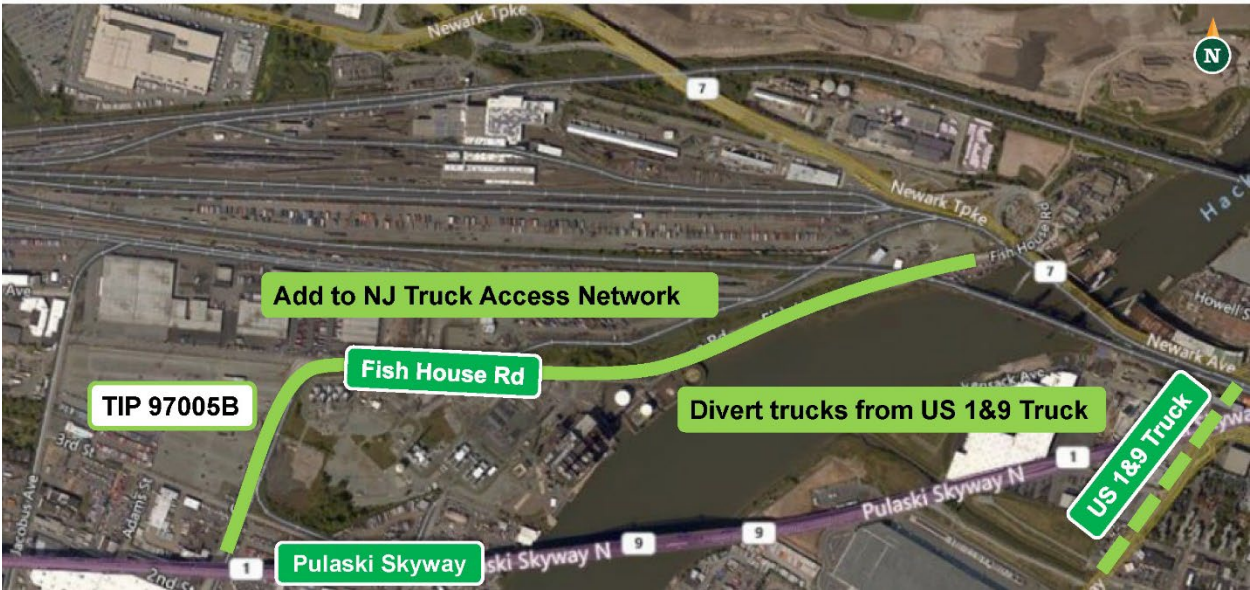
Focus Area 3: East Kearny



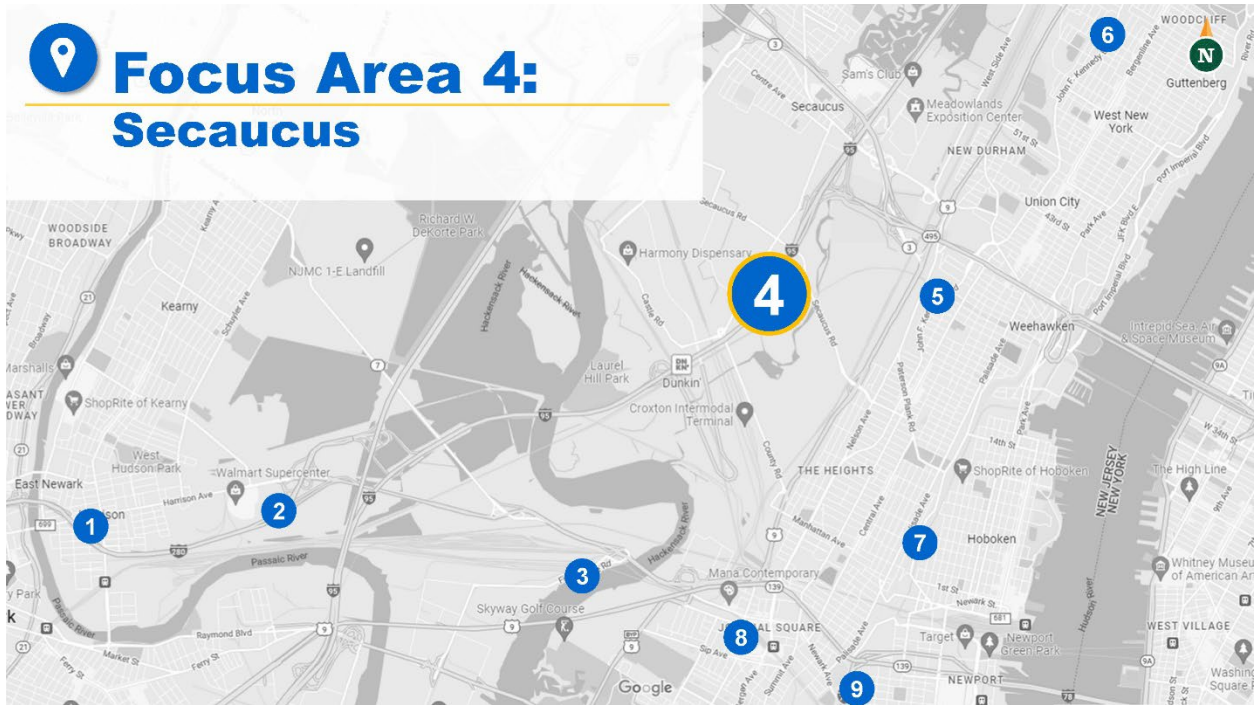
3) Findings



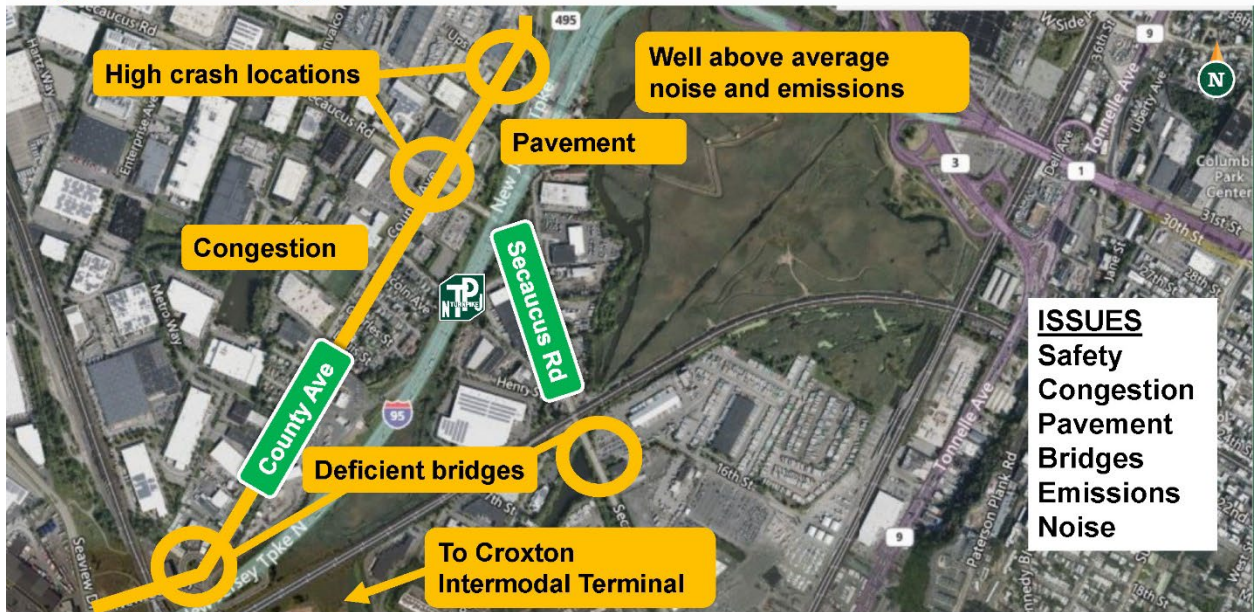
3) Recommendations



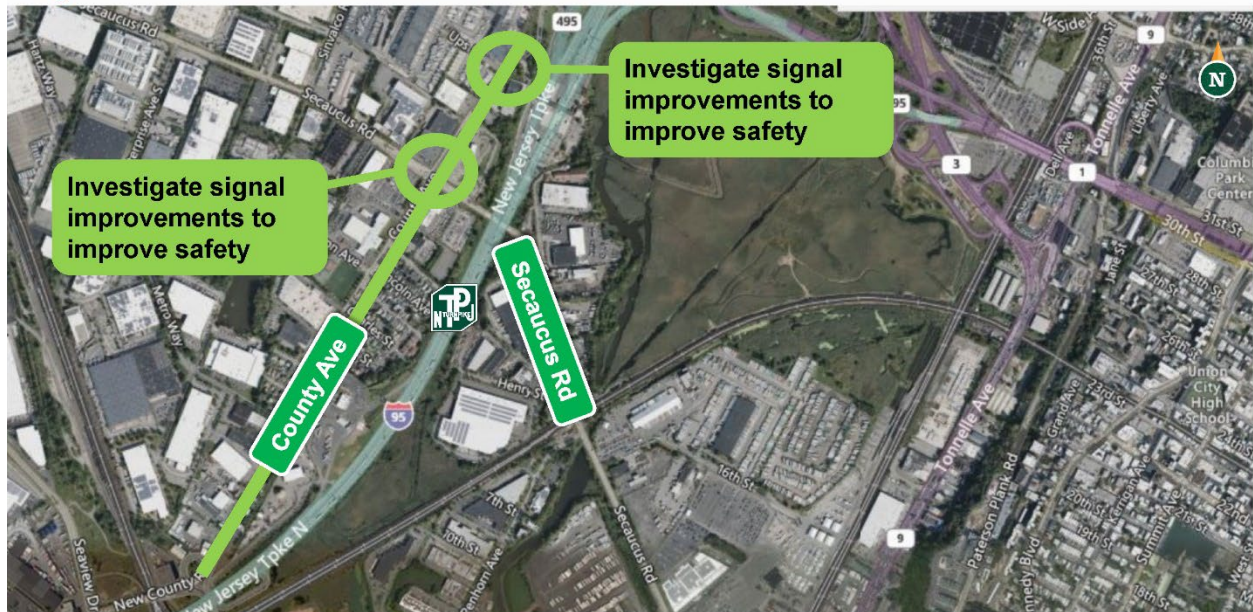
Focus Area 4: Secaucus



4) Findings



4) Recommendations



Focus Area 5: North Bergen Union City



5) Findings

ISSUES
 Safety
 Congestion
 Truck
 Routes
 Equity
 Emissions
 Noise



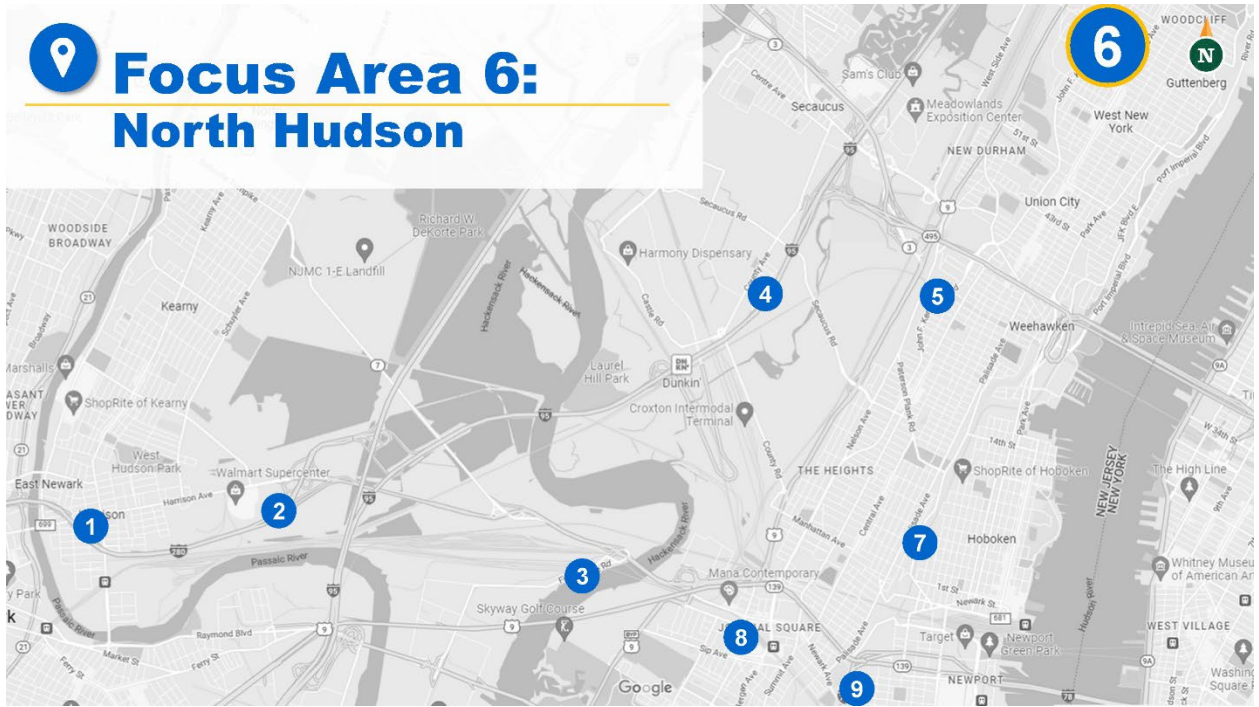
33

5) Recommendations



34

Focus Area 6: North Hudson



6) Findings



36

6) Findings (West Side Ave Connections)



83rd Street at CSX Railroad bridge

37

6) Recommendations



38

6) Recommendations (Bergenline Ave)

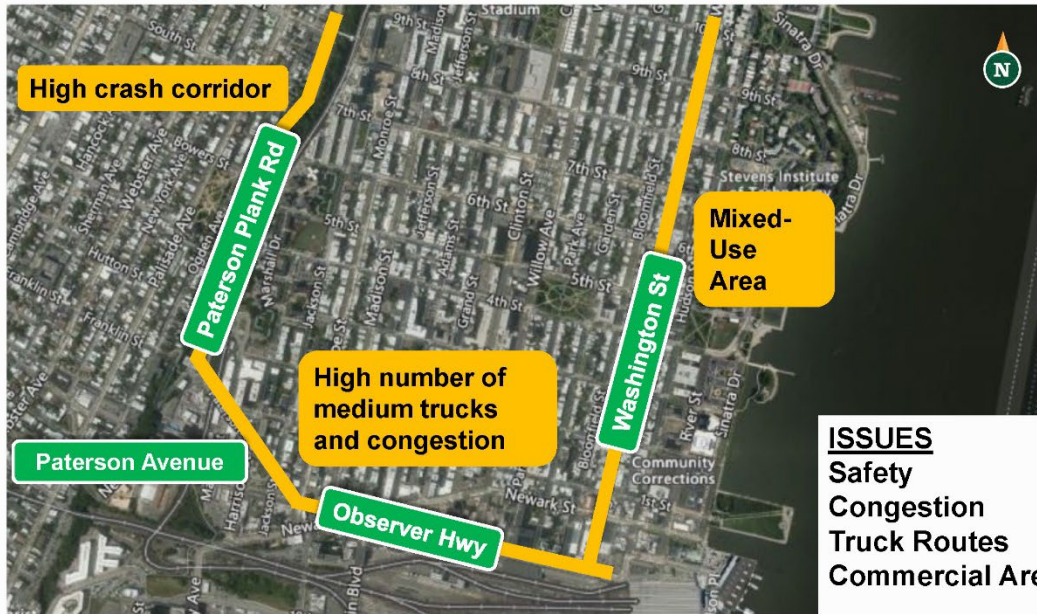


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Focus Area 7: Hoboken

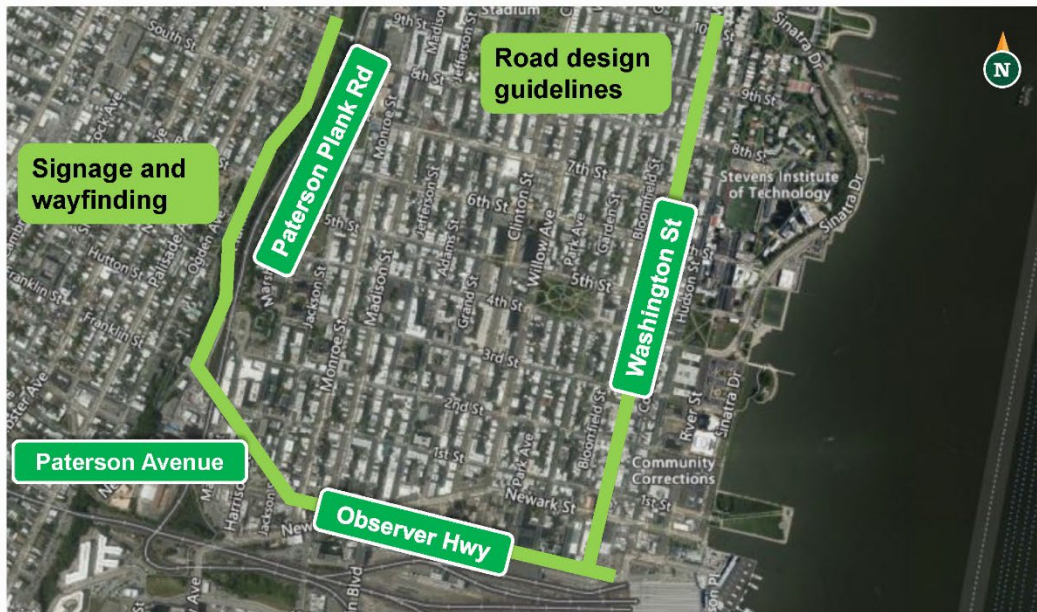


7) Findings



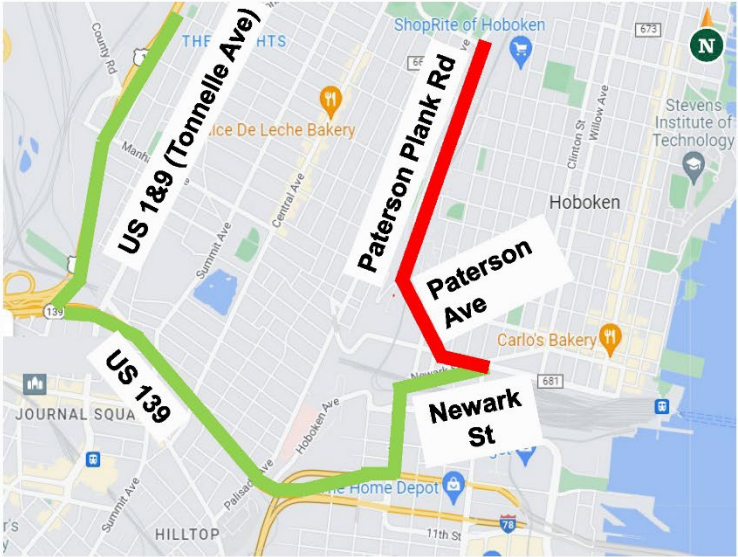
41

7) Recommendations



42

7) Recommendations (Alt. Truck Routes)

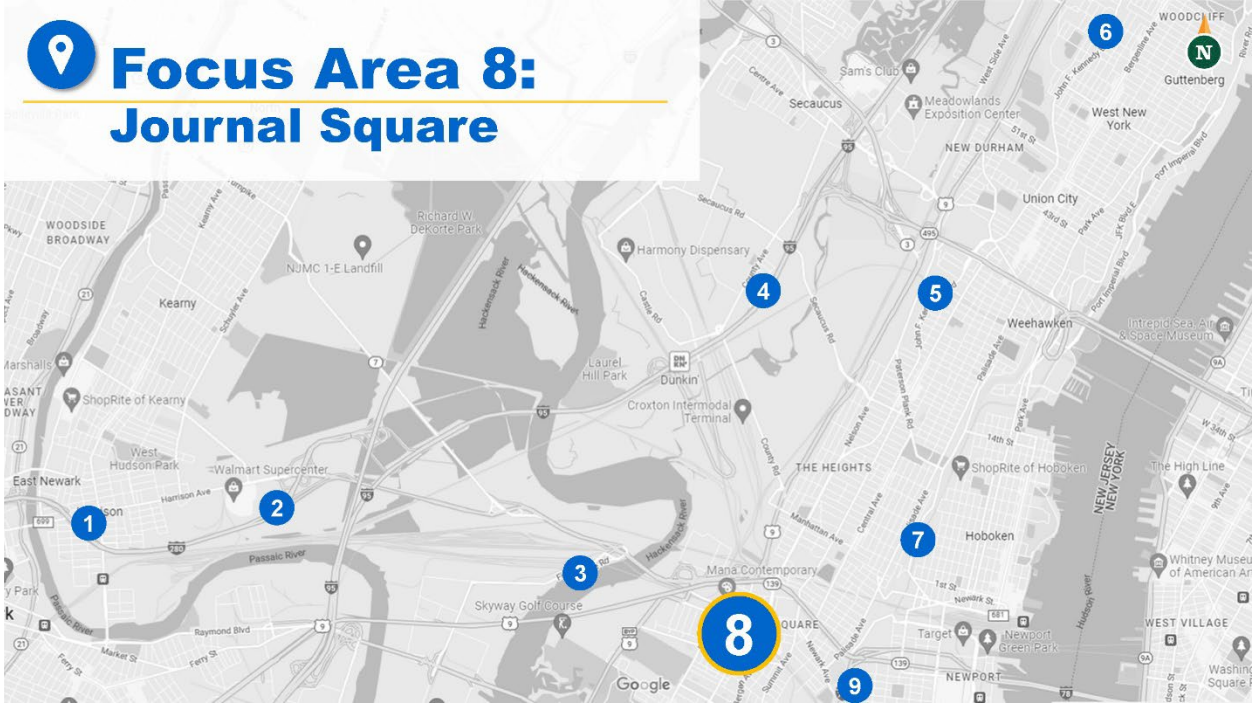


Legend

- Via Paterson Ave to Paterson Plank Road
- Via Newark Street to Route 139 to US 1&9

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Focus Area 8: Journal Square



8) Findings

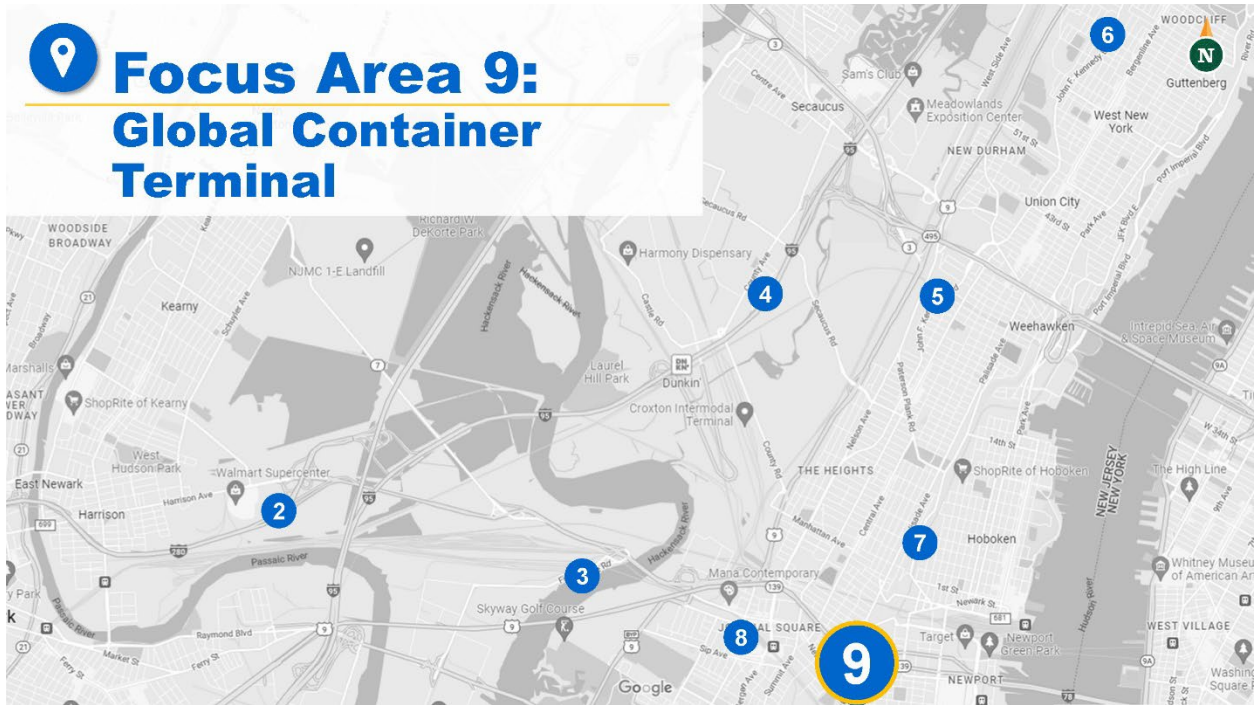


8) Recommendations



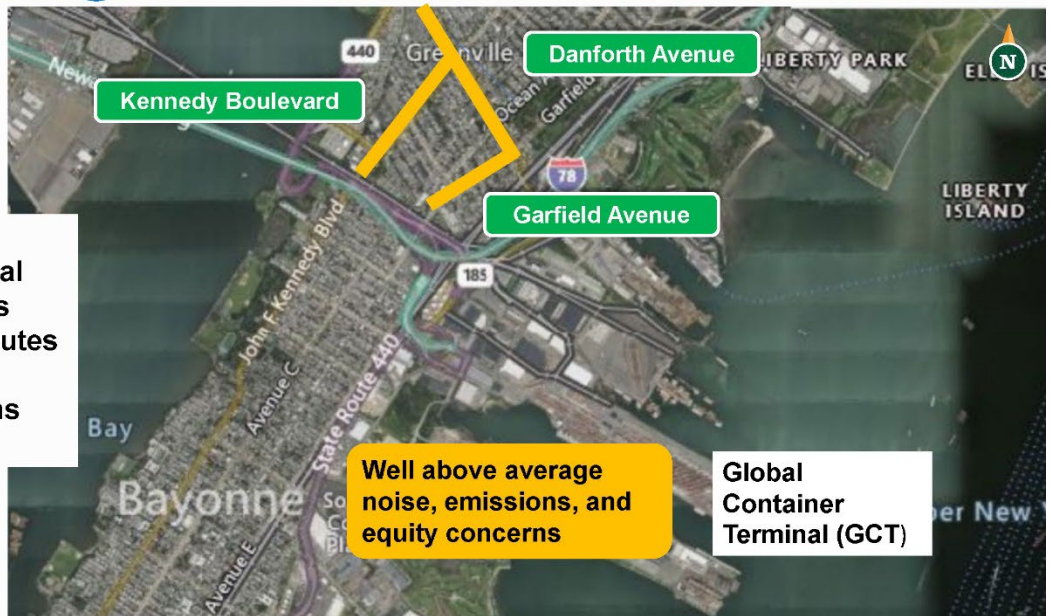


Focus Area 9: Global Container Terminal

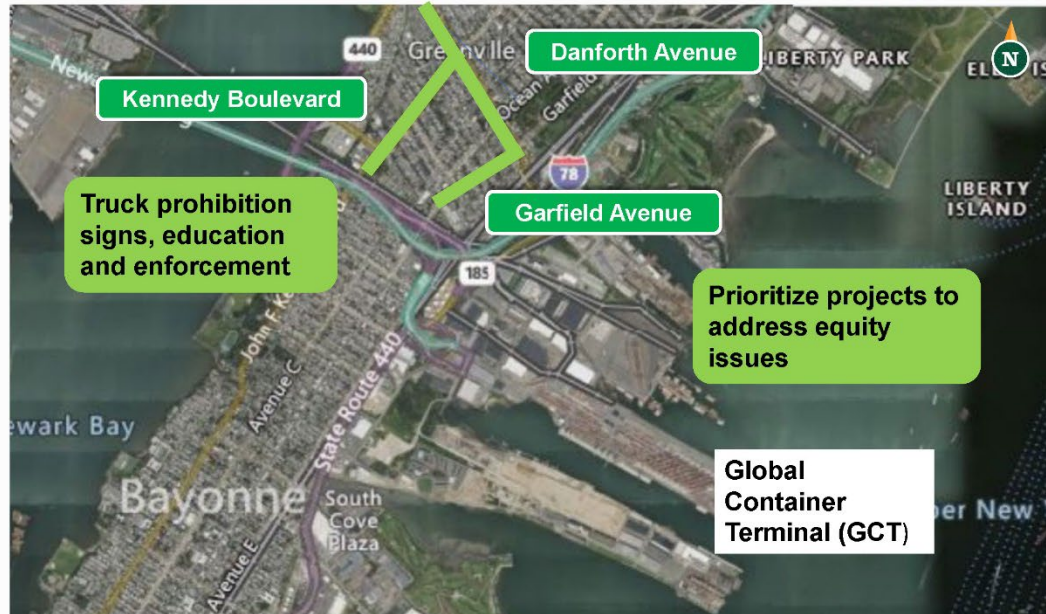


9) Findings

ISSUES
Intermodal
Terminals
Truck Routes
Equity
Emissions
Noise



9) Recommendations



Discussion

Next Steps

- Incorporate TAC feedback into Draft Report
- Hold Public Meeting #2 in late February 2023
- TAC Meeting 3 in April 2023

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Thank You!



HUDSON COUNTY TRUCKING STUDY

TECHNICAL ADVISORY COMMITTEE (TAC)



Meeting #2 – Minutes (or Summary)

Date: February 9, 2023

Time: 2:00 PM

Meeting Recording: <https://bit.ly/3Zh1jgb>

Prepared: February 21, 2023

Purpose

The primary objectives of TAC Meeting #2 were to:

- Receive feedback and guidance on additional analysis and recommendations presented
- Solicit knowledge of local projects and issues/concerns
- Obtain any assistance with additional outreach efforts, if needed

Meeting Attendees (30)

NJTPA

William Long

Hudson County

Kevin Force

Francesca Giarratana

Thomas Malavasi

Jose Sieira

Mark Serrano

Nipa Maniar

Nady Moini

Lu Ding

Rosemary Nivar

Abraham Abreu

Leslie Fordjour

Stephan Pezdek

NJDOT

NJSEA

NJ Turnpike Authority (NJTA)

NJTA

NYC Planning

NYMTC

PANYNJ

Member Agencies

Michael Verney Global Container Terminal

Luis Delgado Hudson TMA

Member Agencies, Cont.

Jazmyn Blackburn RPA

Municipalities

HUDSON COUNTY TRUCKING STUDY



TECHNICAL ADVISORY COMMITTEE (TAC)

Suzanne Mack	Bayonne	Consultant Team	
Greg Francese	Hoboken	Josh Curley	Arup
Ryan Sharp	Hoboken	Ethan Ebinger	Arup
Elias Guseman	Jersey City	Ken Hausman	GPI
Mike Manzella	Jersey City	David Kuhn	GPI
Lyndsey Scofield	Jersey City	Stephanie Brooks	FHI Studio
Stephen Marks	Kearny		
Nancy Guevara	North Bergen		
Razzaq Manley	Secaucus		

Meeting Summary

8. Introduction/Welcome

9. TAC Meeting Purpose

- Provided general overview

10. Outreach/Feedback Received

Overview of feedback received at TAC #1, Freight Forums, and Virtual Public Meeting #1

11. Data Analysis, Findings and Recommendations

- Shared further data findings regarding:
- Truck volumes/travel patterns
- Congestion
- Safety
- Pavement
- Bridges
- Emissions
- Equity

HUDSON COUNTY TRUCKING STUDY



TECHNICAL ADVISORY COMMITTEE (TAC)

- Intermodal terminals
- Noise
- Commercial and warehouse areas
- Truck routes/truck parking
- Shared data about area place types and effective traffic mitigation strategies including:
 - Commercial/mixed-use commercial
 - Residential
 - Industrial

Shared findings and recommendations for the following nine focus areas:

- Harrison
- Newark/Jersey City/NJ Turnpike
- East Kearny
- Secaucus
- North Bergen/Union City
- North Hudson
- Hoboken
- Journal Square
- Global Container Terminal

12. Questions/Discussion

- The following summarizes key points of discussion:



TECHNICAL ADVISORY COMMITTEE (TAC)

Place Type Findings Discussion

- j. *Stephan Pezdek, PANYNJ* appreciates that the team is exploring truck parking options and asked if the team collected information about number of spaces allocated in total and at each location, and how they are distributed.
 - i. *Ethan Ebinger, Arup* responded that the team has done a preliminary assessment of the existing number of spaces, and that this information has been sourced from trucking applications and crowdsourcing tools. This information needs to be confirmed.
 - ii. *Kevin Force, Hudson County* added that the team is also reviewing NJTPA studies regarding what currently exists, and that this information is consistent with what NJTPA has found. The team reached out to many industrial worker organizations to engage them in the Freight Forums, but attendance was sparse. Hudson County will continue to try other strategies to reach these groups in the future.
- k. *S. Pezdek* added that a key concern for PANYNJ is understanding the various public transportation options available within industrial areas, with an eye towards increasing transit availability so that workers can be more flexible in taking work shifts. Currently, it is difficult to access most industrial facilities during off-peak hours.
 - i. *K. Force* responded that this is critical information that needs to be considered, and although not a part of this study, other divisions within Hudson County are investigating this issue. *K. Force* added that NJ Transit is exploring revising bus routes to access more industrial areas, and Hudson County plans to follow up with them.
- l. *Suzanne Mack, Bayonne* asked for copies of the equity slides
 - i. Project team will send.

Focus Area Findings/Recommendations Discussion

- a. *Nady Moini, NJSEA* suggested that for Focus Area 2, the team consider new land use improvements near the Walmart. Suggested that Hudson County reach out to the City of Kearny for more information.



- i. Stephen Marks, Kearny added that this Focus Area is in the Meadowlands district, and that the New Jersey Sports and Expedition Authority (NJSEA) should be invited to join this TAC. *N. Moini* is part of the TAC and noted that their agency is discussing this issue internally.
 - 1. *K. Force* to follow up with NJSEA about potential developments in Focus Area 2
- b. *S. Mack* asked via chat if the team considered the Global Container Terminal (GCT) area
 - i. *K. Force* responded that GCT will be addressed as a Focus Area further on in the presentation.
- c. *Michael Verney, Global Container Terminal* inquired about the percentage of trucks visiting the GCT use local cut through routes
 - i. *K. Force* responded that the amount is one percent of the truck trips. *Ken Hausman, GPI*, added that when examining INRIX, total trips, and number of trips using the cut-through, one divides one vs the other get the one percent result. A key concern is that the universe of global trips includes short trips which should not be part of the base number. That one percent is an underestimate of what the actual number should be.
- d. *Elias Guseman, Jersey City* noted that there will need to be specific attention paid to mitigating safety concerns in the India Square Community/Commercial District on Newark Avenue between Tonnele Avenue and John F. Kennedy Boulevard. Especially if the recommendation is to designate this area as the preferred truck route between US Route 1&9 and John F. Kennedy Boulevard.
 - i. *K Force* concurred and that the County is reviewing this issue.
- e. *S. Mack* asked if the team considered approved proposals such as the UPS one-million square feet project at Military Ocean Terminal at Bayonne, and the proposed 140-acre development Exxon development in Bayonne.
 - i. *K. Force* responded that the INRIX only shows data from the past, while the NJTPA Regional Transportation Model projects to 2045.

HUDSON COUNTY TRUCKING STUDY

TECHNICAL ADVISORY COMMITTEE (TAC)



This data provides regional projections, but for local projections, if Bayonne has any planning board applications, that will help provide hyper-local detail. *S. Mack* responded that they would provide.

- f. *S. Mack* inquired if one of the identified constraints in traveling from Newark Airport to Exit 14A is the NJ Turnpike, and if so, will there be a traffic analysis performed.
 - i. *K. Hausman* answered that the Turnpike recognizes that this is a capacity constraint, and they are exploring bridge replacement in that area.
 - ii. *M. Verney* echoed sentiments of 14A being a choke point especially with truck traffic. Container traffic throughout entire NYNJ harbor is always growing and will continue to increase over time.
 - iii. *Lu Ding, NJ Turnpike Authority* provided additional input about Turnpike improvements between Exit 14 and Exit 14A, noting that they are almost done with preliminary engineering for proposed Turnpike widening at that section. They are aware of the congestion and forecasted growth in area and are proposing to double the capacity in that segment of the Turnpike. NJTA appreciates Bayonne's support.

•

13. Next Steps/Schedule

- Incorporate TAC feedback into Draft Report
- Hold Public Meeting #2 in March 2023
- TAC Meeting 3 in April 2023

Meeting was adjourned at 3:00 pm

Hudson County Action Items:

- Send presentation slides to attendees (per equity request from Bayonne)
- Outline next steps for coordinating with NJ Transit re increasing bus routes to industrial areas, and reaching out to workers

HUDSON COUNTY TRUCKING STUDY



TECHNICAL ADVISORY COMMITTEE (TAC)

- Follow up with PANYNJ regarding additional findings regarding truck parking spaces
- Follow up with NJSEA/Kearney for information about Focus Area 2 improvements near the Walmart

Copy: Attendees; File

This summary is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Stephanie Brooks, FHI Studio, at sbrooks@fhistudio.com within 10 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting

Technical Advisory Committee (TAC) Meeting #3

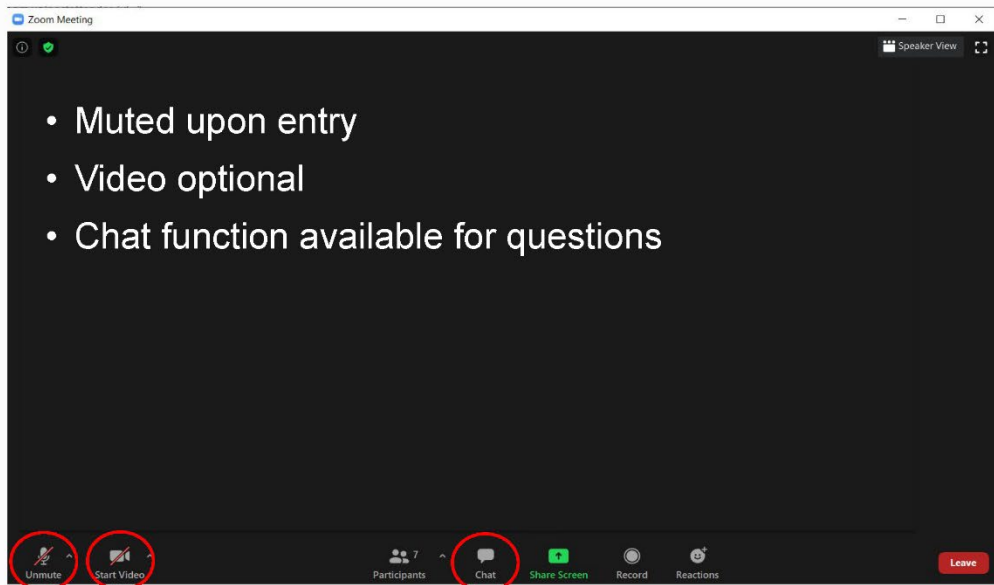


HUDSON COUNTY TRUCK ROUTES ASSESSMENT

Technical Advisory Committee Meeting #3
April 27, 2023



Zoom Meeting Guidelines



Introductions/Welcome

Project Team

- Hudson County Division of Planning
- North Jersey Transportation Planning Authority (NJTPA)
- Consultant Team
 - GPI
 - FHI Studio
 - Arup
 - Cheng Solutions, LLC



3

Agenda

- Feedback Received to Date
 - Technical Advisory Committee
 - Public Information Meetings
- Focus Area Recommendations Update
- Draft Report Review
- Discussion
- Next Steps



4

Updates from TAC and Public Feedback

5

TAC Meeting #2 Recap

February 9, 2023

- TAC provided feedback on findings/recommendations
- Important areas identified include:
 - ✓ Newark-Jersey City Turnpike, Kearny
 - ✓ County Avenue in Secaucus
 - ✓ Global Container Terminal (Exit 14A)

6



Public Information Meeting #2 Recap

March 8, 2023

- Extensive concerns about heavy trucks using local streets on St. Paul's Avenue
 - ✓ Requesting additional coordination with Jersey City
 - ✓ Coordinate with Journal Square Community Association (Jersey City)
- Global Container Terminal interested in receiving additional data

7

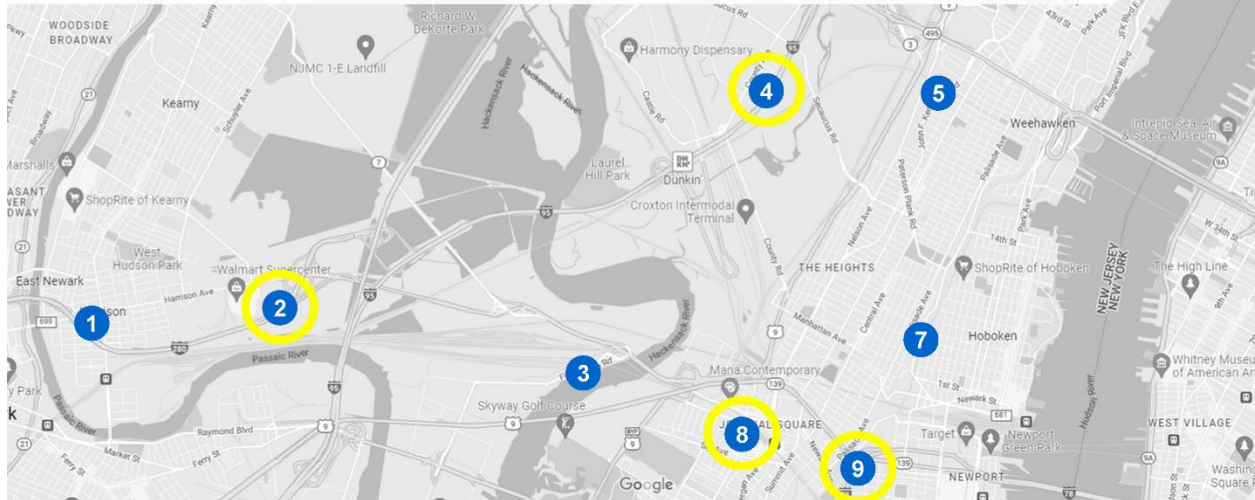
Focus Area Recommendations Update

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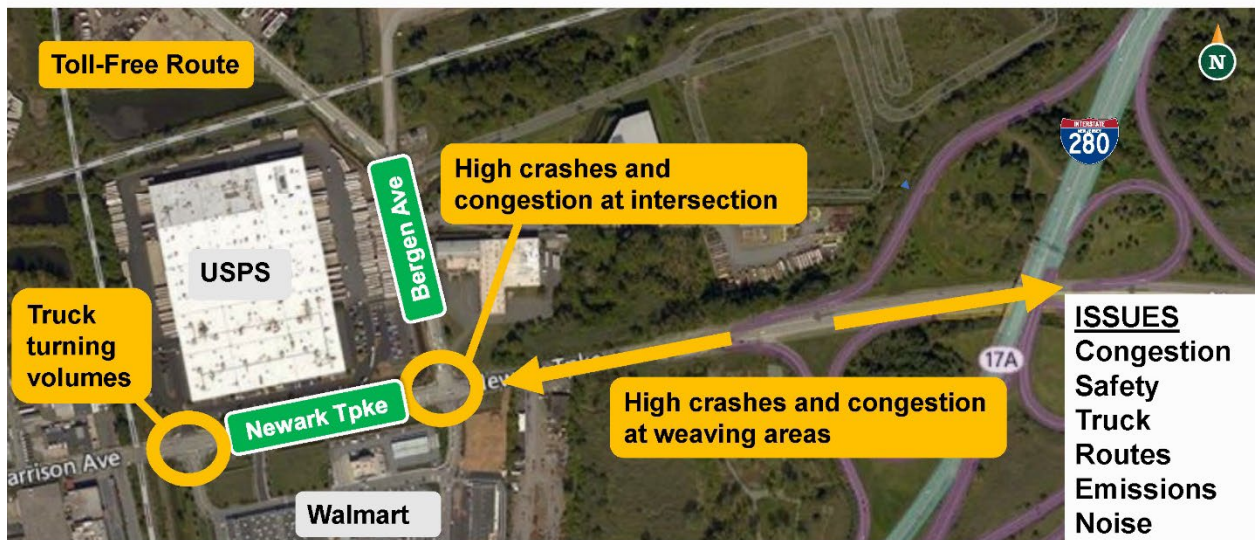


Focus Area Recommendations Update

Yellow circles = updated recommendations

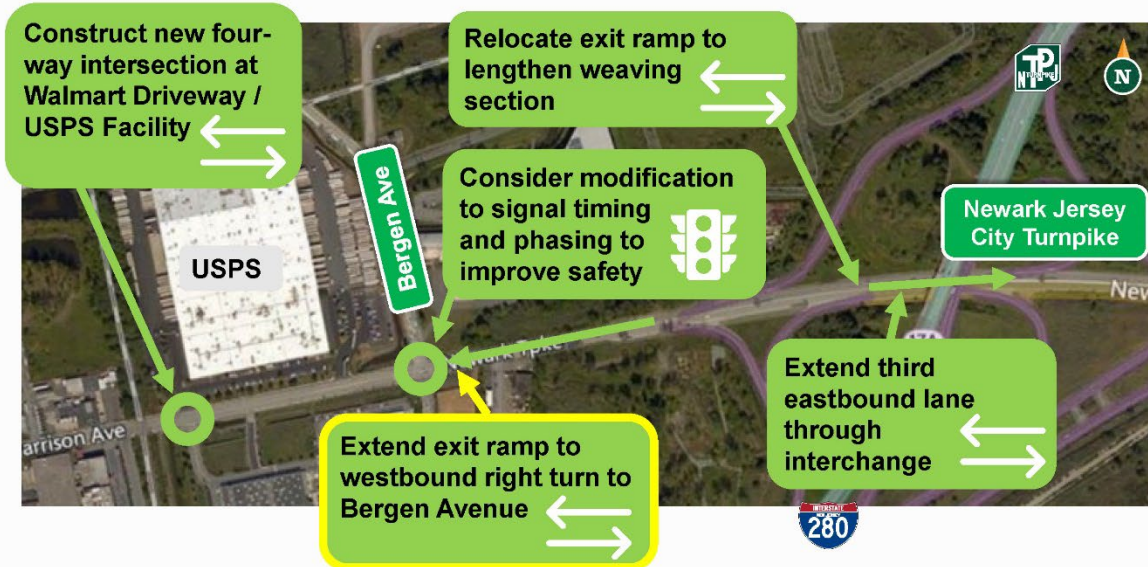


Focus Area 2 Findings



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Focus Area 2 Final Recommendations

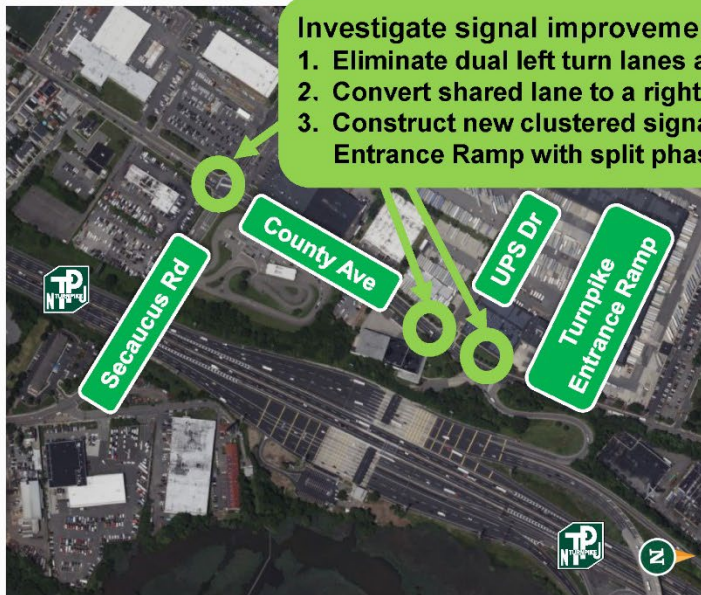


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Focus Area 4 Findings



📍 Focus Area 4 Final Recommendations



- Investigate signal improvements to improve safety:
1. Eliminate dual left turn lanes and permitted left turn phases
 2. Convert shared lane to a right turn lane
 3. Construct new clustered signal on County Ave / UPS Dr. / Entrance Ramp with split phasing on County Ave.



Further study should be performed before any changes in lane configuration

NHTSA Report confirms safety benefits

13

📍 Focus Area 8 Findings



New Ramp

Construction Vehicles

Newark Ave

St. Paul's Ave

Well above average noise, emissions, and equity concerns

High medium truck volumes, congestion and poor pavement

Broadway

Repaved Broadway

JFK Blvd

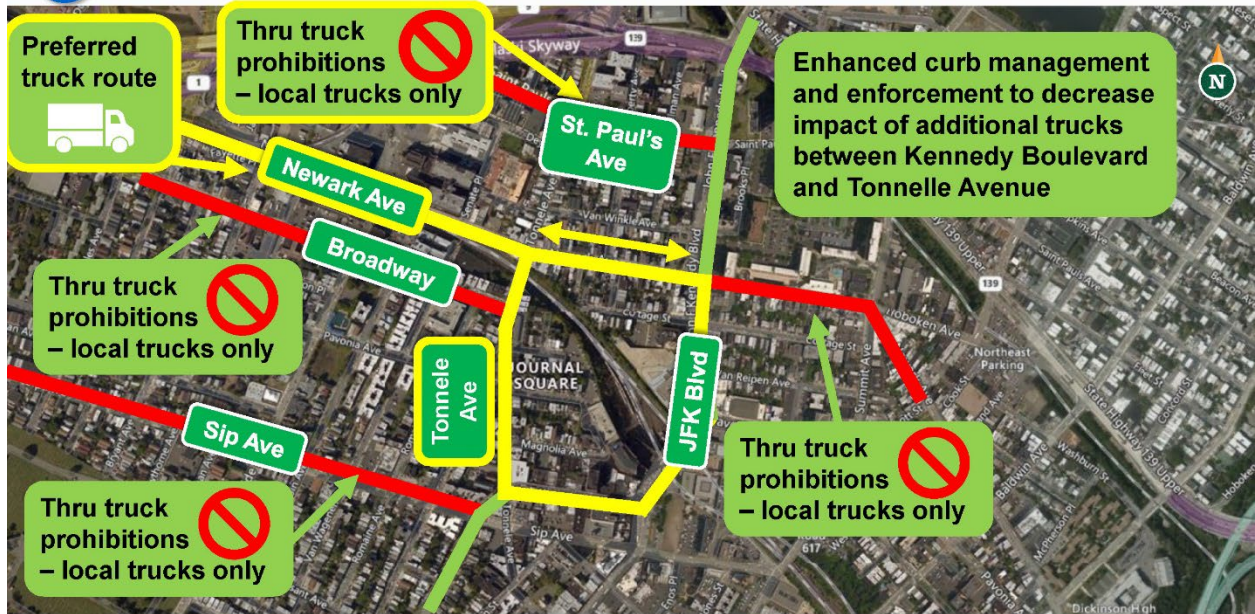
- ISSUES**
- Congestion
 - Pavement
 - Truck
 - Routes
 - Equity
 - Emissions
 - Noise

Commercial Area

Congestion

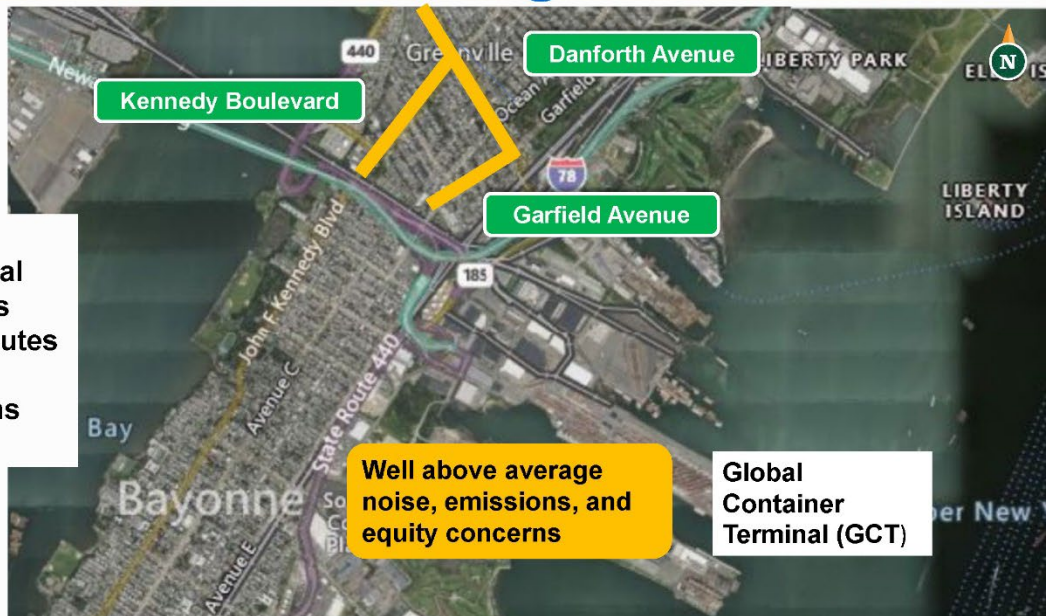
Sip Ave

Focus Area 8 Final Recommendations

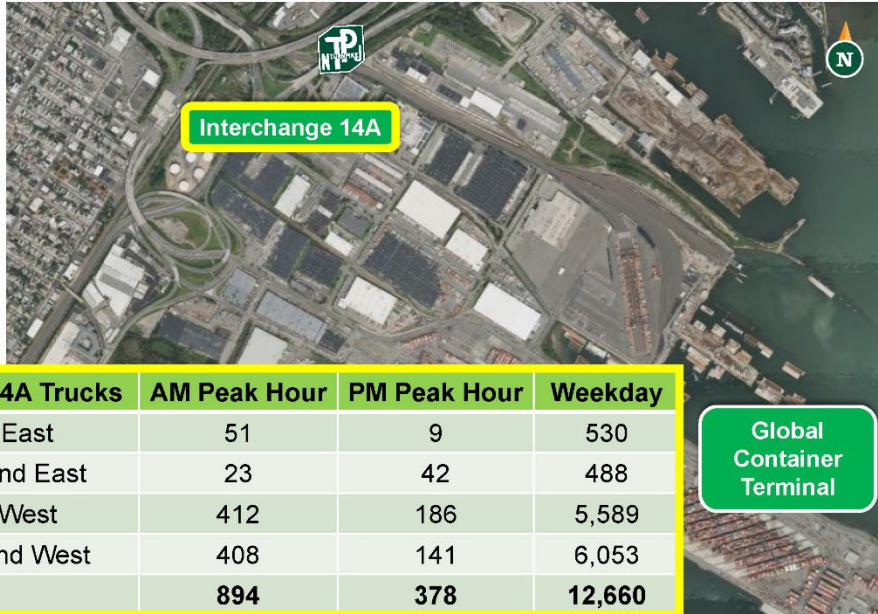


Focus Area 9 Findings

ISSUES
 Intermodal
 Terminals
 Truck Routes
 Equity
 Emissions
 Noise



📍 Focus Area 9 Additional Information



Interchange 14A Trucks	AM Peak Hour	PM Peak Hour	Weekday
To Tunnel and East	51	9	530
From Tunnel and East	23	42	488
To Bridge and West	412	186	5,589
From Bridge and West	408	141	6,053
Total	894	378	12,660

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Draft Study Report Overview

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Report Outline

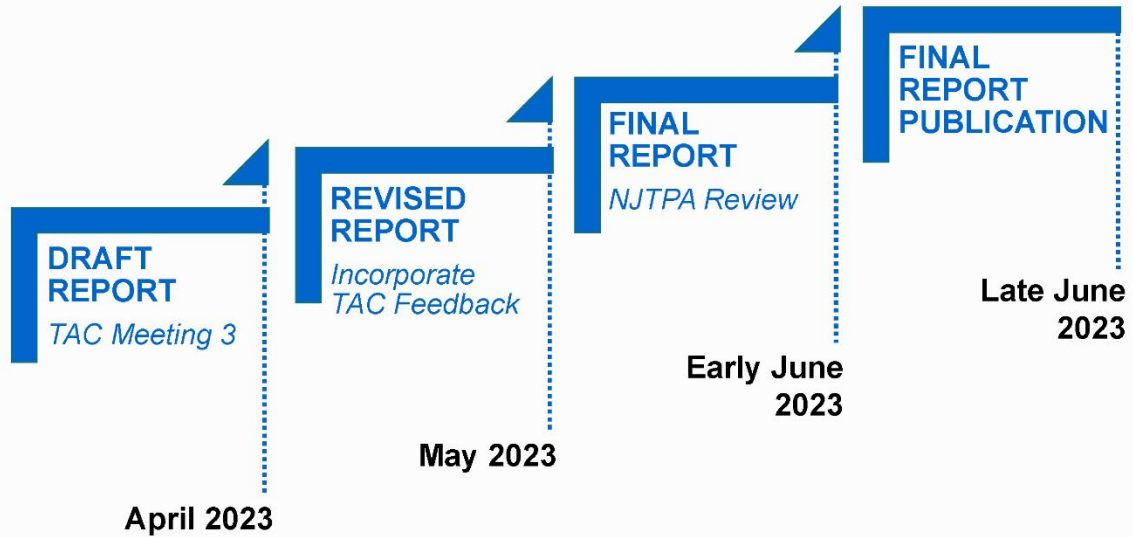
1. Introduction
2. Stakeholder and Public Outreach
3. Data Collection
4. Data Analysis
5. Critical Locations Identification
6. Improvement Strategy Groups
7. Recommendations
8. Conclusions/Next Steps

19

Discussion

20

Next Steps



21

Thank You!

Contact
Kevin Force, Project Manager
kforce@hcnj.us
www.hcnj.us/trucking-study
countyplanning@hcnj.us

Meeting #3 - Minutes (or Summary)

Date: April 27, 2023

Time: 3:30 PM

Meeting Recording: <https://bit.ly/3WyDGPR>

Prepared: May 22, 2023

Purpose

The primary objectives of TAC Meeting #3 were to:

- Review feedback received from TAC and public information meetings to date
- Solicit final feedback on updated Focus Area recommendations based on TAC feedback
- Discussion on Draft Report submitted prior to meeting

Meeting Attendees (30)

NJTPA

William Long

Hudson County

Kevin Force

Francesca Giarratana

Mark Serrano

Jose Sieira

Member Agencies

Michael Verney Global Container Terminal

Lu Ding NJ Turnpike Authority (NJTA)

Rosemary Nivar NJTA

Stephan Pezdek PANYNJ

Municipalities

Elias Guseman

Mike Manzella

Stephen Marks

Janet Castro

Lt. Otto Cruz

Jersey City

Jersey City

Kearny

North Bergen

North Bergen

Consultant Team

Ken Hausman

David Kuhn

Julia Steponako

Stephanie Brooks

GPI

GPI

GPI

FHI Studio

Meeting Summary

14. Introduction/Welcome

15. Updates from TAC and Public Feedback

- Provided an overview of feedback received from TAC #2 and Virtual Public Meeting #2

16. Focus Area Recommendations Update

Overview of updated Focus Area recommendations based on TAC feedback. Focus Areas 2, 4, 8 and 9

17. Draft Study Report Overview

- TAC members had received Draft Report prior to meeting. Outline noted as:
 1. Introduction
 2. Stakeholder and Public Outreach
 3. Data Collection
 4. Data Analysis
 5. Critical Locations Identification
 6. Improvement Strategy Groups
 7. Recommendations
 8. Conclusions/Next Steps

18. Questions/Discussion

Focus Area 2 Discussion

- m. *Lu Ding, NJ Turnpike Authority* requested confirmation of the exit ramp relocation noted in the recommendation update.
- i. *Ken Hausman, GPI* responded that the goal is to lengthen the section between the exit ramp and Bergen Avenue. This would be done through a County-based approach or via an option recommended by the NJ Turnpike. These options will not be in the scope of the report, as they require further analysis. The Turnpike would prefer not to relocate the ramp to the east.
 - ii. *L Ding* followed up by confirming that the option for constructing a new four-way intersection to the west of Bergen Avenue will also require further analysis. *K. Hausman* confirmed that this option will not be in the report.

Focus Area 8 Discussion

HUDSON COUNTY TRUCKING STUDY

TECHNICAL ADVISORY COMMITTEE (TAC)



- g. *Mike Manzella, Jersey City* did not have any additional comments to the recommendations update but confirmed the repaving of Broadway and reopening to Newark Avenue. K. Hausman noted that the County will need to revisit this area in the near future to see if traffic has shifted.

Focus Area 9 Discussion

- a. *Mike Verney, Global Container Terminal* thanked the team for providing truck traffic data for Exit 14A. They will compare that data to their findings and get back to the group. M. Verney also inquired if further information was available about extending the NJ Turnpike bridge. L. Ding responded that no further information is available at this time. M. Verney noted that they will continue to discuss this issue with the NJ Turnpike offline.

19. Next Steps/Schedule

- Incorporate TAC feedback into revised Draft Report – May 2023
- NJTPA review of Final Report – early June 2023
- Final Report publication – late June 2023

Meeting was adjourned at 4:15 pm

Copy: Attendees; File

This summary is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Stephanie Brooks, FHI Studio, at sbrooks@fhistudio.com within 10 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

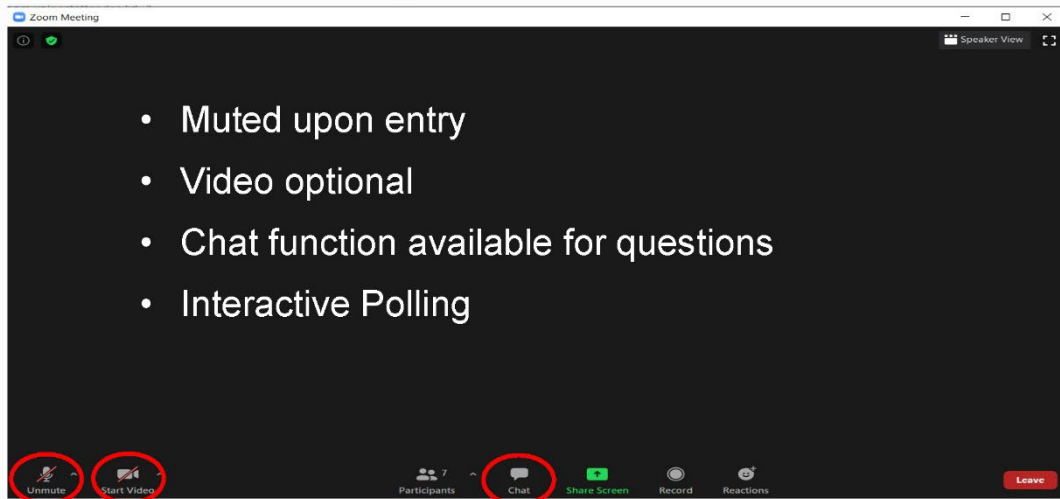


HUDSON COUNTY TRUCK ROUTES ASSESSMENT

Policy & Economy Freight Forum
September 21, 2022 | 2:00 PM





Zoom Meeting Guidelines



Introductions/Welcome

Project Team

- Hudson County Division of Planning 
- North Jersey Transportation Planning Authority (NJTPA) 
- Consultant Team
 - GPI
 - FHI Studio
 - Arup
 - Cheng Solutions, LLC



Agenda

- Study Purpose, Need & Objectives
- Study Work Plan
- Public Engagement Plan
- Data Assessment & Initial Findings
- Discussion
- Next Steps



Freight Forum Purpose

- Gather insight to confirm/expand upon analysis done to date
- Explore local/regional expertise and best practices
- By sharing experience, participants provide guidance on study direction, development, and recommendations



Purpose, Need & Objectives

Enhance the efficient movement of trucks through Hudson County and support the trucking industry through infrastructure improvements and policy recommendations, while reducing negative impacts to traffic, safety, and our communities.



Need

- Congestion
- Crashes
- Pavement/bridge wear
- Roadway design/geometries
- Community impacts
- Economic growth



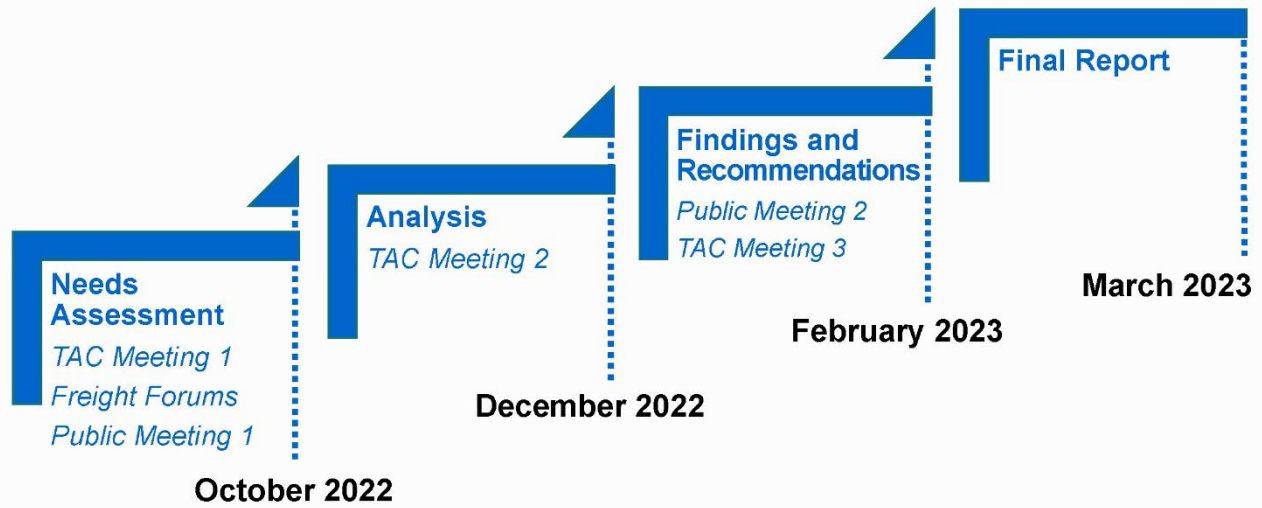
Goals

Develop policy, regulatory, and infrastructure recommendations to:

- Improve truck flow
- Reduce negative community impacts
- Support the freight trucking industry



Study Work Plan



Public Engagement Plan

What/Why

- Provide education/share info about freight trucking and its role in Hudson County
- Identify best practices and challenges faced by the trucking industry
- Understand effects/impacts on residents and businesses
- Facilitate an inclusive dialogue

How

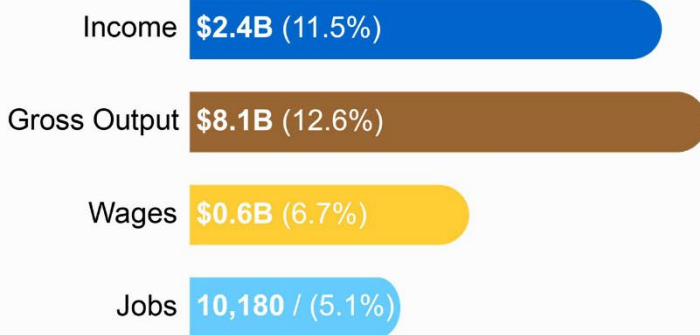
- Branding
- Social media
- TAC meetings
- Freight Forums
- Public meetings
- Newsletter
- Survey
- Website
hcnj.us/trucking-study





Initial Findings: Economic Activity/Value

Transportation/warehousing share of Hudson County economy



Inbound Markets % of Tonnage



Outbound Markets % of Tonnage



Over 75% of Hudson County freight activity is by truck



Source: NJTPA Freight Forecasting Tool



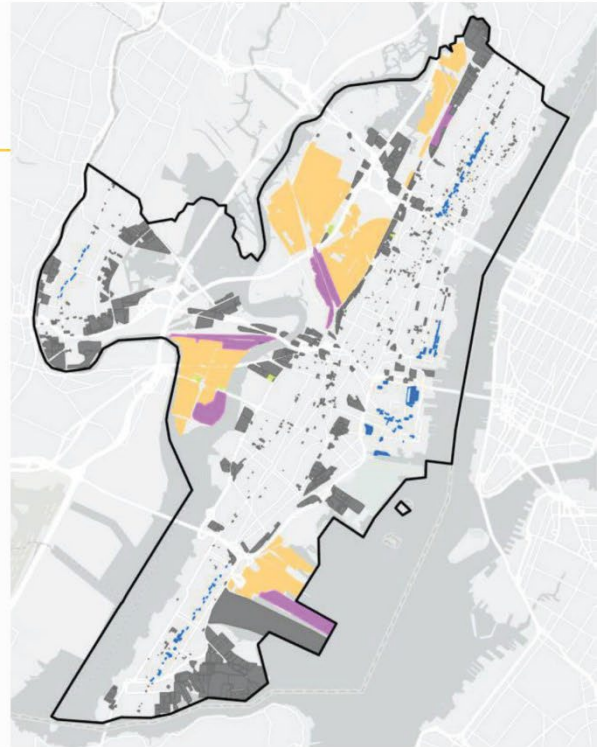
Initial Findings

Industrial/Warehousing Districts and Commercial Districts

Parcel Types Studied

-  Freight Cluster
-  Intermodal
-  Truck Parking
-  Commercial District
-  Other Freight Facilities

Selected based on frequent O/D patterns





What do you see as the most important issue facing the future of the freight industry in Hudson County?



Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app



Discussion



Next Steps

- Review/consider Freight Forum feedback
- Complete data collection
- Hold Public Meeting #1 in late September
- TAC Meeting #2 in December



Thank You!



Contact

Kevin Force, Project Manager
kforce@hcnj.us

www.hcnj.us/trucking-study

countyplanning@hcnj.us

Freight Forum #2: Local Deliveries

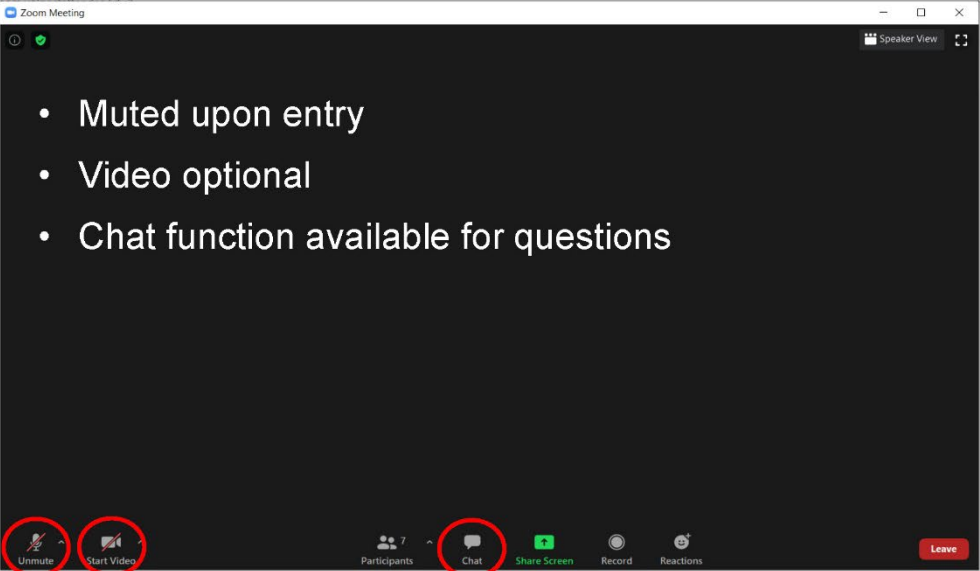


HUDSON COUNTY TRUCK ROUTES ASSESSMENT

Local Deliveries Freight Forum
September 27, 2022 | 10:00 AM



Zoom Meeting Guidelines



A screenshot of a Zoom meeting window. The window title is "Zoom Meeting". The main content area is black with white text listing guidelines:



- Muted upon entry
- Video optional
- Chat function available for questions

At the bottom of the window is a toolbar with several icons. The "Unmute" and "Start Video" icons are circled in red. Other icons include "Participants" (with a count of 7), "Chat" (circled in red), "Share Screen", "Record", "Reactions", and a red "Leave" button. The top right corner of the window shows "Speaker View" and window control buttons.



Introductions/Welcome

Project Team

- Hudson County Division of Planning 
- North Jersey Transportation Planning Authority (NJTPA) 
- Consultant Team
 - GPI
 - FHI Studio
 - Arup
 - Cheng Solutions, LLC



Agenda

- Study Purpose, Need & Objectives
- Study Work Plan
- Public Engagement Plan
- Data Assessment & Initial Findings
- Discussion
- Next Steps



Freight Forum Purpose

- Gather insight to confirm/expand upon analysis done to date
- Explore local/regional expertise and best practices
- By sharing experience, participants provide guidance on study direction, development, and recommendations



Purpose, Need & Objectives

Enhance the efficient movement of trucks through Hudson County and support the trucking industry through infrastructure improvements and policy recommendations, while reducing negative impacts to traffic, safety, and our communities.



Need

- Congestion
- Crashes
- Pavement/bridge wear
- Roadway design/geometries
- Community impacts
- Economic growth

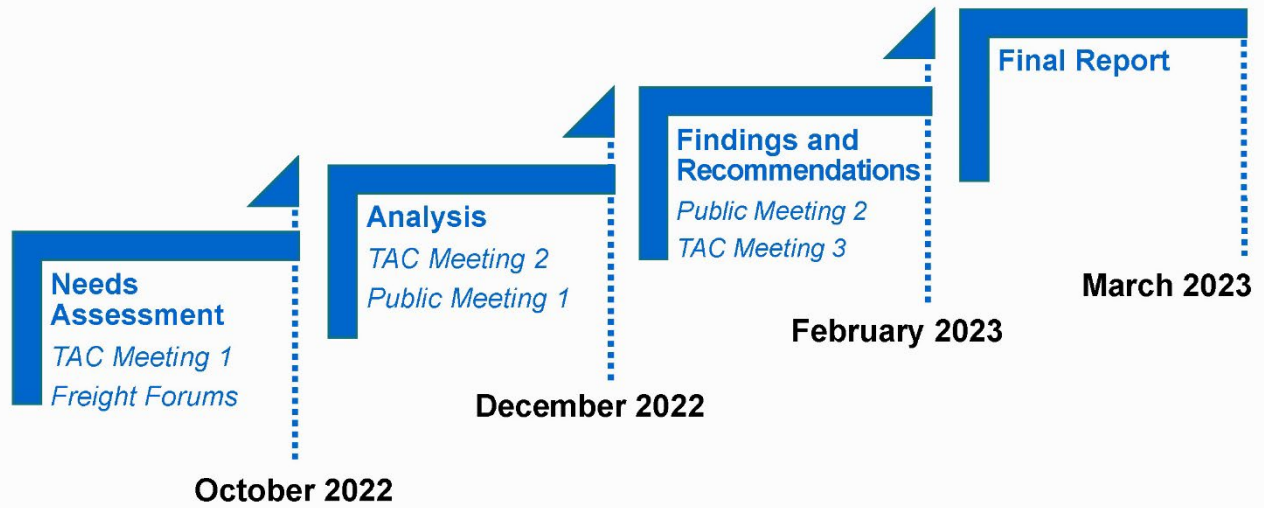


Goals

- Develop policy, regulatory, and infrastructure recommendations to:
- Improve truck flow
 - Reduce negative community impacts
 - Support the freight trucking industry



Study Work Plan



Public Engagement Plan

What/Why

- Provide education/share info about freight trucking and its role in Hudson County
- Identify best practices and challenges faced by the trucking industry
- Understand effects/impacts on residents and businesses
- Facilitate an inclusive dialogue

How

- Branding
- Social media
- TAC meetings
- Freight Forums
- Public meetings
- Newsletter
- Survey
- Website
hcnj.us/trucking-study






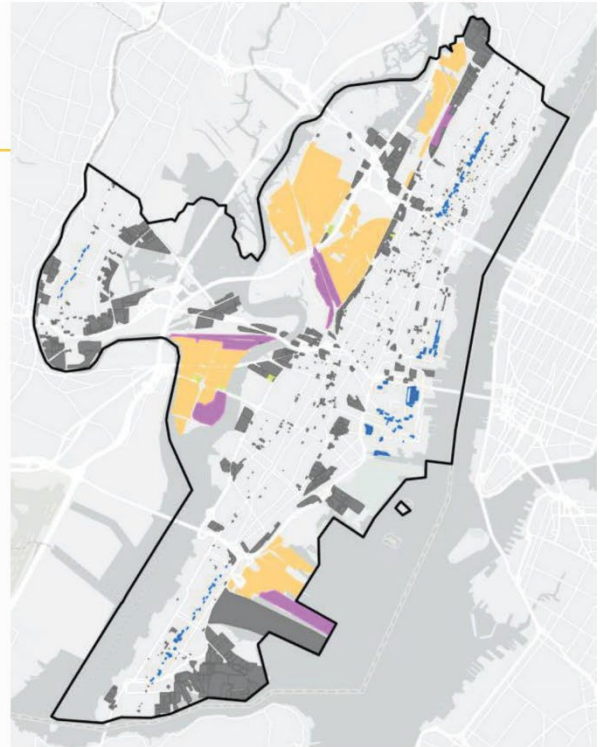
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Parcel Types Studied

-  Freight Cluster
-  Intermodal
-  Truck Parking
-  Commercial District
-  Other Freight Facilities

Selected based on frequent O/D patterns





Initial Findings

Designated Curbside Loading Zones

- Quick deliveries or pick-ups
- Both loading zone and on-street parking depending on time of day
- Identified by clear signage and/or designated pavement markings
- Loading zone programs can reduce double-parking and congestion





Discussion





What are the biggest pain points traveling, parking, and loading/unloading within Hudson County?



Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

Discussion

Smaller/non-motorized
delivery vehicles

*At right: eQuad cargo bike
in New York City (UPS)*



Next Steps

- Review/consider Freight Forum feedback
- Complete data collection
- Hold Public Meeting #1 November 3rd
- TAC Meeting #2 in December



Thank You!

Contact

Kevin Force, Project Manager

kforce@hcnj.us

www.hcnj.us/trucking-study

countyplanning@hcnj.us

Freight Forum #3: Warehousing and Distribution

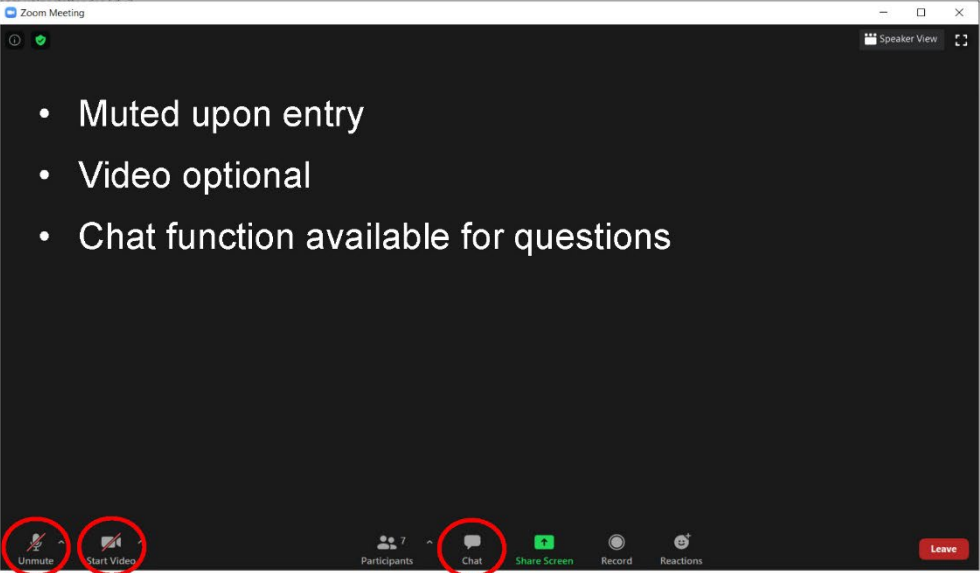


HUDSON COUNTY TRUCK ROUTES ASSESSMENT

Warehousing + Distribution Freight Forum
September 27, 2022 | 2:00 PM



Zoom Meeting Guidelines



A screenshot of a Zoom meeting window. The window title is "Zoom Meeting". The main content area is black with white text listing guidelines:



- Muted upon entry
- Video optional
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At the bottom of the window is a toolbar with several icons. The "Unmute" and "Start Video" icons are circled in red. Other icons include "Participants" (with a count of 7), "Chat" (circled in red), "Share Screen", "Record", "Reactions", and a red "Leave" button.



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Agenda

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- Study Work Plan
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- Discussion
- Next Steps



Freight Forum Purpose

- Gather insight to confirm/expand upon analysis done to date
- Explore local/regional expertise and best practices
- By sharing experience, participants provide guidance on study direction, development, and recommendations



Purpose, Need & Objectives

Enhance the efficient movement of trucks through Hudson County and support the trucking industry through infrastructure improvements and policy recommendations, while reducing negative impacts to traffic, safety, and our communities.



Need

- Congestion
- Crashes
- Pavement/bridge wear
- Roadway design/geometries
- Community impacts
- Economic growth



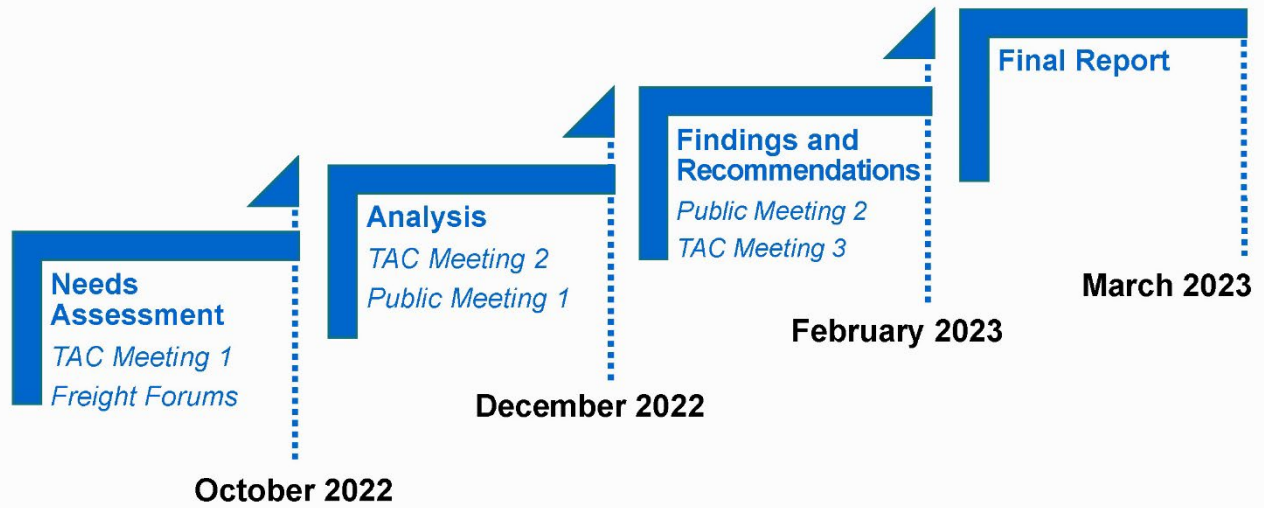
Goals

Develop policy, regulatory, and infrastructure recommendations to:

- Improve truck flow
- Reduce negative community impacts
- Support the freight trucking industry



Study Work Plan



Public Engagement Plan

What/Why

- Provide education/share info about freight trucking and its role in Hudson County
- Identify best practices and challenges faced by the trucking industry
- Understand effects/impacts on residents and businesses
- Facilitate an inclusive dialogue

How

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- Public meetings
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hcnj.us/trucking-study










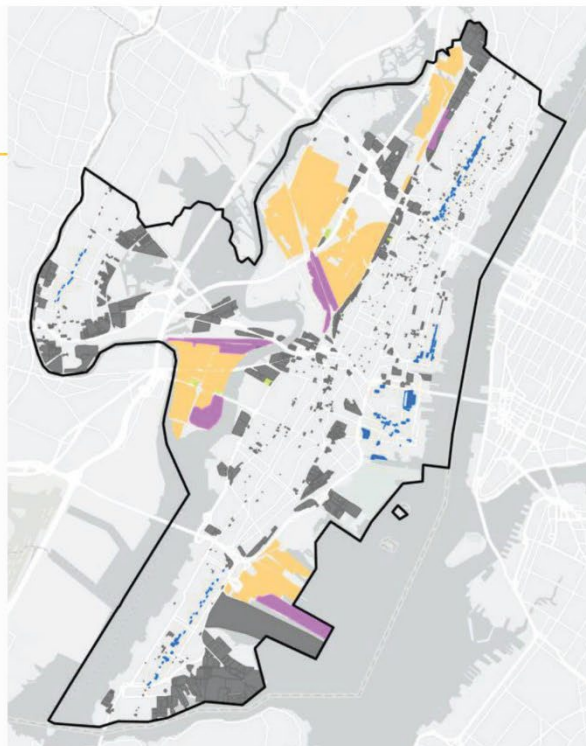
Initial Findings

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-  Truck Parking
-  Commercial District
-  Other Freight Facilities

Selected based on frequent O/D patterns





Initial Findings

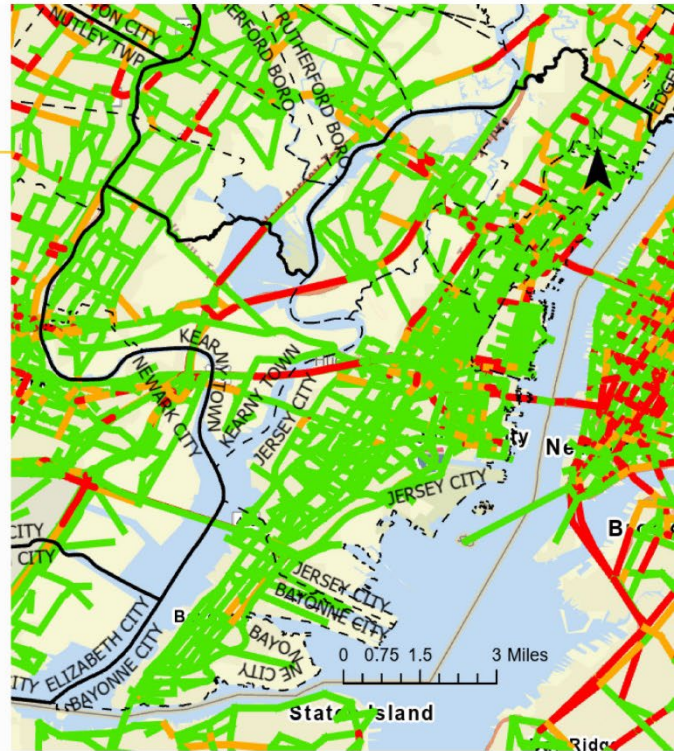
Volume/Capacity (V/C)

Green – v/c ratio less than 0.85

Yellow – v/c ratio less than 1.0

Red – v/c ratio greater than 1.0

Source: NJTPA, 2018 PM NJRTM-E





Discussion



**What are the biggest pain points traveling, parking, and loading/unloading within Hudson County?
(Warehousing/Distribution)**



Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

Next Steps

- Review/consider Freight Forum feedback
- Complete data collection
- Hold Public Meeting #1 November 3rd
- TAC Meeting #2 in December



Thank You!



Contact

Kevin Force, Project Manager

kforce@hcnj.us

www.hcnj.us/trucking-study

countyplanning@hcnj.us

Freight Forum Purpose

The primary objectives of the Freight Forums were to:

- Review project purpose, goals, and work plan
- Gather insight to confirm/expand upon the technical analysis done to date
- Explore local/regional expertise and best practices

Freight Forum Agendas

1. Introduction/Welcome
2. Project Purpose, Need & Objectives
3. Public Engagement Plan Overview
4. Data Assessment & Analysis/Initial Findings
5. Discussion
6. Next Steps/Schedule

Freight Forum 1: Policy & Economy

Date: September 21, 2022

Time: 2:00 – 3:00 PM

Meeting Recording: <https://bit.ly/3e0HgAr>

Attendees: Alan Lambiase
River Terminal Development
Town of Kearny

Rosennies Feliz
Hudson County Economic Development Corporation

Discussion Summary

Key Issues

- Region needs to invest in highway access to make the area more attractive to businesses
- Large trucks: roadways carry over 80,000-pound vehicles, very hard on asphalt
- More money is needed to upgrade existing truck routes, improve paving, overall maintenance

- Signage is extremely important
- Striping also very important, e.g.: recently, faded striping in South Kearny caused a two-truck accident.

Poll Question: advantage of locating in Hudson County (*top advantage: proximity to clients*)

Advantages of Locating in Hudson County

Poll | 1 question | 1 of 5 (20%) participated

1. What are the advantages of locating a freight facility in Hudson County? (Multiple Choice) *

1/1 (100%) answered

Space available for lease	(0/1) 0%
Proximity to clients	(1/1) 100%
Roadway network and access	(0/1) 0%
Favorable business environment	(0/1) 0%
Other? (for discussion)	(0/1) 0%

Key Problem Areas

- The drawbridge over the Hackensack/Passaic rivers, daytime raising hours creates extensive traffic backup
- Tried to work with Coast Guard in 2018 to shift drawbridge hours to before 9:00 am and after 5:00 pm, no progress yet
- Two at-grade rail crossings with Norfolk Southern and CSX creates extensive traffic backup. The railroad needs better coordination with the area towns and needs to update schedules to run during off-hours. Hudson County and the NJTPA could focus on this issue and help Town coordinate with railroad.

Upcoming Developments

- Note that the whole area is parking constrained, and incoming industries are going to exacerbate the problem, including:
- New Amazon facility
- 6,000 residential units off NJ Route 440
- Bilco Corporation industrial space with new tenants
- Blackstone facility, on US Route 1&9 at Hackensack Avenue
- Crown Industries building on Hackensack Avenue

- More companies are now running two to three shifts, adding more truck use

Hiring Concerns

- Still very competitive, shortage of people with steel licenses, have to offer bonuses
- Increase in Amazon and online shopping and supply chain issues, shipping costs skyrocketed post pandemic, increase in gas prices, workers wanting better minimum wage and high costs of living
- Trucking companies have had to go over to Eastern Europe to hire drivers, desperate for workforce

Existing Regulations

- Too many regulations are a challenge, New Jersey following in the footsteps of California
- Recently read a news article that noted that thirteen industry representatives asked NJ Department of Environmental Protection not to adopt California high emission standards (Mr. Lambiase will forward these articles)
- There is a disconnect between what the public wants and how the trucking industry is going to get their items to them. Need to support the supply chain and logistics companies that help people get the things they want

Suggestions/Next Steps

- County present to the Tenants’ association, Mr. Lambiase can arrange this meeting
- Mr. Lambiase will try to attend the Warehousing and Distribution Forum on the 27th
- County can join at any of his business meetings
- Note that businesses usually don’t reach until there is a problem with the roadways; important to be proactive
- Look into potential policy recommendations
- County will send over online survey and public meeting flyer; participants will help distribute via their website and social media channels.

Freight Forum 2: Local Deliveries

Date: September 27, 2022

Time: 10:00 – 11:00 AM

Meeting Recording: <https://bit.ly/3CtIHRi>

Attendees: Jerry Blankman
 Westside Partnership Special Improvement District
 Jersey City
 Ryan Goor
 Commercial Furniture Transport (CFT) Delivers
 Secaucus

Discussion Summary

Key Issue: Parking

- Automobile parking is critical: currently, there are not enough parking spaces on the street leading to illegal parking, lane blocking, U-turns, and a domino effect that impedes truck curbside delivery.
- The Westside Partnership has been working with City of Jersey City and the Parking Authority to try to develop a vertical parking structure to take parking off the street, which will make room for trucks to deliver curbside and make room for loading zones.
- The multilevel parking facility would have a dedicated floor or two reserved for residents and local businesses. Encouraging a shop-local environment. Partnership board members are supportive.
- With big high-rises going up throughout Hudson County (Bayonne, Jersey City, Hoboken), additions of vertical parking could be the answer for improving truck deliveries.
- The existing Jersey City parking plan utilizes amenities that the city currently has (school lots, etc.) but vertical idea has not been moved forward.
- Good case study example: New Brunswick has parking decks available at every major corridor.
- Funding is critical, municipalities need the funding to develop the parking facilities.
- Key funding source: parking fees. People parking on the street pay meter parking without concern, they could shift their existing payments from curbside meters to vertical parking lot fees. Parking Authority should manage it.
- Potential parking structure location: on West Side Avenue just before Communipaw (near Halftime Bar and Grill, close to 746 West Side Avenue). This is also the location of a municipally owned public surface lot, but the lot is relatively small, with approximately 22 spaces.

Delivery Times

- Deliveries take place during the day, usually from 8:00 am – 5:00 pm. Competes with residential and local business parking.
- For the types of items being delivered (laundry, furniture), stores have to be open to take in the deliveries, so off hours and night deliveries are difficult.

- A “reservation system” such as what is used by Ports would not be effective for this area. Local mom-and-pop businesses are not as tech savvy as larger multinational corporations that use port facilities. Online apps, etc. would not work.
- Rather than an online application, adding more loading zones is a low-tech solution that would help facilitate delivery times (see suggestion to alter street-side parking rules below)

Loading Zones

- Truckers do not use any official loading zones, there are very few available and there is no room to create them
- Getting cars off street parking would make room for loading zones and allow for more streamlined curbside deliveries.
- Ideal locations for loading zones are at the end of a curb; easy for trucker to pull up, turn corners, back up, and pull out.
- Suggestion to alter street-side parking rules: loading zones during the day, and at night, revert to local/residential parking. This would be helpful.

Enforcement/Regulations

- Enforcement is not an issue; penalizing people is not the answer.
- Getting cars off street parking would make room for loading zones and allow for more streamlined curbside deliveries.

Roadway Infrastructure

- Most roadway areas are a problem, particularly coming out of Secaucus to New York City. Difficult to travel on Secaucus Road any time past 6:30 am, and the reverse trip is the same, after 4:00 pm.
- One infrastructure item that could help would be increasing the turning radius on the area blocks. Trucks cannot make the “swing”, it is a major issue that creates traffic around Jersey City and Hoboken.
- Tight local streets, not able to accommodate buses and trucks, but they must use the streets regardless.

Alternative Modes

- Not using e-bikes or other forms of non-motorized delivery. They have seen it in New York City, particularly the Lower East Side and Brooklyn.

- Within the West Side Avenue corridor in Jersey City there is not enough room for bicycles, unless they removed parking, but that would create even more problems. This may not be the case for other areas of Jersey City.
- Yet another argument for creating a vertical multideck parking lot; it could allow for some streetside parking removal to make more room for bike lanes, along with loading zones.
- Existing bike lanes are unprotected, and cars often use them; becomes a problem with double parking; particularly by delivery drivers (Uber, Grubhub, etc.).

Distribution

- The idea of a micro-hub warehousing system, with smaller truck deliveries all coming out of a central location, like the Amazon “locker” concept, would not work for their area, as each delivery type is so different (e.g., food vs. furniture)

Suggestions/Next Steps

- County will send over online survey and public meeting flyer; participants will help distribute via their website and social media channels.
- Work with City of Jersey City on further vertical parking studies, funding plans, involving Westside Partnership.
- Look at potential to create timed street-side loading zones, to supplement vertical parking elements.
- Work with local council people to develop further recommendations, particularly on vertical multideck parking structures.

Freight Forum 3: Warehousing and Distribution

Date: September 27, 2022

Time: 2:00 – 3:00 PM

Meeting Recording: <https://bit.ly/3CtJSjH>

Attendees: Greyson Meyer
Justine DeSantis, DeSantis Dispatch & Distribution

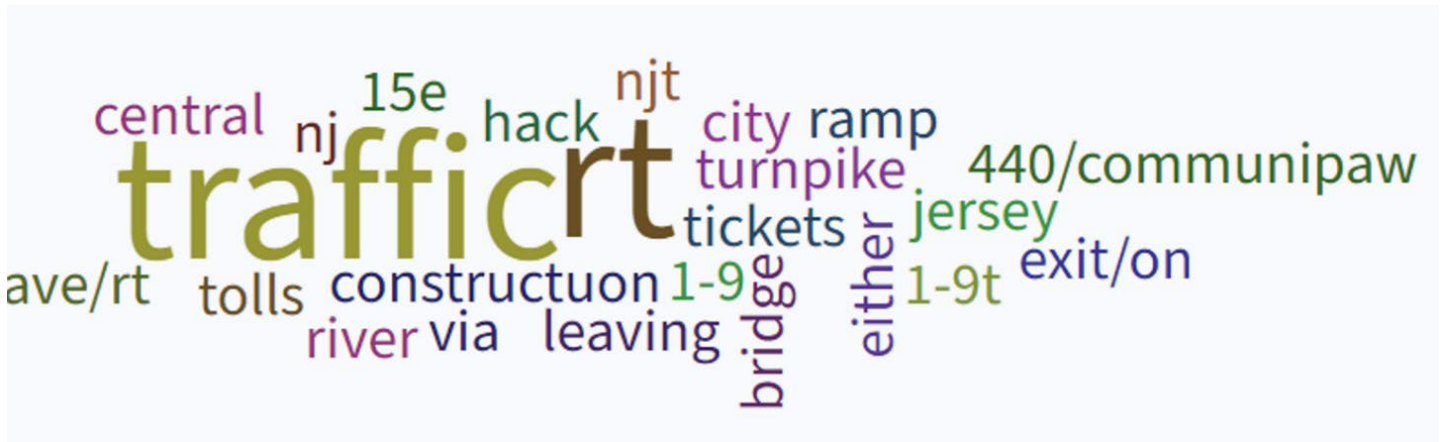
Michael Verney, GCT Bayonne (port terminal)
Brian Jackson
M. Kiely
E. Tompkins
Tony, G&S Logistics
Daniel Marques
Mike Meyer, Kearny Point
Michelle Richardson
Alan Lambiase, River Terminal Development, South Kearny
(Including three unannounced attendees)

Discussion Summary

Poll Responses

PollEv Word Cloud: *What are the biggest pain points traveling, parking, and loading/unloading within Hudson County?*

- Key issues: traffic, tolls, tickets, construction
- Traffic leaving Jersey City, either via New Jersey Turnpike or US Route 1&9
- New Jersey Turnpike Route 15E exit on-ramp
- NJ Route 440 and Communipaw Avenue
- Central Avenue and US Route 1&9
- Hackensack River Bridge



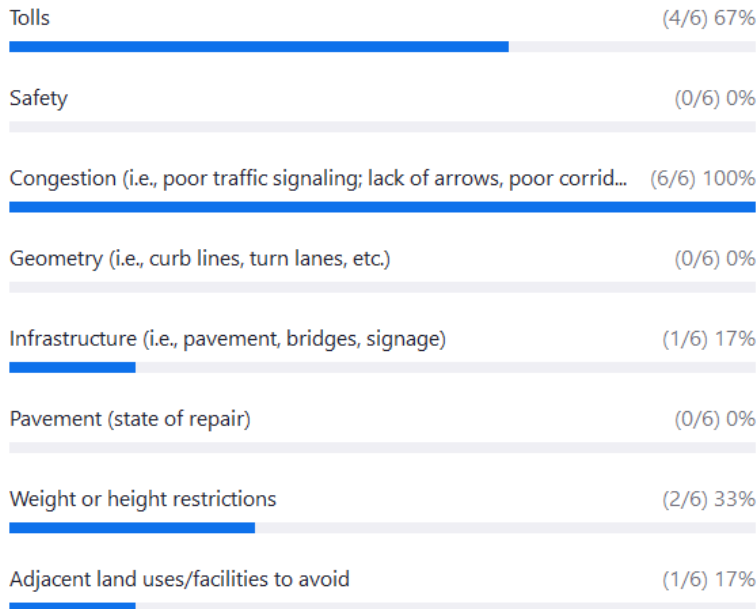
Zoom Poll 1: Localized Route Choice (*top local route choice factors: congestion and tolls*)

Localized Route Choice

Poll | 1 question | 6 of 10 (60%) participated

1. What are the factors that impact general and localized route choice?
(Multiple Choice) *

6/6 (100%) answered



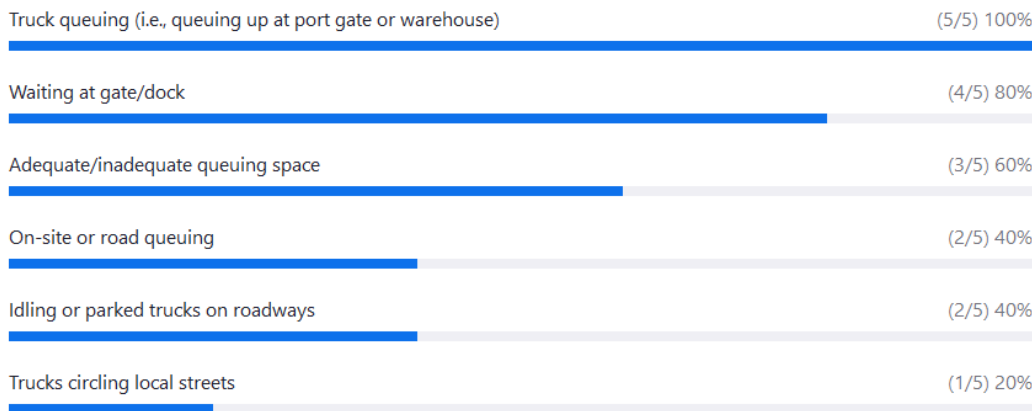
Zoom Poll 2: Logistical/Operational (truck queuing, waiting at gate, inadequate queuing space)

Route Choice Logistical/Operational Factors

Poll | 1 question | 5 of 10 (50%) participated

1. What logistical/operational factors impact drivers' decision on times and routes to use? (Multiple Choice) *

5/5 (100%) answered



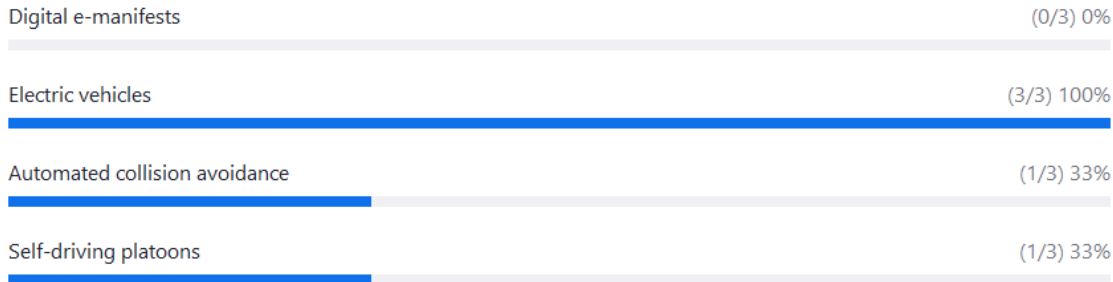
Zoom Poll 3: Innovations (top innovation of interest: electric vehicles)

Innovations

Poll | 1 question | 3 of 9 (33%) participated

1. What innovations are drivers, operators, and managers most excited about? (Multiple Choice) *

3/3 (100%) answered



Open Discussion Items

Infrastructure

- Area around US Route 1&9 truck route and Hackensack Avenue, many modes trying to use the area, unsafe for pedestrians and bus users, hazardous conditions, and inadequate facilities and infrastructure
- Areas where there are rail lines and draw bridges exacerbate all these infrastructure problems
- Signal upgrades came to Hackensack Ave and US Route 1&9 but have not kept up with development, need additional signalization and modernization.

Geometry

- Port Jersey Blvd not good for turning radius, narrow roadway
- All of US Route 1&9 is problematic
- One automobile incident/breakdown creates immediate traffic, there are no breakdown lanes available. Even the garbage hauler picking up garbage in the early morning creates problems. Breakdown lanes needed.

Travel Time Frames

- During regular business hours

Parking Concerns

- Truck parking is a real concern, trucks need to have someplace to go when not operating (off duty), but limited land area available.

- Area has experienced so much development, and truck parking demand cannot keep up.
- Need additional parking options for both automobiles and trucks.
- When we don't have adequate truck parking available, it adds more congestion to the roadways, adding to existing traffic.
- Need to have truck parking close to the where the demand is (proximity to delivery points).
- Parking needs to be easily accessible to Port locations, but OFF the local streets

Capacity Concerns

- Roadways need to adapt to increased development, including a 600K square foot Amazon facility, a 300K square foot facility at US Route 1&9 in Hackensack, and ongoing residential development on the west side Jersey City.
- Capacity concerns need to focus not just on trucks but on alternative forms of transportation, including pedestrian, keeping bike paths separate, capital investments, and planning strategies.
- The entire area needs very thoughtful progressive regional planning. Built over 140 years ago and needs to be updated.

Innovation

- Interest in electric vehicles (see poll response above), but concerns about costs and available supply keeps investment from moving forward.
- Seeing some benefit from improved dash cams. They mostly provide information about accidents, but in general are helpful in other areas to review what incident took place at a given time.

Empty/Non-Revenue Miles

- Lowering non-revenue miles is the whole game. There is no one strategy, it needs to be a combination of efficiency, improved routing, etc.

Other Concerns


- Issues of flooding and resiliency are very important



Keep on Truckin'
Hudson County

HUDSON COUNTY TRUCK ROUTES ASSESSMENT

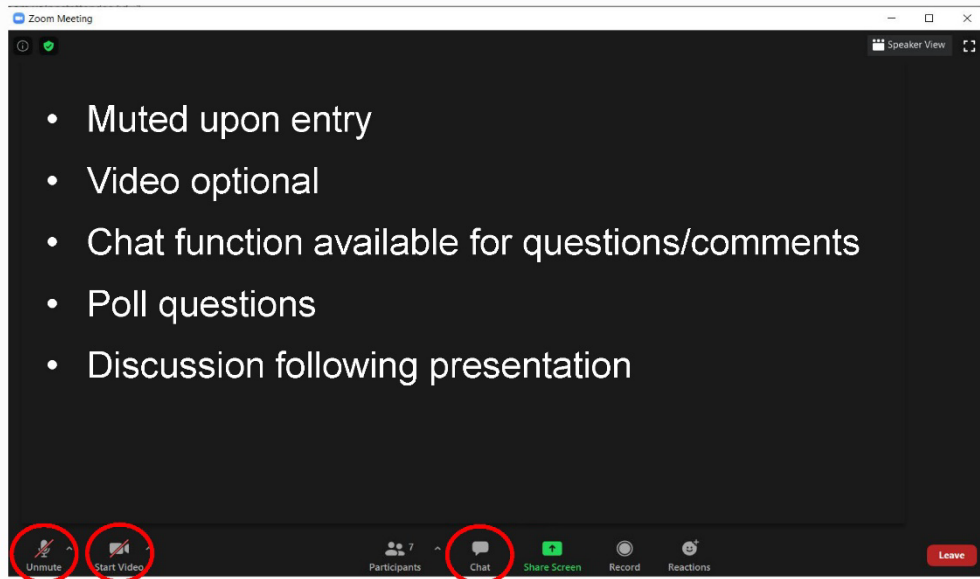
Public Information Meeting
November 3, 2022



NJTPA
NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY



Zoom Meeting Guidelines



Zoom Meeting



- Muted upon entry
- Video optional
- Chat function available for questions/comments
- Poll questions
- Discussion following presentation

Unmute Start Video Participants Chat Share Screen Record Reactions Leave



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3

Zoom Polls

What Do You Think?



4

Study Purpose, Need and Goals

Purpose Enhance efficient truck movement through Hudson County, support the trucking industry through infrastructure improvements/policy recommendations, and reduce negative impacts to traffic, safety, and our communities



Need

- Congestion
- Emission/noise levels
- Crashes
- Pavement/bridge wear
- Roadway design
- Community impacts



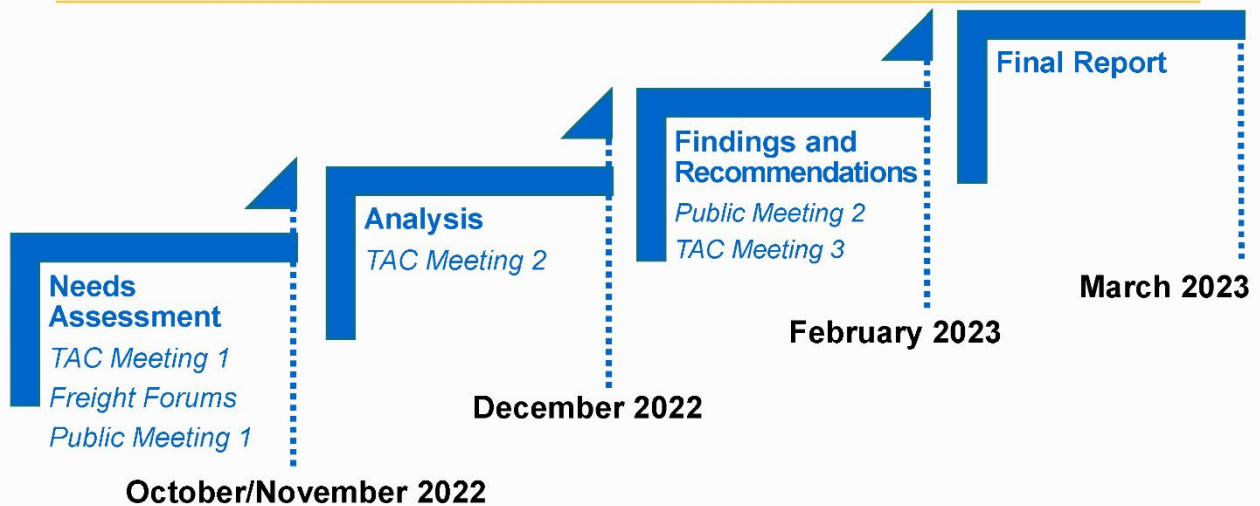
Goals

- Develop policy, regulatory, and infrastructure recommendations to:
- Improve truck flow
 - Reduce negative community impacts



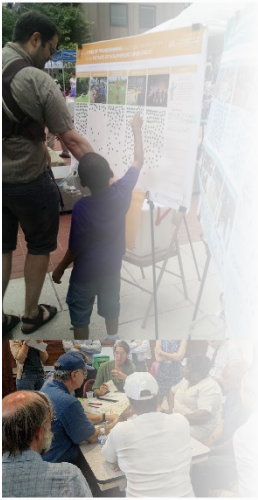
5

Study Work Plan



6

Public Engagement Plan



What/Why

- Share info about freight trucking and its role in the County
- Identify best practices and challenges faced by trucking industry
- Understand effects/impacts on residents and businesses
- Facilitate inclusive dialogue

How

- Social media
- Public meetings
- Newsletter
- Survey
- Website
hcnj.us/trucking-study
- Freight Forums
- Technical Advisory Committee



7

Data Assessment

Mobility and Efficiency



Data:

- Truck trip patterns
- Truck route data
- Local deliveries/curb management

Road Conditions



- Pavement conditions
- Bridge conditions
- Maintenance schedules

Safety



- All truck crash locations
- Travel patterns and speed



8

Data Assessment

Community Impacts



Data:

- Equity/Environmental Justice (EJ) populations
- Emissions
- Noise

Economic Activity and Value



- Freight activity
- Economic contribution
- Trucking facilities & business districts

Best Practices



- Literature review
- Case studies
- New technologies



9



Initial Findings: Economic Activity/Value

Transportation/warehousing share of County economy

Income **\$2.4B (11.5%)**

Gross Output **\$8.1B (12.6%)**

Wages **\$0.6B (6.7%)**

Jobs **10,180 / (5.1%)**



Source: NJTPA Freight Forecasting Tool

10



Initial Findings: Economic Activity/Value

75%+ of Hudson County freight activity is by truck

Source: NJTPA Freight Forecasting Tool



Inbound Markets % of Tonnage



Outbound Markets % of Tonnage



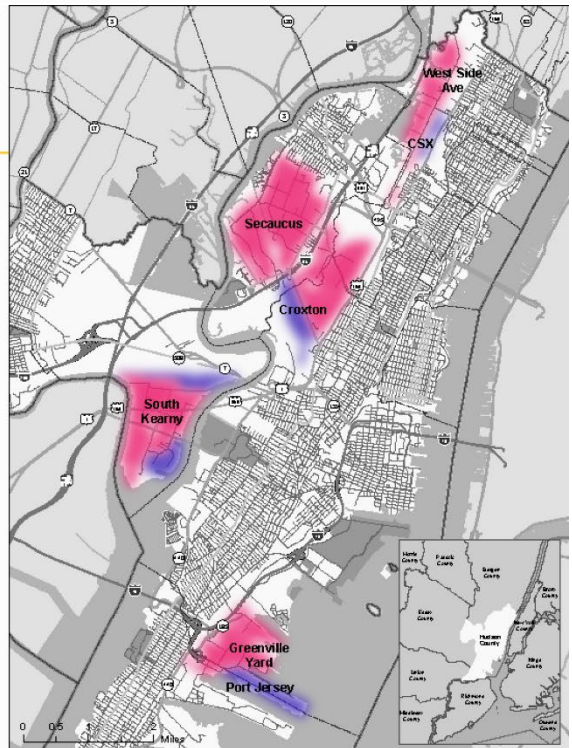
Initial Findings

Intermodal and Freight/Warehousing Clusters

Legend

- Freight Facilities
- Intermodal

Selected based on frequent trip patterns





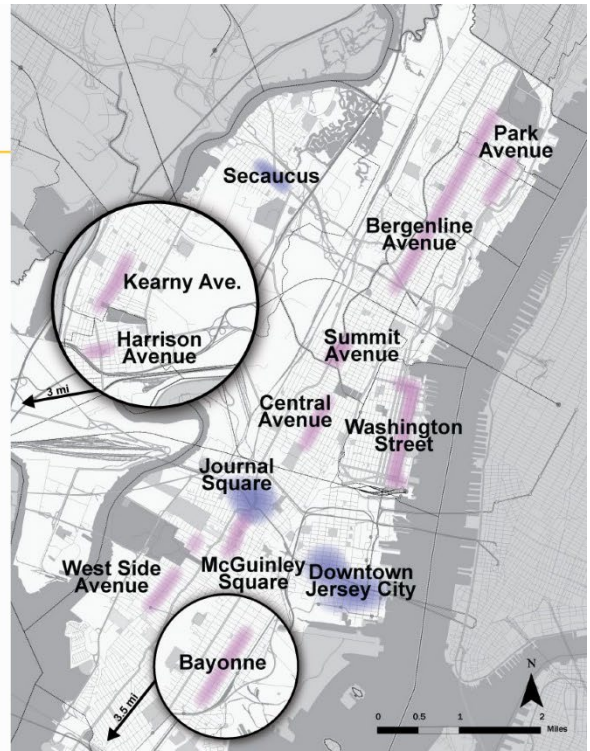
Initial Findings

Hudson County Local Business Districts

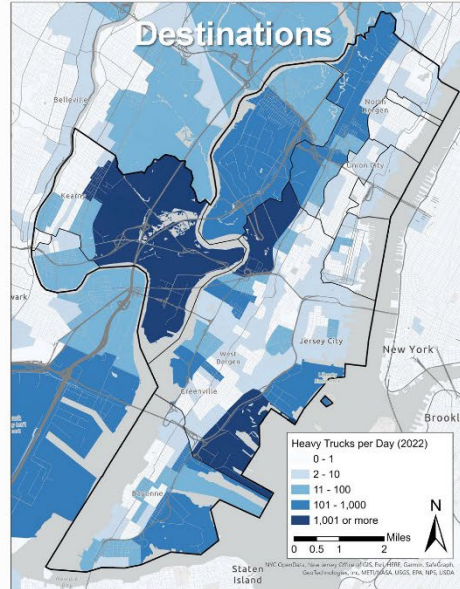
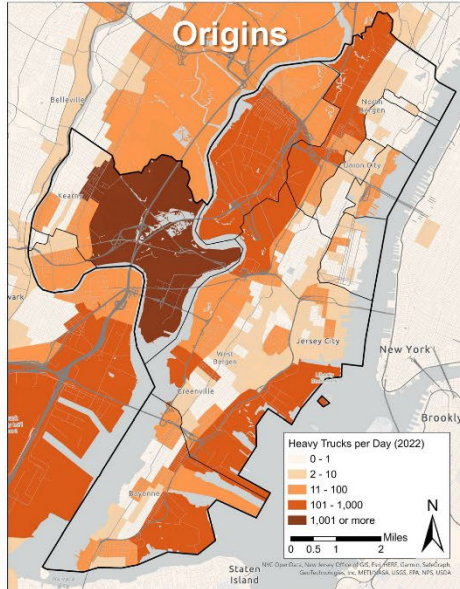
Legend

- Corridor Business Districts
- Neighborhood Business Districts

Selected based on frequent trip patterns

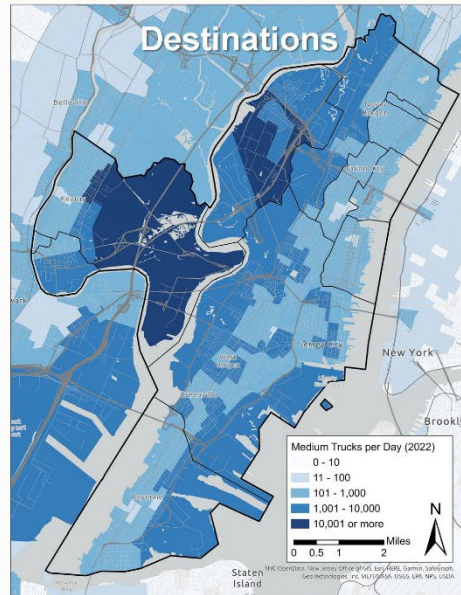
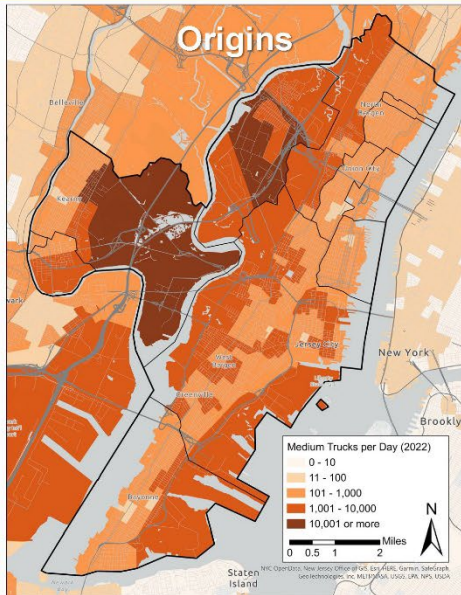


Initial Findings: Heavy Truck Trip Patterns





Initial Findings: Medium Truck Trip Patterns



15



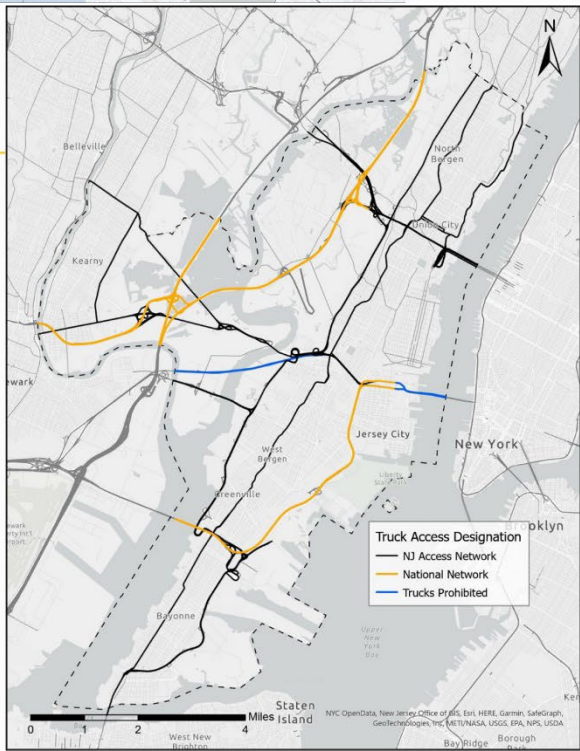
Initial Findings

Truck Routes in Hudson County

Legend

- NJ Access Network
- National Network
- Trucks Prohibited

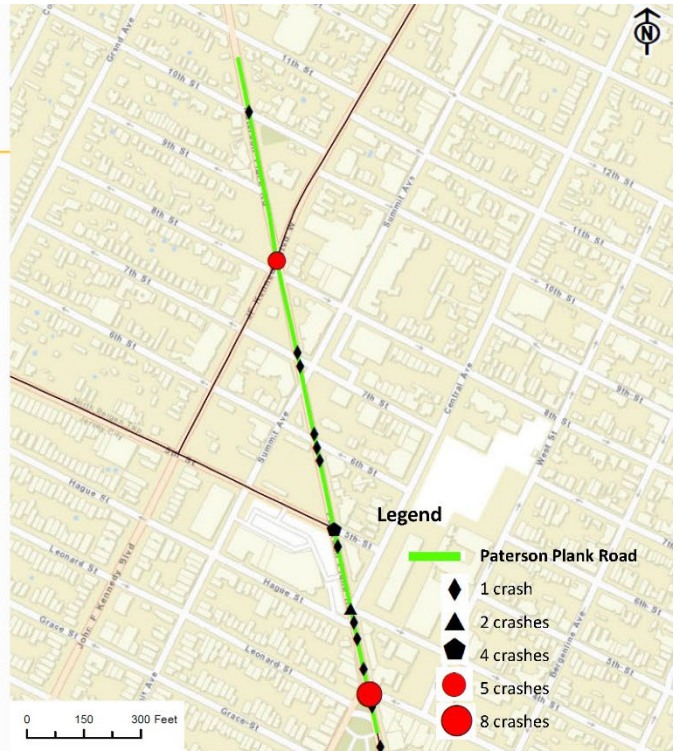
Access designations pertain to large trucks. Mapping is illustrative only





Initial Findings: Safety

- 1,069 total crashes on County roadway network (2017-2021) (NJDOT Safety Voyager)
- 20 total fatalities (2015-2019) including 4 on County roadway network (NHTSA Fatality Analysis Reporting System (FARS))
- 14 pedestrian/cyclist fatalities (2015-2019) including 1 on County roadway network (NHTSA FARS)
- 14 high-crash County roadway corridors
- 5 County roadway corridors selected for further study

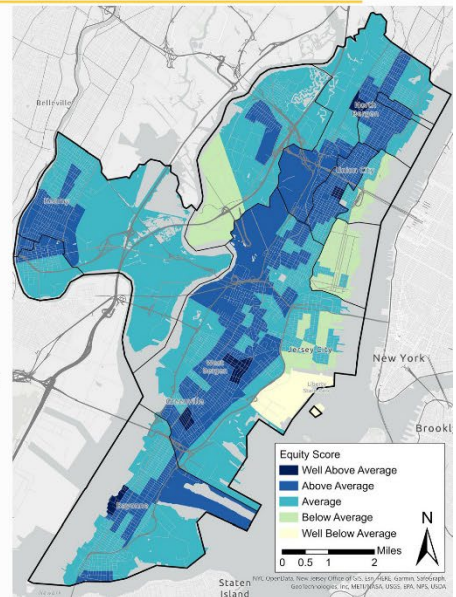
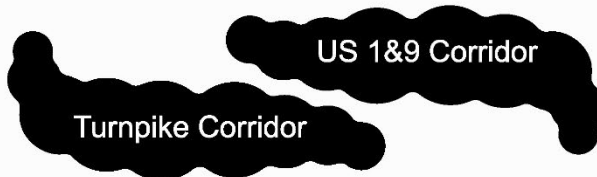


Initial Findings: Community Impacts

Demographics



Noise/Emissions Problem Locations



Initial Findings

Designated Curbside Loading Zones

- Quick deliveries or pick-ups
- Loading zone and on-street parking depends on time of day
- Identified by clear signage and/or designated pavement markings
- Managed through apps and pricing
- Loading zone programs can reduce double-parking/congestion



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Initial Findings

Safety Technologies

- Side guards
- Side cameras and other detection equipment

Alternative Clean Fuels

- Compressed natural gas
- Battery electric
- Hydrogen fuel cell



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Discussion

- Specific locations where trucks cause safety issues?
- Residential streets where you see large amounts of truck traffic?
- Do you encounter parked trucks that block traffic for vehicles or pedestrians? If so, where?
- Do you think that on-street parking spaces in front of businesses should be designated for loading zones for trucks?



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Next Steps

- Review public comments
- Complete data collection and analysis
- Develop recommendations
- Technical Advisory Committee Meeting 2 in December



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Thank You!



Contact

Kevin Force, Project Manager

kforce@hcnj.us

www.hcnj.us/trucking-study

countyplanning@hcnj.us

HUDSON COUNTY TRUCKING STUDY

PUBLIC MEETING #1 SUMMARY



Public Meeting #1

Date: November 3, 2022
Time: 6:30 – 7:30 PM
Meeting Recording: <https://bit.ly/3hiRBce>
Attendees: Antonio Quinlan
Ayla Schermer
Chris Adair
Diane Kaese
Deirdre Newman
James Lee
Jeanette
John Reichman
Sandy Gevero

Meeting Purpose

The primary objectives of Public Information Meeting were to:

- Review project purpose, goals, and work plan.
- Solicit open discussion and feedback on local experience with truck traffic.

Meeting Agenda

- Introductions/Welcome
- Zoom Polling
- Study Purpose, Need, Goals and Work Plan
- Public Engagement Plan
- Data Assessment/Initial Findings
- Discussion
- Next Steps/Schedule



Discussion Summary

Primary Concern: Local Truck Traffic

- A key issue stressed by virtually all attendees was the problem of trucks using local streets, particularly large delivery trucks in restricted areas. The number of deliveries from companies like Amazon, FedEx, UPS, and USPS has increased dramatically. Additional enforcement is needed to impose truck restrictions as well as blocked crosswalks, double-parking, bike lane blocking, and cutting through local streets instead of using highways. Additionally, there is a significant disconnect between “no truck” signage and actual trucks on the streets. Regulation and enforcement are critical.

Key Truck Traffic Locations

- John F. Kennedy Boulevard East has signage noting that commercial vehicles are excluded, this regulation is no longer being observed.
- John F. Kennedy Boulevard exit for Weehawken has a “no trucks over 4 tons” sign, this regulation not being observed.
- John F. Kennedy Boulevard in Weehawken has no truck/bus signage, but this regulation is not being observed.
- Northbound on John F. Kennedy Boulevard East there is a “no truck” sign, but this regulation is not being observed.
- Trucks illegally leaving Tonnelle Avenue (ongoing truck traffic cut-through location).
- Trucks coming from Lincoln Tunnel onto Park Avenue and then taking local streets.
- Trucks on John F. Kennedy Boulevard East; not a truck route, has poor truck restriction signage.
- St. Paul’s neighborhood in Jersey City, local street problem areas.



- Hoboken: Amazon delivery fulfillment center and Shop Rite gets smaller trucks, queuing up, blocking crosswalks. Corners that are not daylighted¹³ have these issues with trucks blocking crosswalks. Need to find a better way to manage smaller vehicle deliveries.

Other Issues

- Would like to see designated loading zones.
- Cargo bikes would be useful for last mile deliveries.
- Above cargo bike suggestion requires more protected bike lanes and lane use enforcement. Would only work in certain places with the proper infrastructure, like Jersey City.
- Priority should be given to bike safety over convenient and speedy truck delivery.
- Continued coordination with environmental and community groups is critical.
- Concerns that private businesses will not implement costly truck safety implements unless they are mandated by the government.
- Important to also consider how truck traffic vibrations affect historic buildings.

Suggestions/Next Steps

- New York City bans large trucks over 53 feet except on highways or with special permits; Hudson County should consider this.
- Add attendee email addresses to project database where available.

Public Meeting Zoom Poll Responses

Zoom Poll 1: Online Shopping; packages delivered by cargo van (*top: few times/month*)

¹³ Daylighting is a pedestrian safety measure achieved by removing curb parking spaces around an intersection, increasing visibility for pedestrians and drivers, and minimizing conflicts (source: [Streetopia](#))

HUDSON COUNTY TRUCKING STUDY

PUBLIC MEETING #1 SUMMARY



polls Polls

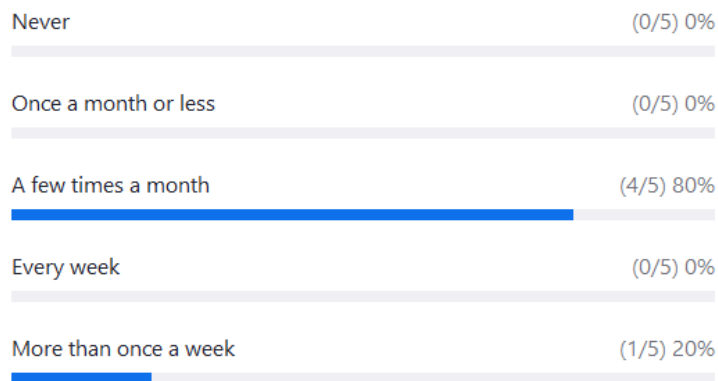


Online Shopping

Poll | 1 question | 5 of 11 (45%) participated

1. How often do you shop online? (your packages delivered to you by cargo van) (Single Choice) *

5/5 (100%) answered





Zoom Poll 2: In-Store Shopping; goods delivered to store by truck (*top: few times/month*)

Zoom Polls

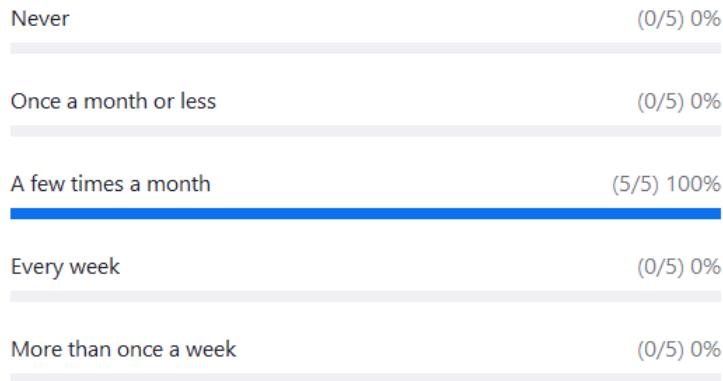


In-Store Shopping

Poll | 1 question | 5 of 10 (50%) participated

1. How often do you shop in stores? (the goods you are buying were delivered to the store by a truck) (Single Choice) *

5/5 (100%) answered



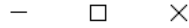
Zoom Poll 3: Dining Out; food brought to restaurant by truck (*top: few times/month & once a month or less*)

HUDSON COUNTY TRUCKING STUDY

PUBLIC MEETING #1 SUMMARY



polls Polls

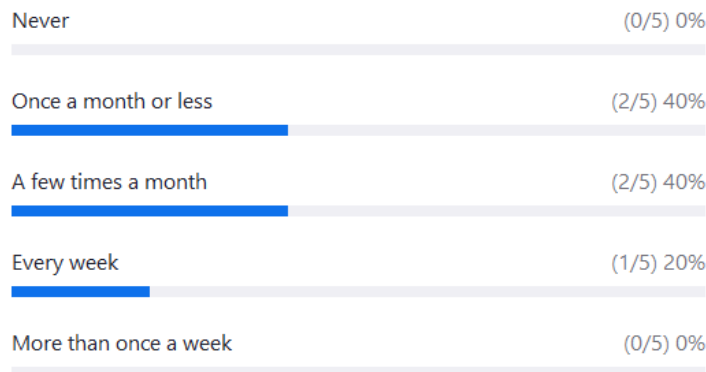


Dining Out

Poll | 1 question | 5 of 10 (50%) participated

1. How often do you dine out? (your food was brought to the restaurant by a truck) (Single Choice) *

5/5 (100%) answered



Public Meeting #2



HUDSON COUNTY TRUCK ROUTES ASSESSMENT

Public Meeting #2

March 8, 2023



Zoom Meeting Guidelines

A screenshot of a Zoom meeting window. The main content area is black with white text listing guidelines: "Muted upon entry", "Video optional", and "Chat function available for questions". The bottom toolbar is visible, with icons for Unmute, Start Video, Participants (7), Chat, Share Screen, Record, Reactions, and Leave. The Unmute, Start Video, and Chat icons are circled in red.

- Muted upon entry
- Video optional
- Chat function available for questions

2

Introductions/Welcome

Project Team

- Hudson County Division of Planning
- North Jersey Transportation Planning Authority (NJTPA)
- Consultant Team
 - GPI
 - FHI Studio
 - Arup
 - Cheng Solutions, LLC



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Agenda

- Outreach/Feedback Received
- Data Analysis and Recommendations
- Discussion
- Next Steps



4

What Do You Think?

5

Outreach/Feedback Received

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TAC Meetings

Meeting #1: August 17, 2022

- Study overview, TAC role, initial data findings
- TAC members provided data and information

Meeting #2: February 9, 2023

- Shared analysis findings and recommendations
- TAC provided feedback

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Virtual Freight Forums

September 21: Policy & Economy Forum

September 27: Local Deliveries

September 27: Warehousing & Distribution

Key Issues

- Infrastructure and geometry (upgraded signage, striping, signals, adding capacity and breakdown lanes)
- Parking access (both municipal parking and loading zones)
- New technologies of interest, but cost prohibitive

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Public Information Meeting #1

November 3, 2022

Key Issues

- Large delivery trucks using local streets as cut-throughs
- Trucks are in restricted areas, enforcement is critical
- Disconnect in “no truck” signage vs. actual restricted areas
- Trucks are double parking, crosswalks and bike lanes are blocked, loading zones are needed
- North Hudson problem areas: JFK Boulevard East, local streets off Tonnelle Ave., and local streets off Lincoln Tunnel onto Park Ave.
- Jersey City problem areas: local streets at St. Paul’s Ave.

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What Do You Think?

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Place Types

	Effectiveness
High	Dark Blue
Medium	Medium Blue
Low	Light Blue

	Commercial	Commercial (Mixed Use)	Residential	Industrial
Curb Loading Zone	Dark Blue	Dark Blue	Light Blue	Light Blue
Curb Demand Management	Dark Blue	Dark Blue	Light Blue	Light Blue
Shared Space	Dark Blue	Dark Blue	Medium Blue	Light Blue
Off-Hour Delivery	Medium Blue	Dark Blue	Light Blue	Dark Blue
Delivery Consolidation	Light Blue	Dark Blue	Dark Blue	Light Blue
Enforcement	Dark Blue	Dark Blue	Light Blue	Dark Blue
Outreach	Dark Blue	Dark Blue	Dark Blue	Dark Blue
Technology and Innovation	Medium Blue	Dark Blue	Light Blue	Dark Blue

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Commercial/Commercial (Mixed-Use)

Examples

- Harrison Ave and Frank Rodgers Blvd, Harrison
- Paterson Plank Road, Union City
- Kennedy Blvd, Jersey City
- Newark St, Hoboken

Effective Strategies

- Curb loading zones
- Curb demand management
- Shared space
- Enforcement
- Outreach



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Residential

Examples

- Throughout Hudson County

Effective Strategies

- Improved signage, enforcement
- Low-cost approaches to daylight intersections
- E-Cargo bikes
- Consolidated delivery sites



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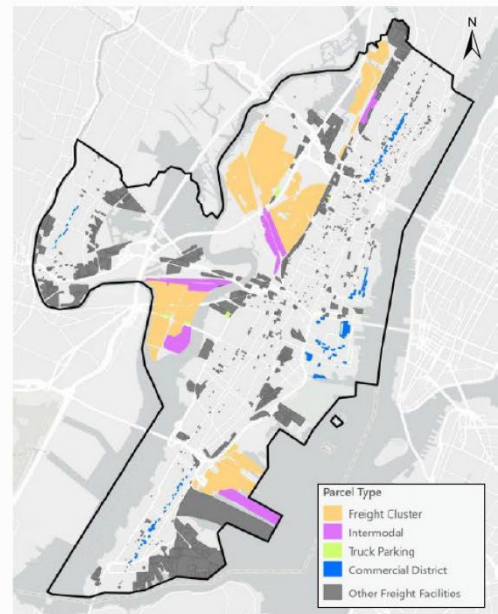
Industrial

Examples

- Intermodal Terminals
- Freight Clusters

Effective Strategies

- Updated signage and wayfinding
- Geometric changes
- Engagement with other transportation agencies
- Truck parking and rest stops
- Public process for truck route changes
- Emissions, noise and equity



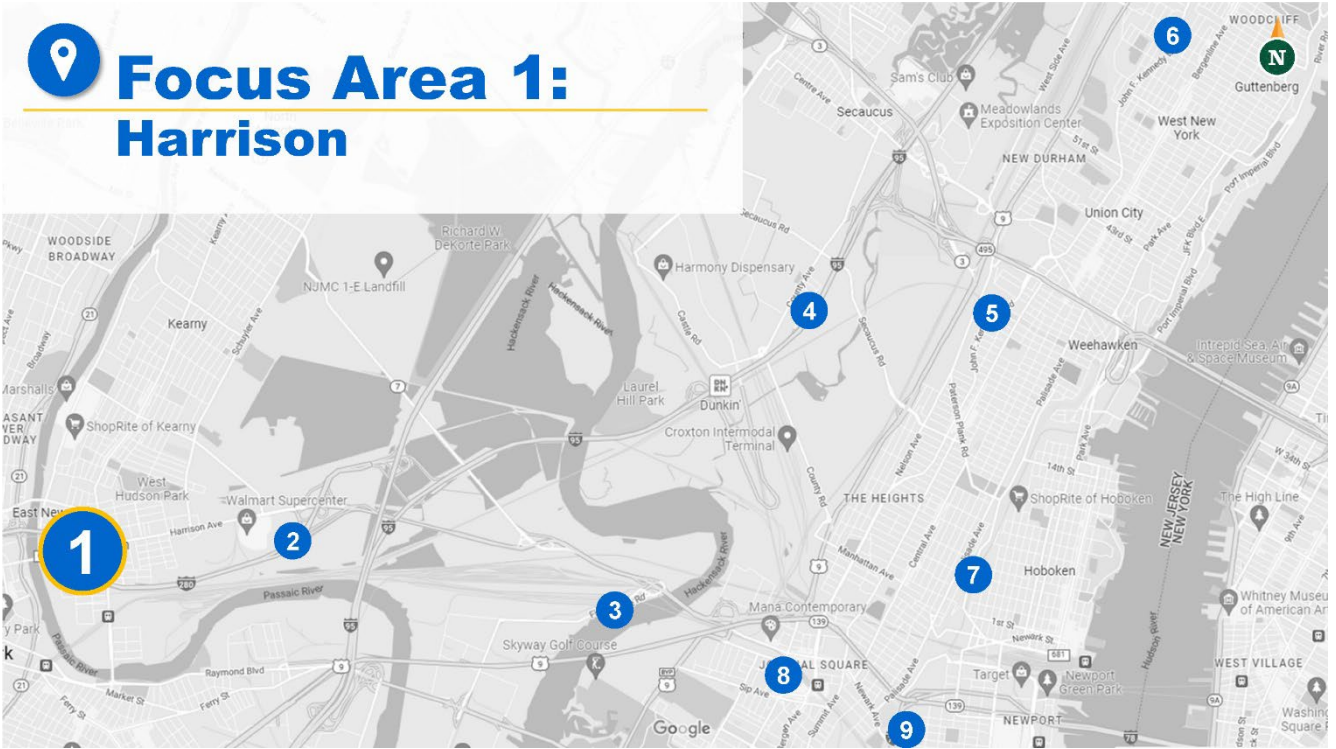
Discussion

Focus Areas





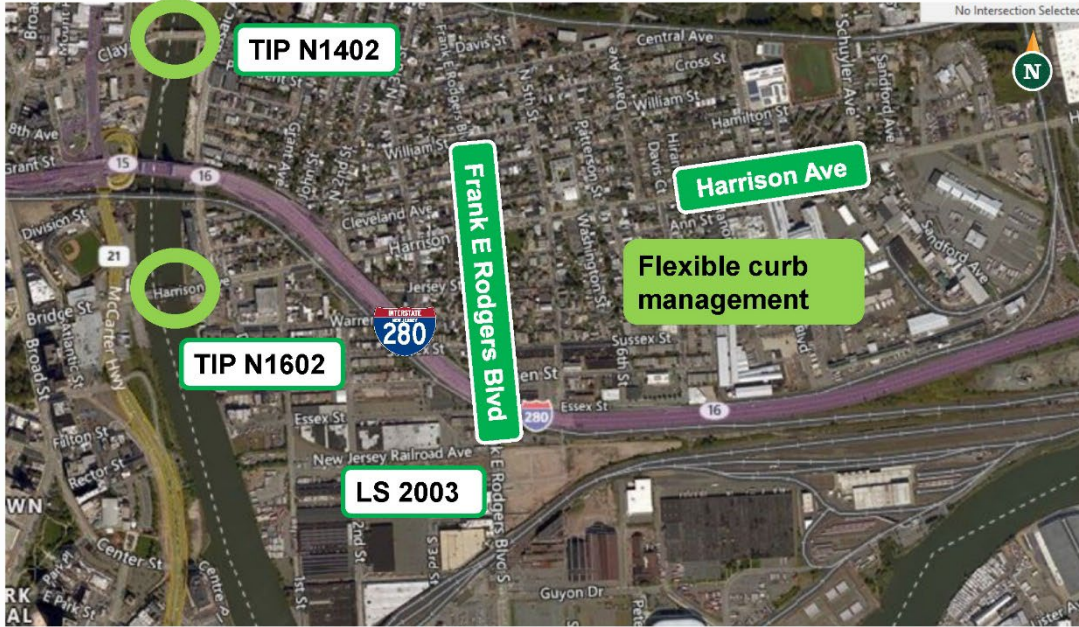
Focus Area 1: Harrison



Focus Area 1: Harrison

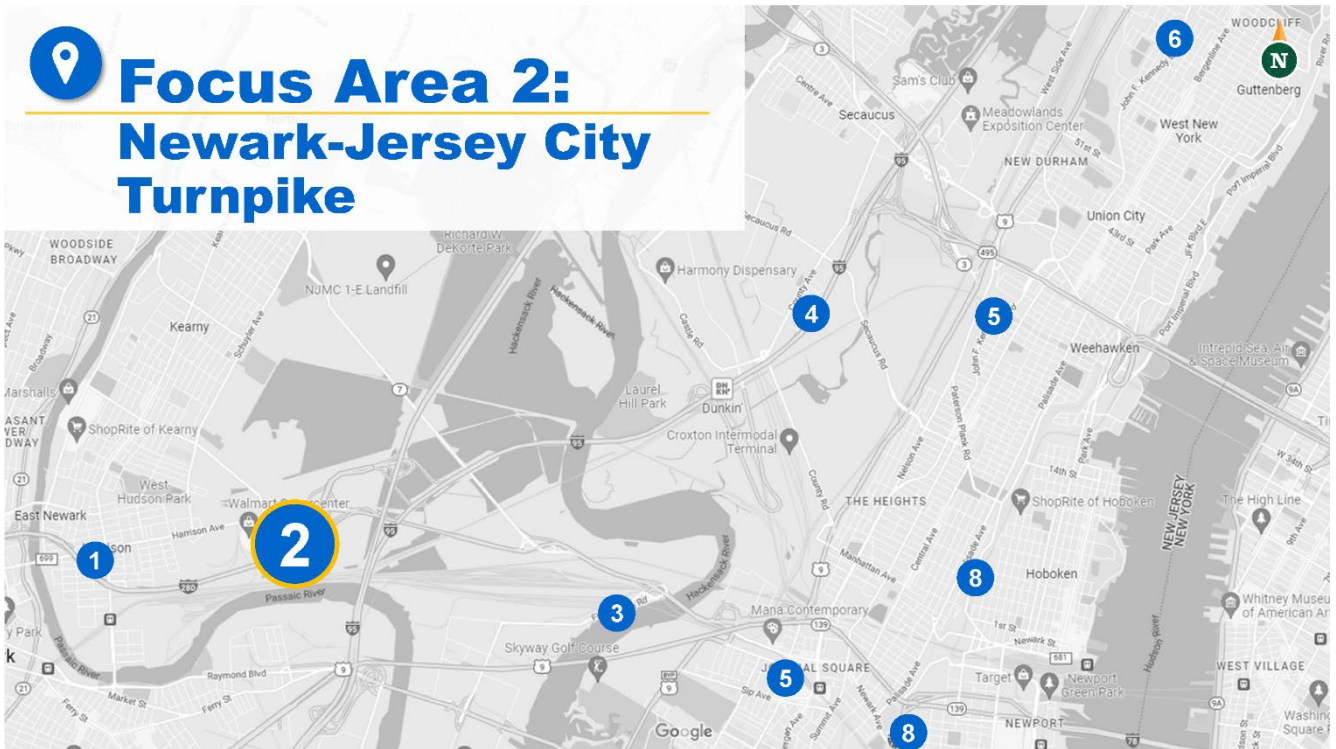


Focus Area 1: Harrison

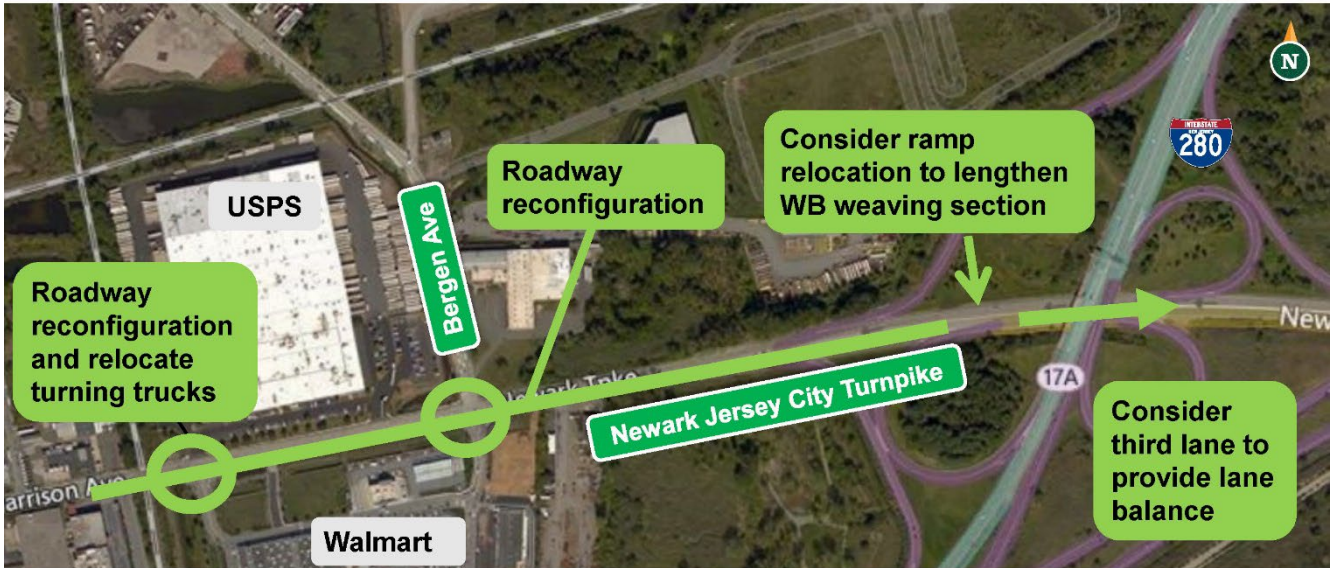


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Focus Area 2: Newark-Jersey City Turnpike

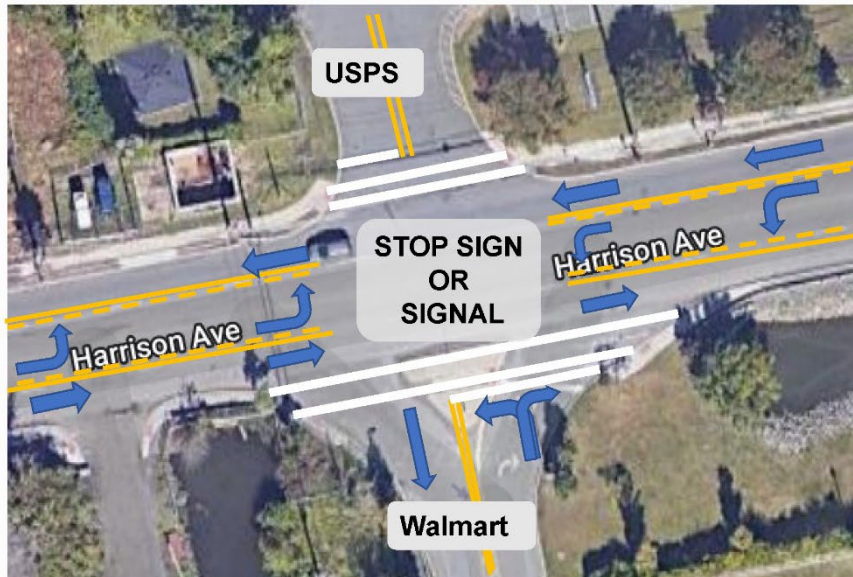


Focus Area 2: Kearny



23

Focus Area 2: Kearny

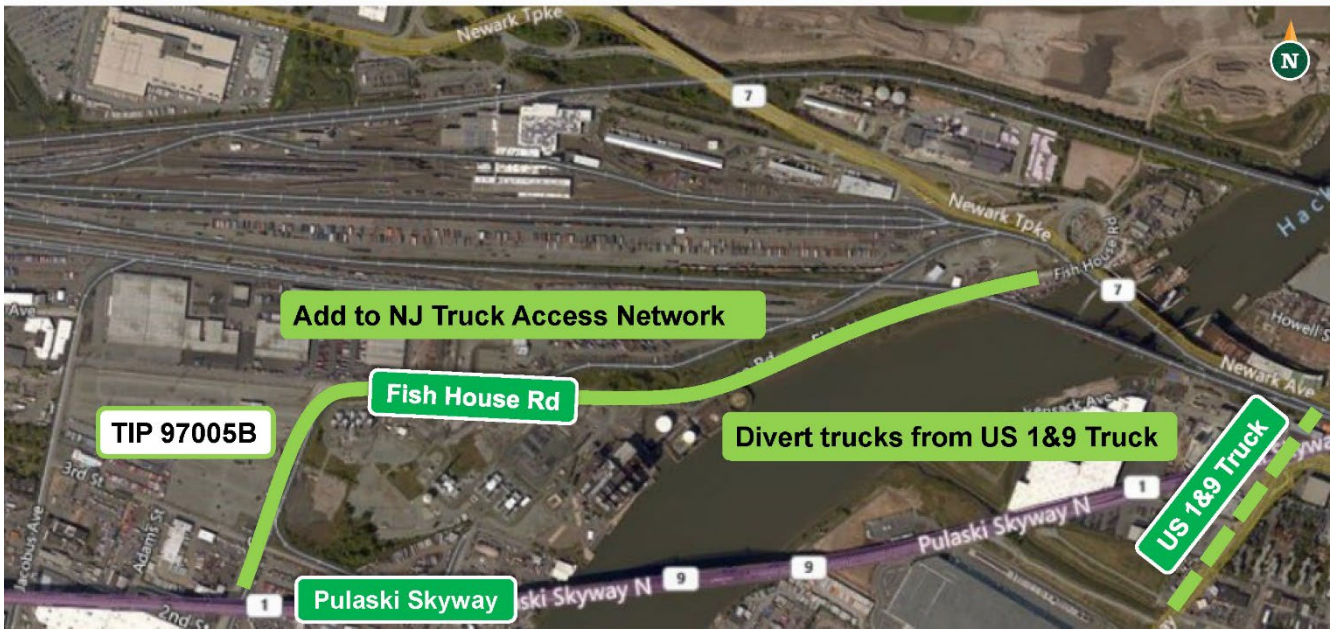


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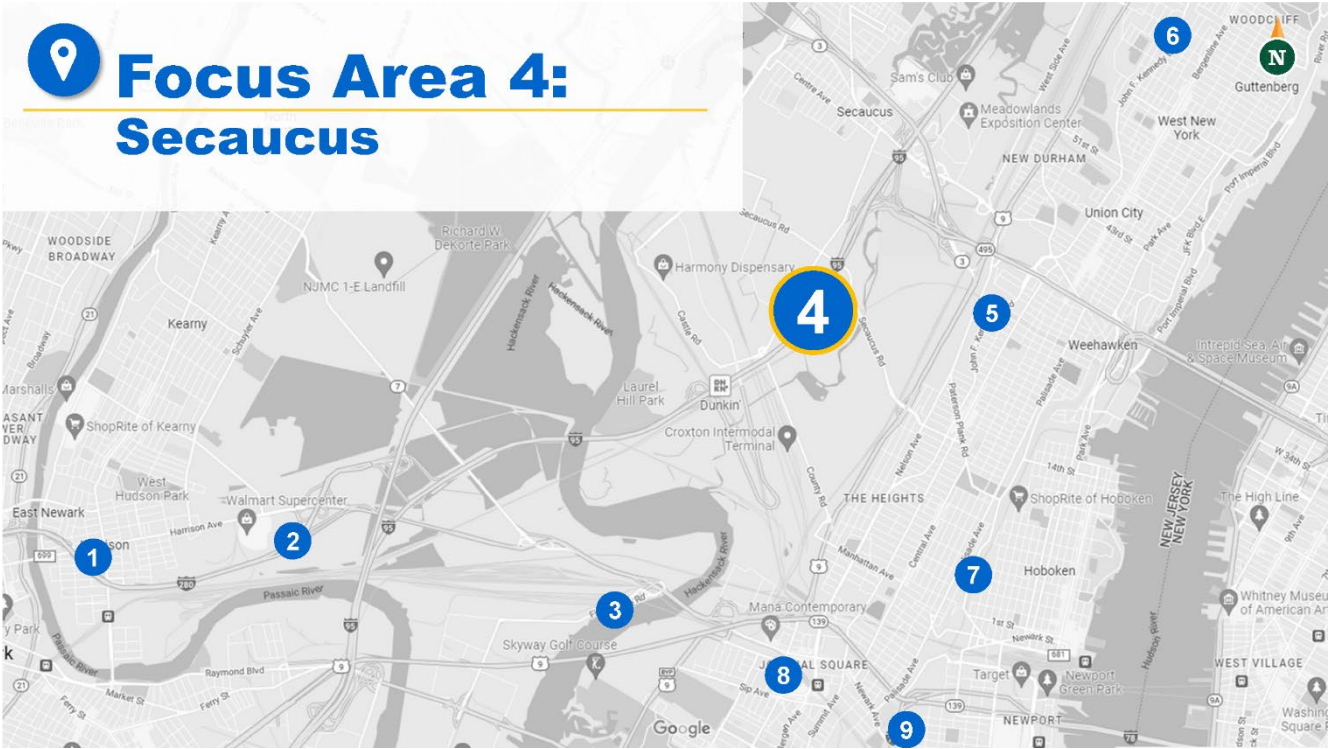
Focus Area 3: East Kearny



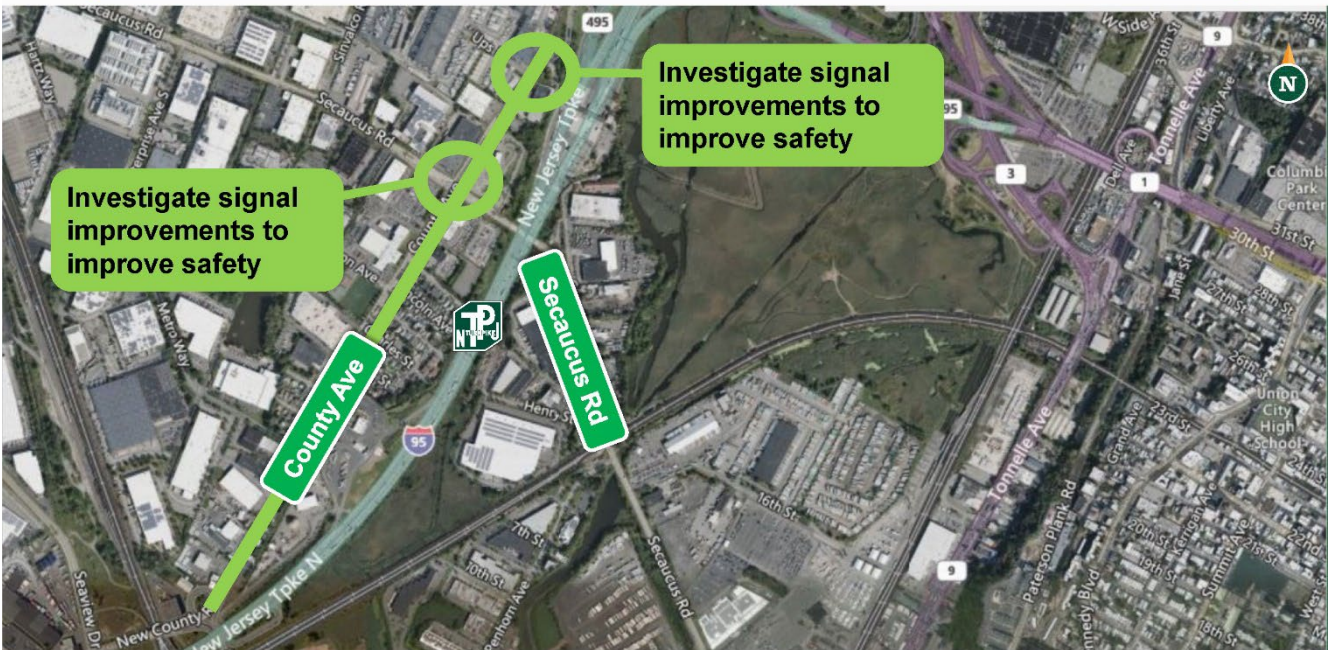
Focus Area 3: East Kearny



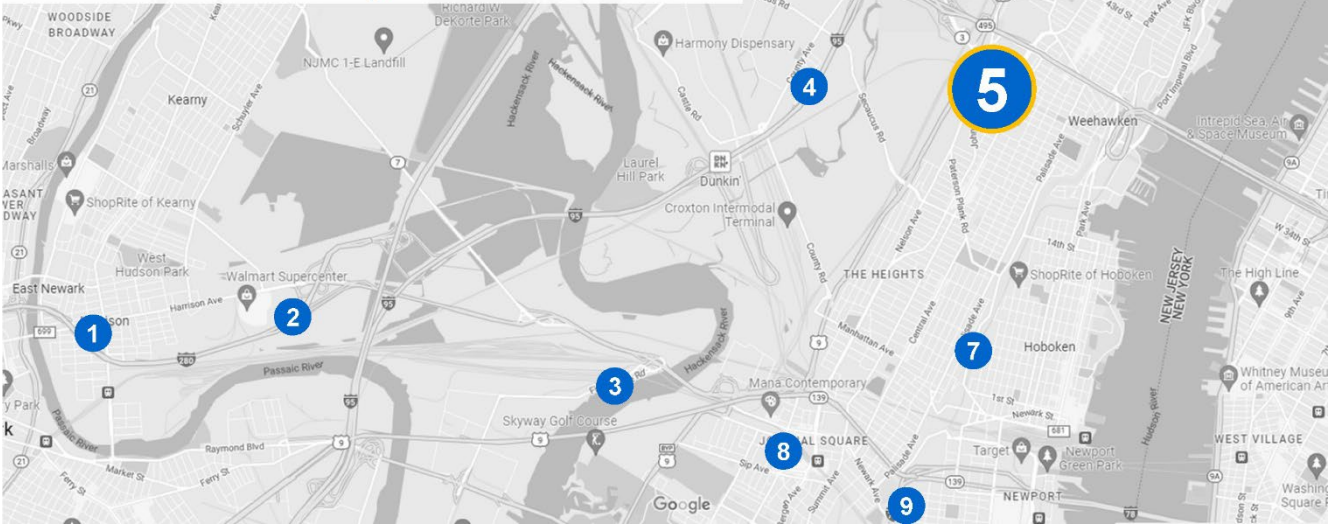
Focus Area 4: Secaucus



Focus Area 4: Secaucus



Focus Area 5: North Bergen Union City

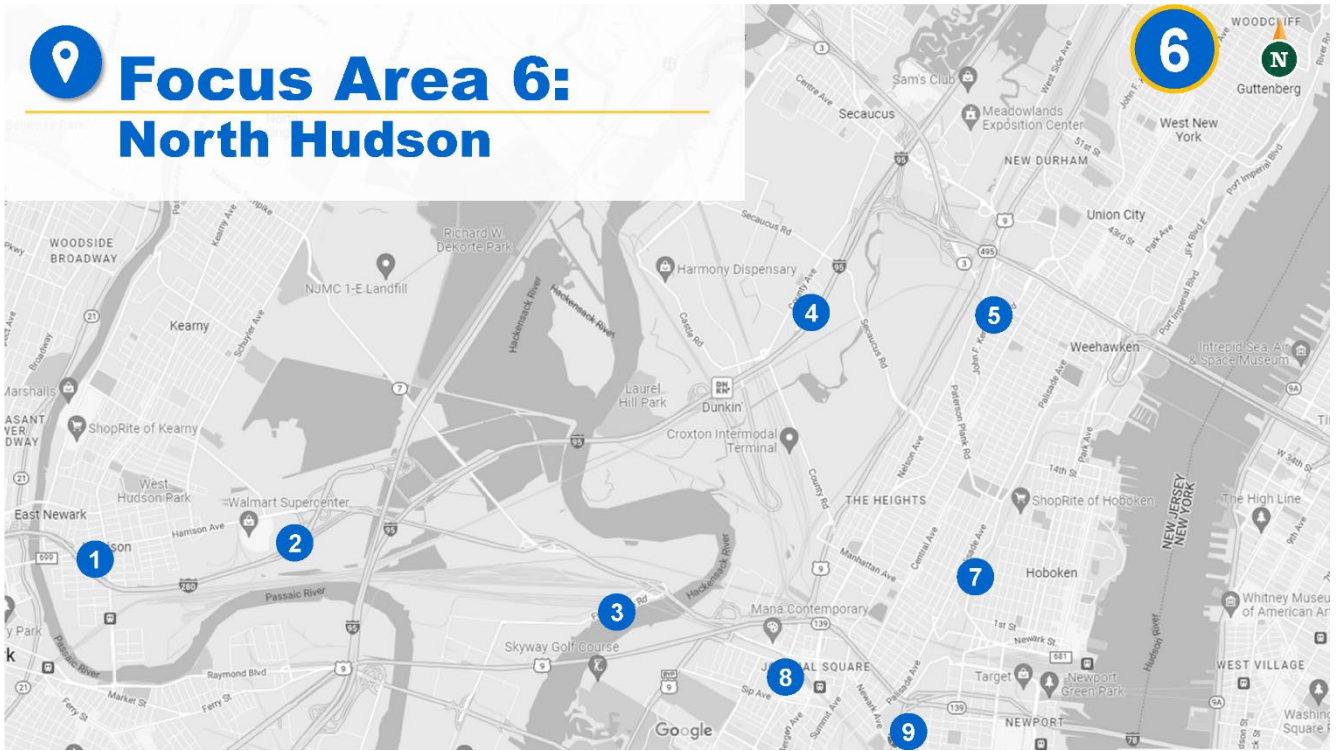


Focus Area 5: Union City & North Bergen

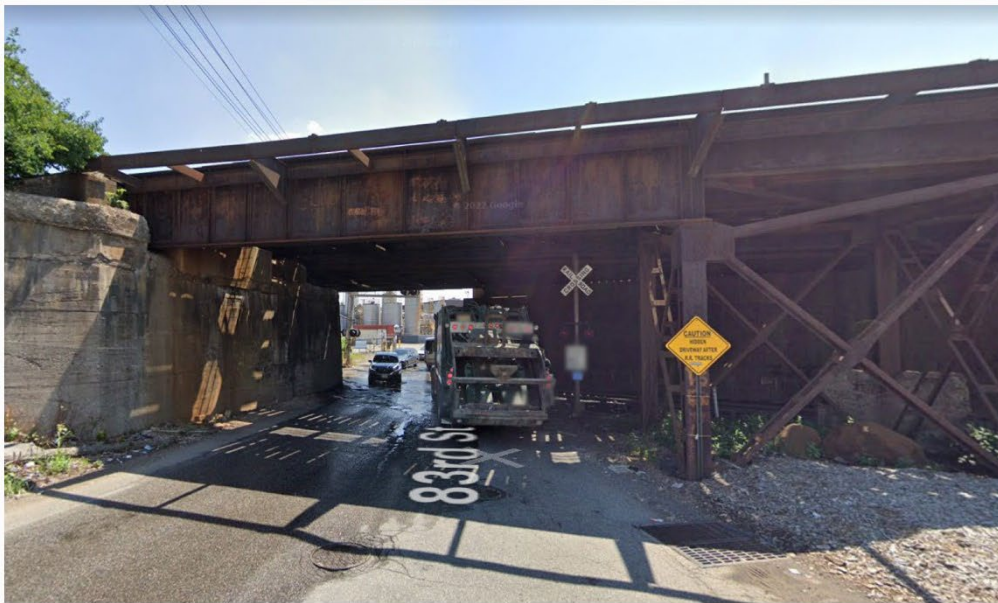




Focus Area 6: North Hudson



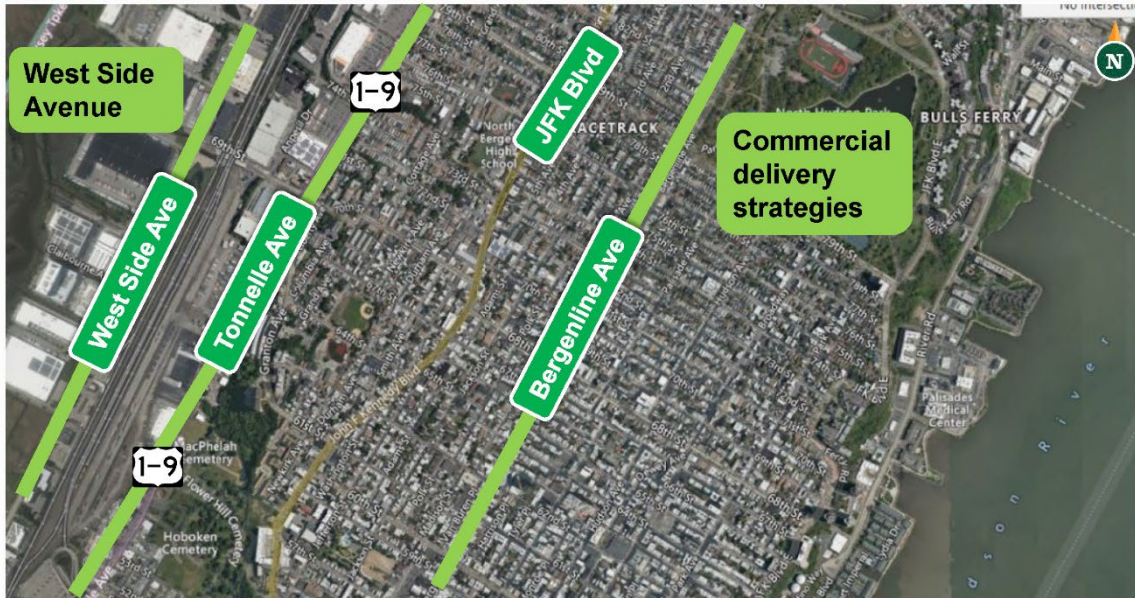
Focus Area 6: North Hudson



83rd
Street at
CSX
Railroad
bridge

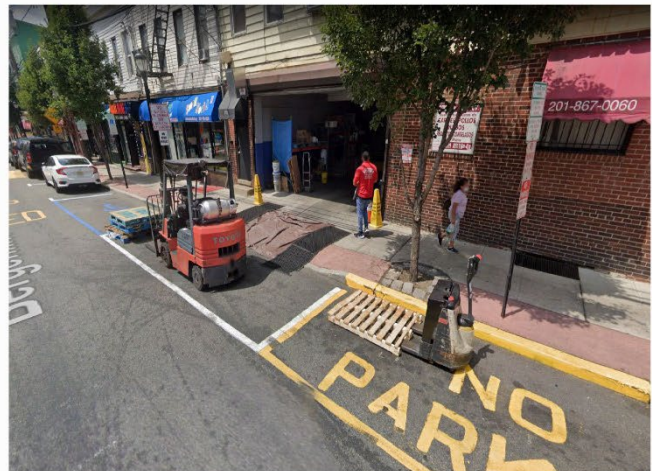
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Focus Area 6: North Hudson



33

Focus Area 6: North Hudson



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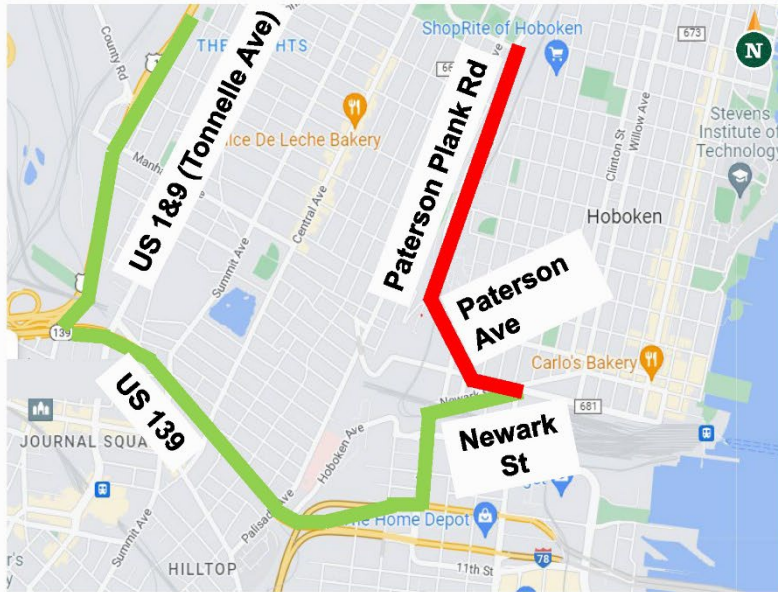
Focus Area 7: Hoboken



Focus Area 7: Hoboken



Focus Area 7: Hoboken

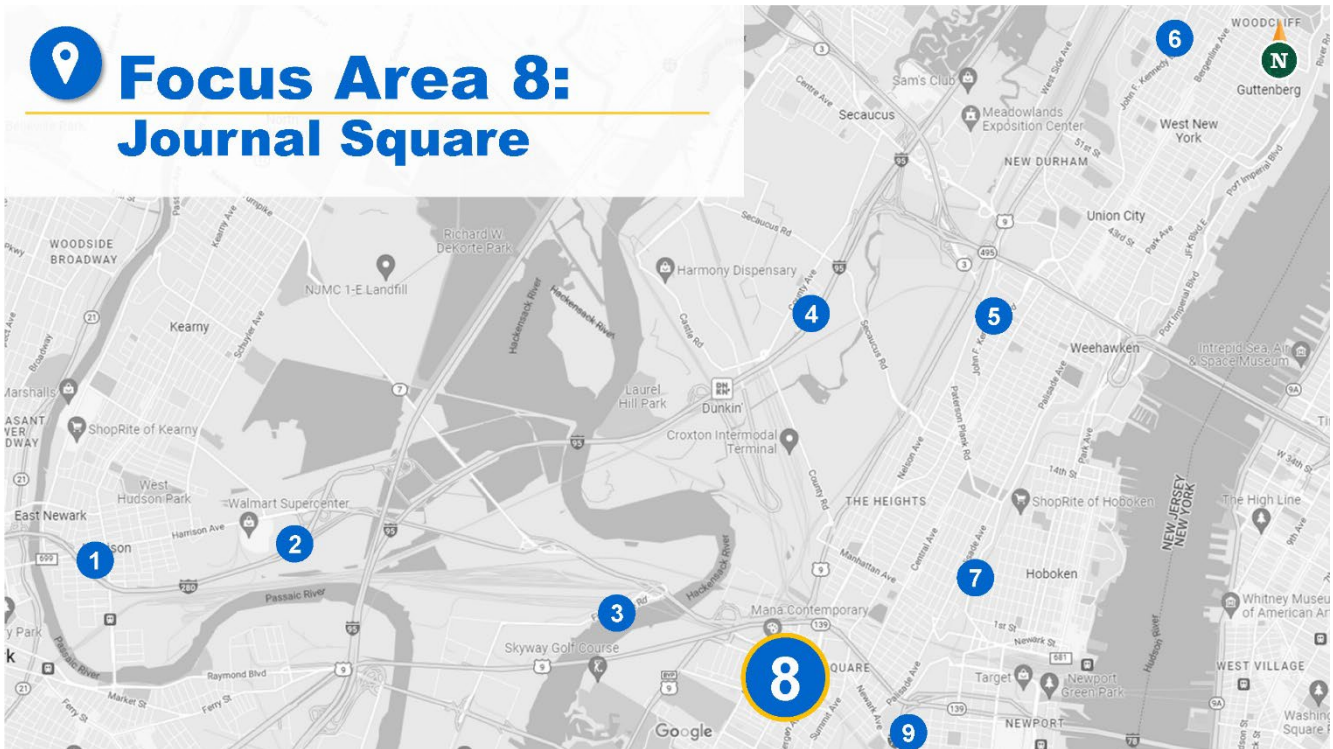


Legend

- Via Paterson Ave to Paterson Plank Road
- Via Newark Street to Route 139 to US 1&9

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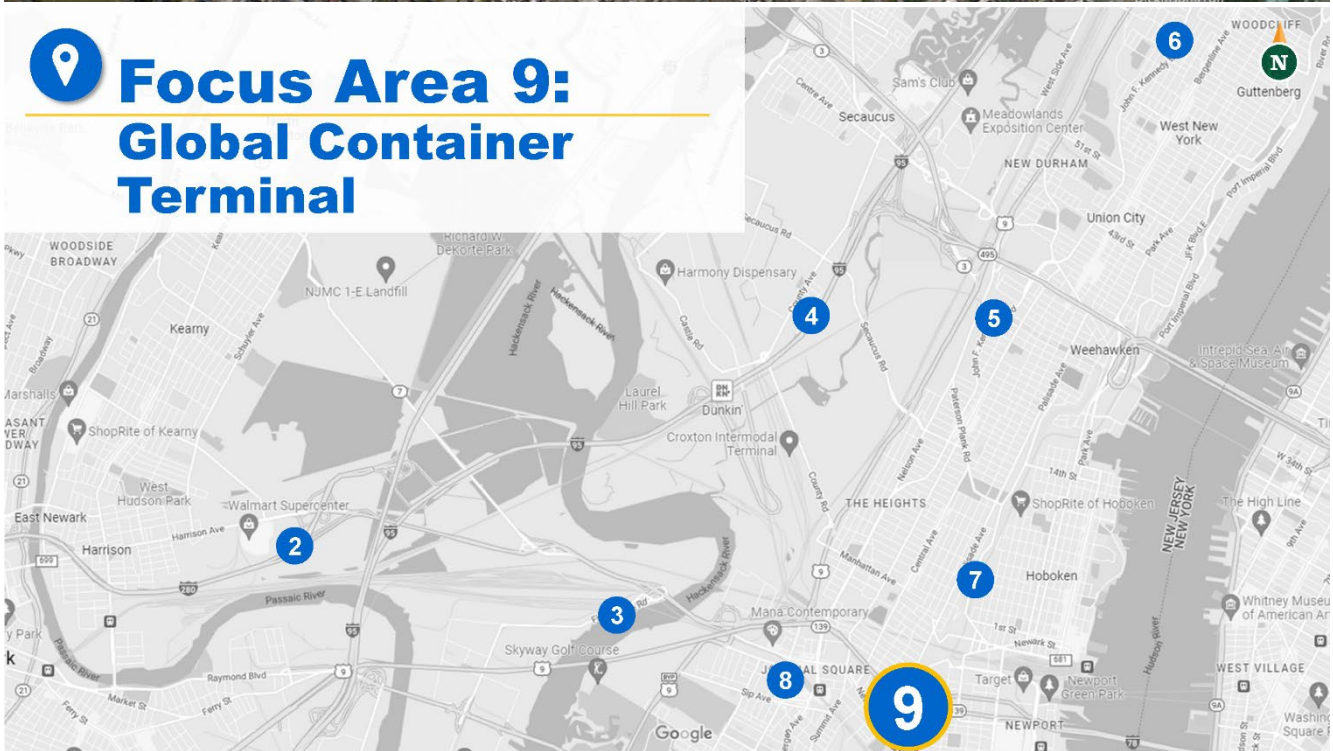
Focus Area 8: Journal Square



Focus Area 8: Journal Square



Focus Area 9: Global Container Terminal



Focus Area 9: Global Container Terminal



Discussion

Next Steps

- Incorporate your feedback into Draft Report
- TAC Meeting 3 in April 2023
- Final Report released in June 2023

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Thank You!



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HUDSON COUNTY TRUCKING STUDY

PUBLIC MEETING #2 SUMMARY



Public Meeting #2

Date: March 8, 2023

Time: 6:30 – 7:30 PM

Meeting Recording: <https://bit.ly/3lnEMQp>

Attendees: Chuck Carol (Journal Square Community Association [JSCA])
Mervett Hefyan
Mike Manzella (City of Jersey City)
Stephanie Martinez
Mary Miraglia (JSCA)
Megan Santosusso (JSCA, m.santosusso@gmail.com)
Edward Trochimczuk (JSCA, edt122345@gmail.com)
Michael Verney (Global Container Terminal)

Meeting Purpose

The primary objectives of Public Information Meeting were to:

- Review public and stakeholder outreach feedback received
- Solicit discussion and feedback on data analysis of place types and recommendations

Meeting Agenda

- Introductions/Welcome
- Zoom Poll
- Outreach Feedback Received
- Zoom Poll
- Data Analysis by Place Type
- Discussion
- Recommendations by Focus Area
- Discussion
- Next Steps/Schedule

HUDSON COUNTY TRUCKING STUDY

PUBLIC MEETING #2 SUMMARY



Discussion Summary

Public Meeting Zoom Poll Responses

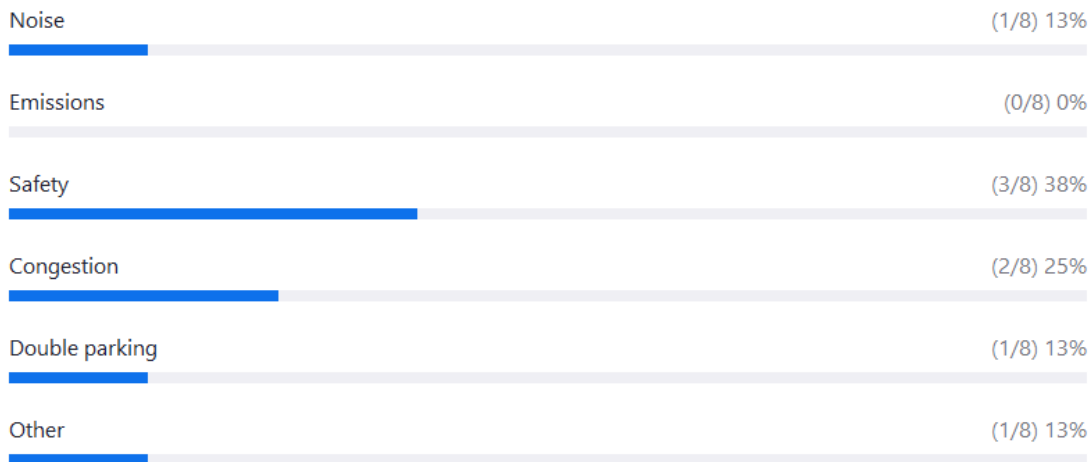
Zoom Poll 1: What is your top concern related to trucks on Hudson County roadways?
(Top choices: safety and congestion)

Top Concerns

Poll ended | 1 question | 8 of 10 (80%) participated

1. What is your top concern related to trucks on Hudson County roadways? (Single Choice) *

8/8 (100%) answered



The "Other" selection noted below via chat comment:

Megan Santosusso 6:41 PM: "Trucks on 'no truck' roads".



Zoom Poll 2: What is the largest community benefit that the trucking and warehouse industry provides? (Top choices: support jobs/pay taxes, short delivery times/reduced cost)

Top Benefits

Poll ended | 1 question | 7 of 10 (70%) participated

1. What is the largest community benefit that the trucking and warehouse industry provides? (Single Choice) *

7/7 (100%) answered

Warehouses provide short delivery times and reduce costs for most goods	(2/7) 29%
Trucking and warehouse companies support jobs and pay taxes	(3/7) 43%
Trucking fees and taxes (gas tax, etc.) support roadway infrastructure improvements	(0/7) 0%
Other? (discussion)	(2/7) 29%

The “Other” selections noted below via two chat comments:

Mary Miraglia & Chuck Carol 6:49 PM: Sure, trucking industry provides benefits, mostly in delivery of needed goods. But old streets like those in Jersey City are not built to handle tractor-trailers and other large trucks. There should be hand-off areas on the outskirts of the city where goods are handed off to smaller vehicles for local delivery.

Mervett Hefyan 6:50 PM: Strategically placed warehouses can be an opportunity for last-mile delivery via smaller, more appropriate vehicles for streets.

Primary Concern: Large Truck Traffic in the St. Paul’s Avenue Neighborhood

- A key issue stressed by virtually all attendees was the problem of large trucks using local streets along St. Paul’s Avenue. Houses are shaking and foundations cracking. Additional enforcement is needed to impose truck regulation and enforcement are critical. The Journal Square Community Association and other area residents have been in touch with the City of Jersey City about this since 2019 and there has been little to no action.
- Large trucks using following areas:
 - Newark Avenue
 - Tonnelle Avenue
 - St. Paul’s Avenue
- Large trucks cut-through areas:



- From Charlotte Circle to Newark Avenue
- To US Route 1&9 via Tonnelle Avenue
- Dey Street
- Senate Place
- Newark Avenue
- Double-parking areas:
 - John F. Kennedy Boulevard between Bergen Avenue and Tonnelle Avenue
- Suggestions for improvement:
 - Appropriate signage in restricted areas, “No Stopping or Standing”, “Strictly Enforced”
 - Divert trucks at Charlotte Circle westbound, so that they do not have to go through Tonnelle and St. Paul’s Avenues unless they are local
 - Increased enforcement
 - Higher fines for Amazon Prime trucks, worst offenders

Focus Area Comments

- **Focus Area 1**, via chat from Stephanie Brooks, 7:05 PM: [https://www.njtpa.org/Projects-Programs/Transportation-Improvement-Program-\(TIP\)/Current-TIP.aspx](https://www.njtpa.org/Projects-Programs/Transportation-Improvement-Program-(TIP)/Current-TIP.aspx). This was added to the chat as a reference point regarding Transportation Improvement Projects (TIPs) mentioned as part of the Harrison area recommendations.
- **Focus Area 6**, via chat from Mervett Hefyan: I appreciate the focus on Bergenline Ave. Double-parked vehicles slow down buses, so hopefully some of these recommendations can be implemented to mitigate some of that.
 - *Kevin Force responded verbally* that many of the recommendations will be under the jurisdiction of the associated focus area municipality, as Bergenline Avenue is not a county road, and many of the recommendations apply to roads not under the County’s jurisdiction. It is the County’s hope that this Truck Study and potential solutions can serve as a starting point for coordinating with each of the municipalities.
- **Focus Area 7**, via chat from Mary Miraglia & Chuck Carol: Assumes that Paterson Plank Road between US Route 1&9 and John F. Kennedy Boulevard would be very congested with truck traffic.



- *Ken Hausman responded verbally* and confirmed this comment, noting that the data showed that this area has the highest truck crashes on any County Road.
- *Kevin Force responded verbally* that the City of Hoboken is a physically constrained environment with very few access points. Hudson County is working with the city on rerouting options, and there is also a county project moving forward to develop safety improvements along Paterson Plank Road.
- **Focus Area 9, via verbal comment from Michael Verney, Global Container Terminal (GCT):** asked about upgrades to the New Jersey Turnpike at Exit 14A, as it a choke point for customers, employees and residents. Asked if there was any progress and/or timeline on the studies being done to widen the extension bridge, and if there is any alternative fixes planned if the widening project is not approved.
 - *Kevin Force responded verbally* that as this is a NJTA (New Jersey Turnpike Authority) project, Hudson County cannot speak to the latest updated. He added that aside from the upgrades to the interchange done a few years ago, he not aware of specific recommendations. The County has identified through this Truck Study that there is new development coming and understands that this is a long-term issue to manage. The County will continue to investigate potential recommendations
 - *Ken Hausman added verbally* that GCT is the largest generator of trucks in Hudson County, and that most trucks are using the turnpike extension to travel west. He added that NJTA has committed to a planning study to examine widening options; NJTA is looking to move forward in preliminary design soon, and will be maintaining the existing roadway until the widening project begins.
- **Additional verbal questions re GCT from Mike Verney:** Asked if the project team could share their findings of the numbers of trucks from GCT traveling onto the turnpike so that they can cross reference this information. As a follow-up question, he asked what the action items will there after the study ends.
 - *First question:* Ken Hausman verbally responded that the team needs to get permission from the NJ Turnpike to share this data. Kevin Force added that he will reach out the NJTA to ask for permission to provide this data to GCT.
 - *Second question:* action items were noted in next steps part of the presentation.

Additional Chat/Verbal Comments and Discussion

- *Via chat: Mary Miraglia & Chuck Carol, Journal Square Community Association 6:44 PM:* I want to bring something to your attention. There is a new residential/retail building at the corner of St. Paul's Ave and John F. Kennedy Boulevard, and I understand this is under



county enforcement. Last week at the JCPD (Jersey City Police Department) North District meeting I asked the department to speak with the building about trucks double-parking on John F. Kennedy Boulevard right in front of this building. That is entirely unnecessary because there is space behind the building, on St. Paul's, for trucks to pull in. It is also dangerous and illegal. Unbelievably, the JCPD suggested I should go to the building and talk to them about this. Can the county step in since this is their enforcement?

- *Kevin Force responded verbally* that smaller trucks are supposed to be used for local streets, particularly in the outskirts of Jersey City.
- *Via chat: Mary Miraglia & Chuck Carol 6:52 PM:* If that's how it happens, it's not happening here. We have large truck traffic on Newark Ave., Tonnelle, and St. Paul's regularly. We have large trucks cutting through from Charlotte Circle to Newark / US Route 1&9 via Tonnelle / Dey St. / Senate Place / Newark Ave. They're dangerous and reckless.
 - *Via chat: Kevin Force 6:55 PM:* Thank you for bringing up about the new residential building on John F. Kennedy Boulevard and St. Paul's Ave. We will look into it and work with enforcement as necessary. Thank you for bringing the specific Jersey City cut-through locations to our attention. We will look into it further and work to address any issues.
- *Via chat: Mary Miraglia & Chuck Carol 6:58 PM:* KF, may I suggest appropriate signate? I don't think there is any, since it wasn't previously needed. "No Stopping or Standing, Strictly Enforced" etc. And thank you.
 - *Via chat: Kevin Force 7:00 PM:* Thank you! We'll look into the need for additional signage. I will just say that signage on its own is often not enough. Signage, regulations, and enforcement must all be aligned.
- *Via chat: Mary Miraglia & Chuck Carol 7:01 PM:* Can we work to divert trucks at Charlotte Circle westbound, and NOT bring them through Tonnelle / St. Paul's unless they are local?

Also, there is TERRIBLE double parking on John F. Kennedy Boulevard between Bergen Avenue and Tonnelle Avenue / John F. Kennedy Boulevard southbound, and there doesn't seem to be any enforcement there. Although it is mainly not trucks. Some trucks (both sides of street), but mainly cars.

There should be special very high fines for Amazon Prime because THEY DO NOT CARE! They stop anywhere.

 - *Via chat: Kevin Force 7:04 PM:* Thank you for bringing these specific areas to our attention.



- We have data on truck trips- local and long distance, and can look at locations where restrictions for large trucks may be beneficial
- Related to double parking- the curb management/loading zone strategies identified through this study will serve as a starting point for further consideration of using these strategies at business districts across the county to help alleviate some of these issues.
- *Via chat: Mary Miraglia & Chuck Carol 7:13 PM:* As I'm sure you're aware, the nature of JC [Jersey City] neighborhoods near highway access have changed drastically, and will continue to do so for some time. So diverting large trucks is very needed and should benefit all -- the people who live here as well as the truckers and their companies. I'm happy to know the county has plans to provide alternate truck routes.
 - *Via chat: Kevin Force 7:17 PM:* Through the study, we're looking at the designated truck routes, comparing it with where trucks are ACTUALLY going, and looking to make recommendations so that trucks use appropriate routes. While the County has jurisdiction over County roads, it will really need to be a coordinated partnership between municipal, county, and state. Our hope is that this study provides information and a starting point for further consideration.
- *Via chat: Mary Miraglia & Chuck Carol 7:19 PM:* The Journal Square Community Association will certainly be glad to partner with you in that regard. Traffic is a MAJOR concern here.
 - *Via chat: Kevin Force 7:19 PM:* Thank you!
- *Verbal comment from Edward Trochimczuk:* noted that he lives on St. Paul's Ave in Journal square. There is a boom in high rises and construction. There are many delivery trucks associated with all this new development that are using St. Paul's Ave, including large dump trucks and 18-wheelers delivering huge construction materials. This traffic begins at 4:00 am in the morning and goes on until 5:00 pm – 6:00 pm in the evening. Throughout the day, his house shakes, the windows shake, there are now cracks in wall. All of his neighbors along his block are all having the same experience. Asked if it is possible to IMMEDIATELY stop trucks going up and down St. Paul's Avenue
 - *Kevin Force responded verbally* that the County will investigate the truck volumes of this area and appreciated hearing about the on-the-ground experience, as data does not show trucks using St. Paul's Avenue that much off of US Route 1&9 and John F. Kennedy Boulevard. The County cannot provide an immediate solution, but they will bring this to municipal attention for enforcement and development of alternate routes.



- *Via chat: megan santosusso 7:34 PM:* Is there anything residents of Saint Paul's Avenue between Tonnelle Avenue and John F. Kennedy Boulevard can do to support efforts to remove large trucks (semi and flatbed) from our road?
- *Via chat: Mary Miraglia & Chuck Carol 7:39 PM:* St. Pauls is a major truck route going both east and west from Tonnele Avenue / Charlotte Circle. Many of these trucks should be diverted at the circle and sent westbound to come in on roads in the industrial area.
- *Via chat: megan santosusso 7:40 PM:* Edward is 100% correct. We have a school with pre-k on the corner of John F. Kennedy Boulevard and Saint Paul's Avenue. The bollards are all smashed from trucks driving on the sidewalk of John F. Kennedy Boulevard. Our houses are shaking and the trucks are very dangerous and speed/cannot stop for pedestrians.

I am truly shocked to learn this is a surprise to you all

How can we connect further

- Stephanie Brooks, FHI Studio, asked verbally if is it possible that the INRIX data is not showing this traffic because the construction is new?
- *Via chat: megan santosusso 7:40 PM:* It is not recent, we have been advocating for change since 2019
- *Via chat: Mary Miraglia & Chuck Carol 7:41 PM:* It's not recent, it's been ongoing. It was worse when the state was diverting traffic to St. Paul's Ave. under the rr tracks. But there have always been many big trucks here, they take out the traffic signal on a regular basis.
- *Via chat: megan santosusso 7:41 PM:* Thanks!
- *Via chat: Edward Trochimczuk 7:42 PM:* Yes! We have been fighting with the city about this
- *Via chat: megan santosusso 7:42 PM:* The city has been supportive but little change has happened to date
- Attendees were provided with both County Planning and Kevin Force's email address, along with a link to the project website.

Suggestions/Next Steps

- Next steps will be to incorporate all this public feedback into a Draft Study Report. A final Technical Advisory Committee (TAC) meeting will be held in April 2023, and the Final Study Report will be released in June 2023 and made available to the public.

HUDSON COUNTY TRUCKING STUDY

PUBLIC MEETING #2 SUMMARY



- Coordinate with the Journal Square Community Association in Jersey City. Suggest adding the email addresses below to the Hudson County project database to include them in project steps moving forward.
- Below is a follow-up email from public meeting attendee Megan Santususso:

From: Megan Santosusso m.santosusso@gmail.com

Sent: Wednesday, March 15, 2023 12:03 PM

To: Kevin Force kforce@hcnj.us; County Planning countyplanning@hcnj.us

Cc: George Brew gfb37@aol.com;

Sonja Dettori sonjadettori75@hotmail.com;

Letty Ferrando leticiaferrando@aol.com;

Lillian Chou lillian.chou@gmail.com;

Janet Lau kanecki@gmail.com;

Estee aptjosh@yahoo.com;

George Zalepa george.zalepa@gmail.com;

Jacob Letendre jacob_letendre@yahoo.com;

Edward Trochimczuk edt122345@gmail.com;

Robert Ferrando roberrando@gmail.com;

Sumit Galhotra SGalhotra213@gmail.com;

Annamarie Ferrando annamarieferrando@gmail.com;

Veronica Pringle vpringle2@comcast.net;

Jose Ferrando jaferrando50@yahoo.com;

rashan.casseus@gmail.com;

Gillian Erwin ge88@hotmail.com;

Scott Reiners scottreiners@gmail.com;

Lana Abraham ana.abraham@gmail.com;

Sebastian Murawski sebmur2712@gmail.com;

Ryan Steiner ryansteiner88@gmail.com;

Amanda Michelle Steiner amanda.poidvin@gmail.com;

yrendc@gmail.com;

Ting Zhang ting.zhang888@gmail.com;

Adam Cohen adam.cohen521@gmail.com

Subject: Saint Paul's Ave: Hudson County Trucking Study

Dear Kevin,

HUDSON COUNTY TRUCKING STUDY

PUBLIC MEETING #2 SUMMARY



I was encouraged to learn that Hudson County has identified Journal Square as a study area for truck traffic. I am concerned however to learn that Saint Paul's Avenue, particularly between Tonnelle Ave and John F. Kennedy Boulevard, is not included in the study to date.

I have cc'ed residents of Saint Paul's Avenue on this email as we are all experiencing significant truck related issues. We ask that the County survey the truck usage of Saint Paul's Avenue from Tonnelle Avenue and from John F. Kennedy Boulevard and incorporate that information into upcoming presentations and recommendations.

As you may know there is a significant industrial portion of Saint Paul's Ave further west in Jersey City and beyond. Trucks are meant to travel to/from this industrial area on Newark Ave which is the designated truck route in our area. Unfortunately a very large number of these trucks ignore designated routes and illegally travel through the residential portion of Saint Paul's Avenue.

We are a neighborhood of families with young children and senior citizens. Our area is host to churches and several schools. The high volume of illegal truck use on our road not only creates very dangerous conditions for other cars, pedestrians and bikers but it is also severely damaging our homes and creates air quality concerns.

Trucks of all sizes including 18 wheelers, construction vehicles/equipment, etc. speed up and down our road. They are not able to stop at crosswalks or yield to other vehicles and pedestrians. They are shaking our homes to the point where many of us have cracks in our ceilings, our stairs and in the foundations of our homes. We fear the worse will eventually happen. Our homes and road are not equipped to withstand this constant misuse.

I cannot count the number of times I have looked up the street to see a truck who has gotten stuck trying to turn off of John F. Kennedy Boulevard onto Saint Paul's Avenue. When this happens, the trucks are stuck on the sidewalk in front of PS 31, a school from pre-k children. They are stuck on the sidewalk due to the presence of metal bollards, which are crooked from year of impact. In 2011 a woman was killed by a truck in this location.

Thank you in advance for considering our request. We look forward to hearing from you.

Best,

Megan Santosusso

Appendix B

Task 2B: Data Collection

Appendix C

Task 3: Data Analysis