NJTPA
Connecting
Communities

NJTPA NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

APPENDIX A: Transit Needs

Future Transit Needs in the NJTPA Region

The following analysis of future transit needs was prepared in cooperation with NJ TRANSIT to inform the development of *Connecting Communities: The NJTPA's Long Range Transportation Plan*. It will guide the NJTPA's planning and capital programming activities over the coming decades.

A key consideration in projecting future funding needs is the assumption of a fully funded state of good repair and accessibility program for NJ TRANSIT's existing public transit system. Addressing ongoing and sustained needs related to rehabilitation and basic systems improvements must constantly progress to maintain a statewide public transit network that is responsive to customer needs.

With the focus on maintaining a state of good repair, proposed future expansion projects must be assessed through a series of physical/operational feasibility, environmental, economic, ridership, fiscal and financial analyses. Ongoing operating and maintenance costs associated with proposed projects are a critical component of analysis, as they have a direct impact on NJ TRANSIT's annual operating budget. Future investment needs under consideration for longer term capital funding are presented below.

Capacity Improvements and Transit Service Expansions

Additional Trans-Hudson Public Transit Capacity

The Gateway Program, being advanced in collaboration with Amtrak, NJ TRANSIT, the Port Authority of New York and New Jersey (Port Authority) and the Gateway Development Commission, is a program of capital investments focused on preserving and increasing rail capacity along a critical 10-mile stretch of the Northeast Corridor (NEC) between Newark Penn Station and New York Penn Station. The capital projects that make up the Gateway Program are in various stages of development. Some projects have either secured funding and await construction or are under construction, including the following:

- The Hudson Tunnel Project, expected to be completed in 2038, is adding a new two-track tunnel under the Hudson River, followed by rehabilitation of the existing 115-year-old, two-track tunnel.
- The Portal North Bridge Replacement, expected to be completed in 2027, is replacing a 115-year-old swing bridge, removing a chokepoint caused by the old bridge's frequently problem-plagued need to open to allow maritime traffic to pass underneath it.
- The nearby Sawtooth Bridge Replacement, which is in the pre-construction phase, with completion scheduled for 2032, will replace the 118-year-old bridge, ultimately adding two additional tracks, for a total of four, and increase maximum speeds.

Other capital projects are in less advanced stages of development, either in the design phase or seeking funding for construction, including the following:

- Penn Station New York Expansion, which will increase systemwide rail capacity through the addition of new tracks, platforms, railroad systems, passenger concourses and

connections, and support services.

- The Portal South Bridge, which will add a second two-track bridge to the south of the under-construction Portal North Bridge.
- The Bergen Loop and Secaucus Junction Expansion, which will facilitate direct service to Penn Station New York (a “one-seat ride”) for NJ TRANSIT’s Main, Bergen, and Pascack Valley line services and MTA’s Metro-North Port Jervis and Spring Valley lines.
- The Inner Storage Yard, which is required to accommodate the growth in trans-Hudson rail service afforded by the Gateway Program.

NJ TRANSIT has identified several supporting capital projects outside of the current Gateway Program that would fully enable the Program's intended service levels, including:

- Midline Loop, which would provide grade separation on the NEC near New Brunswick and allow trains to be turned without impacting operations.
- Hunter Flyover, another grade separation, will allow Raritan Valley Line (RVL) trains to access the NEC without impacting operations and enable Penn Station New York service in the morning peak.
- Lehigh Line Track Capacity Expansion, paired with the Hunter Flyover, will add capacity that will permit increased RVL service levels.
- Newark Penn Station modernization efforts will improve circulation, amenities, passenger capacity, platform capacity and overall station quality, while also bringing all station platforms and other station elements into a state of good repair
- Westbound Waterfront Connection will add operational flexibility, allowing trains originating from Hoboken Terminal to travel onto the NEC without creating conflicts to corridor operations.
- Newark Draw Bridge Replacement will rectify a chokepoint in the system by replacing an existing two-track open span bridge with a three-track fixed span bridge, connecting three-track territories on either side.
- Kearny Interlocking Modification will greatly improve rail operations adjacent to the NEC by enabling bi-directional movements of trains at a high traffic interlocking via grade separation.
- Laurel Flyover will remove a conflicting point for bi-directional train movements where the Main Line and Bergen County Line merge near Secaucus Junction.
- RVL 3rd Track will add a main track on the RVL between Cranford and Plainfield, with a potential extension farther west to Bridgewater, enabling express service on the line and adding capacity for additional train service.

The Port Authority has identified potential capital projects to address projected trans-Hudson transit capacity needs. The agency has developed a plan for construction of a new Port Authority Midtown Bus Terminal, (PABT) which will add capacity and meet projected 2040-

2050 commuter growth with improvements for the regional transportation network. During the almost 10-year construction phase for the new PABT, some buses may use the George Washington Bridge Bus Terminal or will depart from a new bus storage area in Midtown Manhattan. The Port Authority has also identified capital investments needed for the PATH system to keep pace with future growth, including upgrading power systems, signal systems and car maintenance facilities, as well as expansion of existing transit stations.

Regional Rail System Core Capacity

Beginning during the post-War period and continuing through the early 1980's, decisions were made to reduce railroad track miles within the state and region (characterized by the cessation of passenger and/or freight rail service on entire lines, portions of lines, or through reducing the number of tracks on a line). These decisions resulted from modal competition, reduced demand and the economic challenges associated with maintaining rail operations and keeping additional track miles in operation.

In 1979, NJ TRANSIT was created to assume responsibility for many of the state's transit services, including commuter rail services operated by Conrail, which were inherited from several bankrupt, private rail carriers that were previously absorbed into Conrail. In 1983, NJ TRANSIT assumed direct operation of the train services on its lines. The agency began investing incrementally to rehabilitate tracks, facilities and equipment, improve rail services and better integrate them to increase mobility and address growing demand. These efforts spurred significant rail ridership growth during the ensuing decades.

Forecasts anticipate continued growth in demand and indicate that existing train volumes will need to be supplemented through the selective (re)introduction of capacity in the rail system to enable increased rail service. Investments are being made in projects that address this future need, such as the Delco Lead/County Yard on the NEC, which will accommodate the increased rail service projected to be generated by Gateway and trans-Hudson investments.

The Hunter Flyover, noted above, is among the new connections needed. It would enable eastbound RVL trains to travel from the Lehigh Line to eastbound NEC tracks without crossing all NEC tracks at-grade, disrupting train operations. The current eastbound train movement at-grade slows services and reduces NEC capacity south of Newark Penn Station. As discussed in the 2024 State Rail Plan, the project has completed concept development. Other projects, such as the Rail Fleet Replacement Program, will allow NJ TRANSIT to add capacity for projected growth in rail ridership.

There are several rail lines where additional main track capacity will be needed to accommodate expected growth in train service. Among these are portions of the Bergen County, Main and Pascack Valley lines; Morristown Line, and RVL. There are also bridges on the rail system that limit capacity and require investment, including the single-track Main Line bridge over the Hackensack River between Lyndhurst and Secaucus, as well as the Morris and Essex Line bridge over the Passaic River.

There is also a need to add main track capacity to a six-mile stretch of the Lehigh Line, a critical rail line owned by Conrail Shared Assets (in turn owned and controlled by CSX and Norfolk Southern). This segment supports RVL service between Cranford and the NEC in Newark. The two existing tracks are shared by NJ TRANSIT's trains and freight trains operated

by the owner freight railroads. There are mounting challenges associated with increasing (or introducing) passenger rail service on lines that are also used for intense freight operations. The Lehigh 3rd and 4th tracks project is a potential solution that would provide more reliable service and greater RVL capacity. Conceptual design alternatives have been developed for this project.

Additional Regional Rail Supporting Facilities

As NJ TRANSIT adds train service, it will need more yard space for train storage and maintenance facilities to handle a larger fleet of rail passenger cars and locomotives. Existing yard facilities will be expanded where possible, but new facilities will be required. As such, yard expansion will be closely linked to future rail service expansions.

Regional Rail Extensions of Service

There are several projects that have worked their way through the transportation and environmental planning process, but few have advanced beyond that stage. Some continue to require environmental review by the federal government. Many of these projects require the identification of a funding source, and some are also dependent on other investments that address rail system capacity needs before they can be implemented. Rail extension projects in the region include:

- Andover Extension – NJ TRANSIT has commenced construction of a roughly six-mile extension of the Morristown Line from Port Morris to Andover in Sussex County along the Lackawanna Cut-Off. The extension will include a new commuter rail station at the Andover terminus.
- West Trenton Line – Conceptual design, cost and ridership analysis shows that while there are benefits to the West Trenton Rail Line project, there are also significant associated cost and physical challenges. Most critically, improvements along the RVL (to which this project would connect) and the Lehigh Line are essential precursor activities.

Station Upgrades and Improvements

About 70 of NJ TRANSIT's 154 stations are fully accessible under current Americans with Disabilities Act guidelines. Many rail stations only have low-level platforms, which require people to step up or down when boarding or exiting trains. As resources allow, NJ TRANSIT continues to advance new rail station accessibility projects. It is expected that over time, the remaining non-accessible stations will be improved with high-level platforms and other accessibility improvements where feasible.

Hoboken Terminal, opened in 1907, is an important but challenging facility because of its historic designation, age, condition and resiliency needs. Given the station's role in facilitating trans-Hudson travel, NJ TRANSIT is advancing the Hoboken Terminal and Yard Resilient Redevelopment Program to address its many needs.

Newark Penn Station, discussed above, opened in 1935 and requires extensive rebuilding and improvement to maintain and expand its functionality and capacity to handle projected larger volumes of passengers transferring between modes and accessing downtown Newark.

Bus Rapid Transit and Bus System Improvements

To make bus service more competitive with car use, and as part of a continuing effort to better connect where people live with where they wish to travel, a number of bus rapid transit (BRT) and bus improvement studies have been undertaken and will require capital and operating funding to advance to construction and operation.

The following projects are being progressed, which should result in future improved and expanded bus service within the state and interstate to Midtown Manhattan:

- Route 9 Corridor Bus Improvements – Several studies have been advanced in this corridor with the goal of improving travel in one of the state's most substantial bus corridors. Proposed projects include improving access from Route 9 to the Garden State Parkway through elimination of the current bottleneck; queue jumps and transit signal prioritization at select intersections, and extension of bus shoulder running.
- Union County Transitway – Using a former railroad right of way from Cranford east into Elizabeth as the backbone, the intention is to provide a linear east-west bus transit corridor with provision for bicycle and pedestrian paths mingled with transit-oriented development at appropriate locations. The corridor is centered on the fully renovated Elizabeth Rail Station.
- Greater Newark – The NewBus Newark study marked the first initiative in several decades to restructure the local intrastate bus network in the Newark area. It analyzed the performance of 38 local routes in and around Newark, examining factors such as where people live and work and how they traveled. The findings from this analysis, combined with community input, were used to design a new network that addresses contemporary mobility needs. Recommendations are being implemented as resources (operators, equipment and budget) allow.
- Hudson County – Building on themes from earlier studies, the NewBus Hudson study is assessing performance of 32 bus routes serving the region as well as emerging demographic trends, travel patterns and development. The core of this local bus network serves Jersey City and surrounding communities in Hudson County. In addition, NJ TRANSIT has stepped in to maintain local bus service in the wake of private carriers ceasing operations.
- Bergen County – Development densities in this area vary, and linking residential, health, business and retail centers of activity will require an improved bus system that will also offer as many BRT attributes as are feasible. NJ TRANSIT and Bergen County partnered on an extensive analysis to develop initial routes for a BRT system that requires funding for implementation. The potential addition of new bus services in this area will also necessitate provision of additional bus servicing and storage, most likely in the form of a facility such as the Northern Bus Garage.
- Paterson-Newark Transitway – This project would establish new transit service between Paterson and Newark, potentially on an abandoned freight rail right-of-way. The NJTPA-funded Paterson-Newark Transit Market Study, completed in 2020 in collaboration with Passaic County, Essex County and NJ TRANSIT, demonstrated the potential demand

for new transit service via bus rapid transit or light rail along this north-south corridor, which could significantly shift auto trips to transit. In addition, NJ TRANSIT is seeking to advance a study of the bus network between Paterson and Passaic.

- The Meadowlands Transitway, which seeks to provide new service between Secaucus and the Meadowlands Sports and Entertainment Complex, with potential extensions to Montclair and Jersey City via abandoned rail corridors and the Bergen Arches.
- Potential improvements to bus services connecting with Hudson River ferry services.

Trans-Hudson Commuter Ferry System

The trans-Hudson ferry system, especially those services using Hoboken Terminal and Weehawken Ferry Terminal and South Amboy, plays an important role in accommodating the significant demand for transportation from New Jersey to Manhattan. Capital investment by the public sector in improvements to terminals, vessels and supporting facilities has been ongoing. Examples include Hoboken Terminal and Port Imperial in Weehawken. With proper landside planning and connectivity to distribution networks on both sides of the Hudson River, ferries could play an increased role in trans-Hudson travel, especially given existing constraints on both the trans-Hudson rail and bus networks. Ferries have proven to be key in contingency situations, especially when other trans-Hudson transportation modes are interrupted.

The NJ TRANSIT *Connecting Services to Ferry Study* (2020) offers several key recommendations aimed at enhancing the role of ferry services in trans-Hudson travel. The study found that trans-Hudson mobility options could be improved with the addition or modification of connecting bus services and improved intermodal service coordination.

Hudson Bergen Light Rail Core System Capacity

The Hudson Bergen Light Rail (HBLR) alignment north of Liberty State Park to Hoboken Terminal uses local roads and weaves between streets and developments, limiting the number of trains that can be operated. NJ TRANSIT, working within the constraints of the existing alignment, has introduced higher-capacity light rail cars to accommodate growing ridership, increasing from 68 to just over 100 seats per car and adding significant new room for standing riders. HBLR ridership has continued to grow, exceeding pre-Covid levels, and other capacity improvements, including the Hoboken Wye Bypass, will be needed. NJ TRANSIT is exploring options to add capacity.

Light Rail System Extensions & Improvements

Northern Branch – This project will extend the HBLR system from its terminus in Hudson County through four communities to Englewood in Bergen County, to improve regional mobility, mitigate traffic congestion and foster economic investment. The reintroduction of passenger rail in eastern Bergen County will mark a significant step forward for congestion relief by providing a mass transit alternative, lessening the burden of daily commuter traffic on local and county roads. Eastern Bergen County residents are significantly oriented to jobs in New York City and, to a lesser extent, the Hudson County waterfront. The 8-mile corridor would use the existing Northern Branch right of way.

Route 440 Extension – This project will extend the HBLR system's Westside Branch in Jersey

City less than a mile across NJ State Highway 440 to serve a large-scale, mixed-use brownfield redevelopment project. Project design is advancing following completion of the NEPA process.

Passaic-Bergen-Hudson Service – Using the New York, Susquehanna & Western Railway corridor, this project would provide transit service from Hawthorne and Paterson in Passaic County, through Hackensack in Bergen County, to Tonnelle Avenue in Hudson County, connecting to the HBLR system. This is envisioned initially as a BRT service, transitioning in the long term to light rail.

Sustaining Capital Investments

Access Link

NJ TRANSIT uses vans, small buses and cars to best serve those customers with disabilities who cannot use fixed route services, providing service that operates within the same service areas, to comply with federal law mandating provision of mobility to these customers. Vehicles, including fleet modernization and electrification, as well as technology for communications, routing, tracking and managing these services together constitute ongoing needs which must be addressed.

Community Mobility

NJ TRANSIT administers tens of millions of dollars of federal and state funds that are provided to counties, municipalities and non-profit organizations to enable them to provide transit service to targeted populations, mostly elderly and disabled people. A good portion of these funds are used, as in the case above, to purchase vehicles and technology to support the operation of these services.

Technology

The NJ TRANSIT 2022 Capital Plan also outlines at least four areas that will require funding for technology upgrades in the years ahead:

- Customer Information – Technology to improve the collection and distribution of information, such as NJ TRANSIT's smart phone application.
- Operations – Technology that tracks, monitors and manages transit operations, such as equipment on buses to provide location and passenger boarding information.
- Vehicle and Facility Operations – Examples include technology to improve fuel efficiency and the use of solar power.
- Safety and Security – NJ TRANSIT uses video technologies for safety and security and seeks to increase their deployment.

Safety

Safety of customers, employees and assets is of utmost importance to NJ TRANSIT. The Office of System Safety (OSS) was established to implement common safety principles and practices agencywide. The OSS promotes existing and new programs to ensure the continued health and safety of commuters, employees, and business partners. The goal of the OSS is to

achieve the highest practicable level of safety for all transit modes.

Additional Bus Supporting Facilities

NJ TRANSIT's bus garages are at capacity in the inner ring counties where most services are centered. As a result, various improvement projects for such facilities as the Northern Bus Garage and the Union City Bus Garage, are necessary steps in improving the overall ability to tackle additional demand and the associated maintenance and storage requirements that added bus services would entail. These projects will benefit both the local and trans-Hudson travel markets.

Multimodal Facilities

To offer more flexibility for travelers and allow for more efficient use of available public transit capacity, NJ TRANSIT is exploring ways to increase the number of locations from which people can access more than one public transit mode. In some cases, this will allow greater service frequency for transit users, improve the connectivity between transit modes, or extend the reach of transit to areas where public transit has not had a strong presence and a sufficient demand for it may exist.

NJ TRANSIT is also actively pursuing opportunities to create improved multimodal functionality at existing key transit hubs, as exemplified by the intermodal center at Frank R. Lautenberg Secaucus Junction station. This facility has greatly improved the flow of buses and other high-occupancy vehicles serving the facility, while also smoothing pick-up and drop-off operations for private vehicles.

NJ TRANSIT has constructed an interim bus terminal near Hoboken Terminal, a key step in the Hoboken Connect mixed-use development project. The interim facility will ensure uninterrupted bus service while the permanent terminal undergoes rehabilitation. Part of broader infrastructure improvements at Hoboken Terminal, the project includes restoring the historic ferry terminal's second floor for events, enhancing flood resilience in Warrington Plaza, and improving streetscapes for better pedestrian and bicycle access. The interim bus terminal has eight bays for bus routes, temporary shelters, pathways, and passenger areas, reflecting a commitment to transforming Hoboken into a more connected and accessible waterfront hub.

Projects such as the Passaic Bus Terminal Program, currently in the FY 2024 – 2025 S&D Program, will allow NJ TRANSIT to renovate facilities to keep up with existing demand and accommodate future increases in ridership and multimodal use, while increasing safety, comfort, access, and customer experience.

Access to Public Transit

NJ TRANSIT works with NJDOT, other levels of government and the private sector to enhance and improve access to locations where people use NJ TRANSIT's services. These projects include pedestrian and bicycle access, as well as park-and-ride facilities. NJ TRANSIT will continue to emphasize a multimodal approach to access, seeking to address the needs of cyclists and pedestrians.

Rail, Bus and Light Rail Equipment

NJ TRANSIT maintains a large fleet of buses, railroad coaches and locomotives and light rail vehicles. The fleet is maintained in a state of good repair, with fleet planning aimed at vehicle replacement and modernization. NJ TRANSIT budgets funds for ongoing replacement of equipment as it approaches the end of its useful life. This approach also permits NJ TRANSIT to procure newer propulsion and fuel systems for vehicles and railroad equipment as they are proven to be feasible, reliable, and cost effective. This maintenance strategy creates a sustainable financial replacement program and is expected to continue.

Support Equipment

To operate a statewide system of the scale provided in New Jersey, many support vehicles are required, including specialized trucks, vans and automobiles for maintenance and operations staff and police. As with its bus and rail fleet, NJ TRANSIT budgets for the ongoing replacement of this equipment.

The Port Authority's Interstate Transportation Role

The Port Authority of New York and New Jersey plays an essential role in sustaining and improving trans-Hudson transportation services based on its responsibilities under the bistate compact and each state's enabling legislation. Though it is not a designated recipient of federal transit funds, the Port Authority's surface transportation facilities provide critical links for moving transit users and vehicles across the region in an integrated, multimodal network. As appropriate, individual Port Authority interstate network enhancement projects are incorporated into the NJTPA and NYMTC plans. The Port Authority's planning areas and investments include the following:

Trans-Hudson Bus System:

As the nation's largest and the world's busiest bus terminal, the Port Authority's Midtown Bus Terminal is a primary gateway for regional travel. It plays a critical role enabling efficient trans-Hudson bus service for NJ TRANSIT and numerous private commuter and intercity bus operators. The $10 billion project to build a new, world-class transportation hub in Midtown Manhattan to replace the existing, outdated 74-year-old structure is one of the most significant, generational projects in the bistate region. It will deliver to commuters and residents a state-of-the-art, reliable and efficient connection among communities. When complete, the project will include a new 2 million square-foot main terminal, a separate storage and staging building and new ramps leading directly into and out of the Lincoln Tunnel.

The project's first phase — the temporary terminal, new ramps and Dyer Avenue deck-overs — is expected to be fully completed in 2029. The new main terminal is expected to be completed in 2032. The new terminal will add capacity and meet projected 2040-2050 commuter growth with improvements for the regional transportation network:

- Added capacity to allow curbside inter-city buses that pick up and drop off on city streets surrounding the facility to move their operations inside the bus terminal.
- The new storage and staging facility will consolidate storage and staging functions in a single facility, reducing congestion in and out of the Lincoln Tunnel.
- The new ramp structure will provide a direct connection to the Lincoln Tunnel that adds queue space and bypass capability, thereby reducing delays in bus service.
- The Port Authority has been piloting vehicle technologies to improve the operation of the Exclusive Bus Lane at the Lincoln Tunnel and partnered with other agencies on an Integrated Corridor Management concept of operations for the Route 495 corridor. The Port Authority will continue to seek out opportunities to improve bus operations between New York and New Jersey in partnership with NJ TRANSIT, NJDOT, and others.

PATH System:

The PATH system plays a linchpin role in the regional transit network, linking NJ TRANSIT hubs in New Jersey with the World Trade Center and Herald Square and New York City Transit subways in Manhattan. Through the PATH Forward Program, the Port Authority is

completing a series of projects including repairing and replacing track; modernizing bridges, railcars and other critical infrastructure; and rehabilitating four Hudson County stations, Hoboken, Grove Street, Newport, and Exchange Place. The goal is to enhance system resilience and efficiency, reducing delays and ensuring smoother travel for thousands of daily riders.

Beyond this system rehabilitation and modernization, planning efforts include studies for upgrading power and signal systems, infrastructure requirements to increase reliability, service frequency and operational flexibility, upgrades for car maintenance facilities, and a potential redundant site for the PATH train control center.

Communities around PATH stations are experiencing significant growth. Station expansion projects will be needed to keep pace with neighborhood growth, especially with transit-oriented development with reduced parking requirements clustering around the stations.

Newark Airport Station Access:

The Port Authority is proceeding with the Newark Airport Station Access Project at the Northeast Corridor rail station at Newark Liberty International Airport. The project will leverage existing Amtrak, NJ TRANSIT and AirTrain Newark rail service in a cost-effective way to improve access, mobility and regional connectivity for the neighboring airport communities of Newark and Elizabeth. The plan will also advance goals to support safe and efficient access to the existing transit services for pedestrians and cyclists, as well as via personal vehicles, public buses, shuttles, for-hire vehicles and taxis. The project will also provide ease of connection for residents. The project includes provisions for a possible future extension of the PATH system to the station.