

TRANSIT APPENDIX

Contains:

- Future NJ TRANSIT Needs
- The Port Authority's Interstate Transportation Role

Draft: Future Transit Needs in the NJTPA Region

The following analysis of future transit needs was prepared by NJ TRANSIT to inform the development of Plan 2045: Connecting North Jersey. It will guide the NJTPA's planning and capital programming activities over the next three decades.

The foremost concern in projecting future funding needs is predicated on a fully funded state of good repair program for NJ TRANSIT's existing public transit system. Addressing ongoing and sustained needs related to rehabilitation and basic systems improvements must also constantly progress in order to maintain a statewide public transit network that is responsive to customer needs.

With the need to address a focus on state of good repair as a prerequisite, proposed future expansion projects need to be assessed through a series of physical/operational feasibility, environmental, economic and 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. Among the future investment needs being considered for longer term capital funding are the following:

Capacity Improvements and Transit Service Expansions

Additional Trans-Hudson Public Transit Capacity

Various studies are underway to examine ways to increase trans-Hudson bus, rail and ferry capacities. Among the major efforts is the Gateway Program, led by Amtrak, focused on preserving and increasing rail capacity between New Jersey and Manhattan. On a broader level, the Federal Railroad Administration is managing the NEC FUTURE effort examining the future needs of the entire Northeast Corridor from Washington, D.C. to Boston. The Port Authority is also examining the capacity of the bus system using the Route 495 Exclusive Bus Lane and the Lincoln Tunnel, and is engaged in an assessment of options to replace the Port Authority Bus Terminal. Other planning efforts are focused on the PATH system and ferries. Except for PATH, which has funding to expand its trans-Hudson capacity through operational improvements, the other proposed transit mode projects are still being progressed through their transportation and environmental planning phases.

The Hudson Tunnel, and the Portal North Bridge projects both represent early steps towards realization of increased trans-Hudson rail capacity, and have secured some funding but are not fully funded. In order for these and many other projects to move

forward a workable fair partnership of the right stakeholders will be required to fund and advance the implementation of one or more projects over the time period between now and 2045.

Regional Rail System Core Capacity

Beginning during the post-War period and continuing through the early 1980's, decisions were made to reduce the number of railroad track miles within the state and the region (characterized by the cessation of passenger rail service on entire lines, portions of lines, or through the reduction in the number of tracks on a line), as a result of insufficient demand and the economic challenges associated with keeping additional track miles in operation.

NJ TRANSIT was created to assume responsibility for operating lines that were previously owned by individual private interests, who had little incentive to invest in passenger services. NJ TRANSIT made investments incrementally to add in new tracks, increase and extend rail services, make new connections and provide greater service options to address demand.

Future 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 core rail system to enable increased levels of rail service. Investments now being made in projects such as County Yard on the Northeast Corridor and the pocket track in Summit on the Morris & Essex Line are examples of what will be needed as rail service is increased.

The Hunter Flyover is among the new connections needed. It would enable eastbound Raritan Valley trains to travel from the Lehigh Line to the Northeast Corridor eastbound tracks without crossing at-grade in front of other westbound trains. The current eastbound train movement at-grade slows train services and reduces the Northeast Corridor's capacity south of Newark Penn Station. Amtrak's plans for more intercity and faster train services require the elimination of this at-grade crossing. NJ TRANSIT also needs to add trains on the Northeast Corridor to accommodate the projected growth in ridership on that line.

There are a number of rail lines where additional parallel tracks will be needed to accommodate expected additions to train service. Among these lines are portions of the Bergen County, Main and Pascack Valley Lines; Morris & Essex Line, and Raritan Valley Line. There are also bridges on the rail system that limit capacity, including the single-track Main Line bridge over the Hackensack River between Lyndhurst and Secaucus, where consideration for adding volume will be necessary. The Morris and

Essex Line bridge over the Passaic River needs to be examined for similar reasons. Replacement of the Raritan River Bridge on the North Jersey Coast Line is advancing following NJ TRANSIT's successful application for Competitive Resilience funds from the Federal Transit Administration. This bridge supports commuter rail service as well as rail freight service, providing freight train access to the Jamesburg Branch.

There is a need to add additional main track capacity to a six-mile stretch of the Lehigh Line — a critical rail line owned by Conrail, CSX and Norfolk Southern — upon which NJ TRANSIT operates the Raritan Valley Line service between Cranford and the Northeast Corridor in Newark. The two existing tracks are shared by NJ TRANSIT's trains and a significantly large number of freight trains operated by the three freight railroads own the line. There are mounting challenges associated with increasing (or introducing) passenger rail service on lines that are also used for intense freight operations, as freight operators' requirements have increased and federally-mandated safety measures have added significant cost and complexity to such projects.

Regional Rail Extensions of Service

There are a number of projects that have started to work their way through the transportation and environmental planning process but have not yet been implemented. Many of these projects are dependent on increased capacity through the core of the system, as discussed above, before they can be implemented. They remain on the list of candidate future projects and it is likely that some will progress into implementation. These projects include:

- Monmouth-Ocean-Middlesex Rail Line
- West Trenton Rail Line
- Extension of Rail Service on the Raritan Valley Line
- Extension of Rail Service to Flemington
- Bergen-Passaic Rail Service on NYS&W

Except for the proposed new rail service on the NYS&W Railroad, the four other proposed services will require the addition of new capacity on the Northeast Corridor to Penn Station New York. Both Amtrak and the Federal Railroad Administration are conducting analyses of the future demand for rail service, its capacity and needed improvements for this important major rail line, which feeds both Newark Penn Station and New York Penn Station.

NJ TRANSIT is implementing the extension of the Lackawanna Cut-Off from Port Morris to Andover in Sussex County, a distance of about 6 miles. NJ TRANSIT is not planning to fund any extension further westward, since the majority of the projected riders would

be residents of Pennsylvania, and that service would only be operationally feasible if it were extended into Pennsylvania. If the state or local governments of Pennsylvania come forward with the necessary additional capital funding for both the extension and the operating cost not covered by fares, NJ TRANSIT will cooperate with them accordingly.

Bus Rapid Transit and Bus System Improvements

To offer a more competitive bus service compared to using an automobile 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 and continue being progressed to completion, 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 Use of Shoulders by Buses – This project will extend the existing use of the Route 9 shoulders by buses in Old Bridge southward towards Lakewood. The shoulders are used by the buses when the highway becomes congested in peak weekday travel periods. Other critical improvements in this corridor include improved access from Route 9 to the Garden State Parkway through the elimination of the current bottleneck, as well as a combination of queue jumps and Transit Signal Prioritization at select intersections along the Route 9 corridor.
- 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 a new station on the Northeast Corridor in downtown Elizabeth which is being funded as a separate capital project in NJ TRANSIT's upcoming 5-year capital program.
- Greater Newark – Utilizing two earlier bus improvements, the Go 25 and Go 28, which initiated NJ TRANSIT's interest in advancing incrementally into bus rapid transit services, a study of the bus system centered on downtown Newark and radiating outward into nearby communities and counties was conducted showing there were five major bus corridors which warranted improvements offering BRT like services.
- Jersey City – There is an extensive bus system in Jersey City, extending through Bayonne, serving densely developed areas with an intensely used street system, where there is an opportunity to make incremental improvements to the bus services so they offer improved performance.
- Bergen County –The development densities in this area vary, and linking residential, health, business and retail centers of activity will require an improved

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bus system that will also offer as many BRT attributes as are feasible. NJ TRANSIT and the County of Bergen partnered on an extensive analysis of various route options to implement the initial routes for a BRT system. The effort requires funding for implementation. The potential addition of new bus services in this region will also necessitate provision of additional bus servicing and storage, most likely in the form of a new bus garage to serve the needs of the region.

- Route 1 BRT – This project would be built in stages extending from Hamilton, with connections to Trenton, northeast along Route 1 to New Brunswick. This system of interconnected bus routes would offer improved connectivity to and between the four train stations along the Northeast Corridor, and the residential, retail and commercial developments contained within this entire corridor. This system would be predicated on increased transit-supportive development patterns.
- Passaic County – Particularly centered on Paterson, Clifton and Passaic but extending to other portions of the county and beyond, there is an opportunity to improve transit services that traverse this area. NJ TRANSIT is partnering with the City of Passaic and Passaic County to implement, through NJ TRANSIT's successful application for competitive FTA Bus Livability funds, and Passaic County's request to reallocate federal earmark funds, a new bus Terminal in downtown Passaic.
- Other – While the more densely developed inner counties offer more opportunities because of greater ridership potential to offer improved bus services offering BRT attributes, there are other individual corridors which may offer future opportunities for supporting improved bus services.

Trans-Hudson Commuter Ferry System

The trans-Hudson ferry system, especially those services using Hoboken Terminal and Weehawken Ferry Terminal, plays an important role in accommodating current and future transportation from New Jersey to Manhattan. Capital investment by the public sector in improvements to terminals, vessels and supporting facilities is anticipated. 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 commute, especially in the context of existing constraints on both the trans-Hudson rail and bus networks. Ferries have proven to be key in contingency situations, which limit normal trans-Hudson transportation system capacities.

Hudson Bergen Light Rail Core System Capacity

The Hudson Bergen Light Rail 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. Growing ridership has required that NJ

TRANSIT, working within the constraints of the existing alignment, develop higher-capacity light rail cars to accommodate additional passengers, increasing from 68 to just over 100 seats per car and adding significant new room for standing riders. NJ TRANSIT has implemented this interim measure to accommodate growth in demand for some number of years, however, beyond 2020, it is likely that capacity issues (both in terms of the number of trains that can be operated and their length and passenger capacity) will require further action.

Light Rail System Extensions & Improvements

Northern Branch – This project extends the Hudson Bergen Light Rail system from its terminus in North Bergen in Hudson County through four communities into Englewood in Bergen County. The Northern Branch Rail Service project will reintroduce rail service between Englewood and North Bergen 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 CSX Northern Branch freight corridor.

Route 440 Extension – This project extends the Hudson Bergen Light Rail 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. An Alternatives Analysis was completed in compliance with federal regulations and guidelines in order to select a Locally Preferred Alternative for advancement through full environmental screening and the federal funding process. During the process, an Environmental Assessment document and a Finding of No Significant Impact (FONSI) were secured from USDOT.

Sustaining Capital Investments

Access Link

To best serve those customers with disabilities and cannot use NJ TRANSIT's fixed route services for a number of reasons, NJ TRANSIT operates a customized service using vans, small buses and cars, which functions within the fixed route service areas to comply with federal law to provide mobility to these customers. Vehicles as well as

technology for communications, routing, tracking and managing these services is an ongoing capital need 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 serve targeted populations mostly of 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

There are 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 TRANSITS smart phone application.
- Operations — Technology that tracks, monitors and manages transit operations, such as tracking 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 is active in using video technologies for safety and security.

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 across the business lines. The OSS promotes existing and new programs to ensure the continued health and safety of our commuters, employees and business partners. The goal of the OSS is to achieve the highest practicable level of safety for all transit modes.

Additional Regional Rail Supporting Facilities

As NJ TRANSIT adds train service it will need to expand yard space to store trains and maintenance facilities to handle a larger fleet of rail passenger cars and locomotives. Some of these additional facilities will be at existing rail yards but some added facilities

will require new locations. The exact needs will depend on the future rail service plan, maintenance practices and other factors that cannot yet be determined until other decisions about train service and capacity are made.

Station Upgrades and Improvements

In 1992 NJ TRANSIT completed an Accessibility Plan for Commuter Rail and Newark City Subway, which identified 35 “key stations” that would have priority when bringing the system into compliance. All station upgrade work proposed in the 1992 plan is complete. About 70 of NJ TRANSIT’s 154 stations are fully accessible under current Americans with Disabilities Act guidelines. A significant number of stations only have low level platforms. These platforms require people to step up or down when boarding or exiting trains. It is planned that over time, the remaining low level platforms should be replaced with high level platforms where feasible.

Hoboken Terminal, opened in 1907, continues to be a challenge because of its historic designation, age, condition and resiliency needs. Given this facility’s importance in facilitating trans-Hudson travel, it is essential that work be advanced to improve the functionality of the intermodal nature of the Terminal.

Newark Penn Station, opened in 1935, continues to require extensive rebuilding and improvements to maintain and expand its functionality and capacity to handle projected larger volumes of passengers transferring between modes and accessing downtown Newark. NJ TRANSIT has begun the work of rebuilding the platforms, recently completing platform “E” (the westernmost platform). Amtrak and NJ TRANSIT are partnering in a series of linked studies to determine short and longer term needs and establish a station-wide improvement program. The initial work efforts are focusing on internal pedestrian circulation and platform capacities.

Additional Bus Supporting Facilities

It is important to recognize that expansion of bus services and adding more buses to the fleet will require locating and funding additional bus garages and layover locations. NJ TRANSIT’s existing bus garages are filled to their practical capacity in the inner ring counties where most services are centered.

Additional Light Rail Supporting Facilities

According to current trends, NJ TRANSIT foresees the need for expansion of the existing maintenance and Light Rail storage facilities. This is viewed as a longer range need which cannot yet be predicted as to timing or scale of need.

To both offer more flexibility of choice 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 recently completed 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.

Access to Public Transit

NJ TRANSIT works with NJDOT, other levels of government and the private sector to enhance and improve access to the locations where people access 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, ensuring that cyclists and pedestrians are given appropriate consideration.

Rail, Bus and Light Rail Equipment

NJ TRANSIT maintains a large fleet of buses, railroad cars and locomotives and light rail vehicles. The fleet is in a state of good repair and meets FTA guidelines for useful equipment life. To continue in this pattern, NJ TRANSIT has budgeted funds to permit regular 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 into the future.

Support Equipment

To operate a statewide system of the scale being provided in New Jersey, a large number of support vehicles are required, including specialized trucks, vans and automobiles for maintenance and operations staff and police.

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 the responsibilities assigned under its statutes and charter. Though its surface transportation facilities are not included in the federal-aid system as defined for inclusion in the planning documents for NJTPA and the New York Metropolitan Planning Council (NYMTC), the Port Authority's surface-transportation facilities provide critical links for moving transit users and vehicles across the region in an integrated, multi-modal network. The agency's leadership approved a 2017-2026 capital program that includes both state-of-good-repair projects for existing facilities as well as initiatives that would expand the capacity and connectivity of regional transit services consistent with NJTPA's planning objectives and NJ TRANSIT's objectives. As appropriate, the Port Authority's interstate network enhancement projects are brought into the NJTPA and NYMTC plans. Focus areas for PANYNJ planning and investment include the following:

Trans-Hudson Bus System Core Capacity: The Port Authority Bus Terminal in Midtown Manhattan has reached the end of its useful life and must be replaced by 2030. It is not possible to renovate the existing facility, so an entirely new structure is required – either at the existing location or at another site nearby. The agency is initiating a formal planning process to assess options to replace the midtown Bus Terminal and accommodate growing demand. This will require expanded gate and bus circulation capacity within the terminal, bus staging and storage facilities, and strategies to increase the capacity of the bus system through the Route 495 corridor and the Lincoln Tunnel. The Port Authority anticipates working collaboratively with NJ Transit and other carriers to manage anticipated growth in interstate bus commutation demand before, during, and after development of a replacement Bus Terminal project.

PATH System Core Capacity: 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 NYC Transit subways in Manhattan. PATH is experiencing significant growth, especially on its line between Newark and Lower Manhattan. The Port Authority is making investments in new capacity to address this growth, including the implementation of Communications Based Train Control and the expansion of its fleet, which will allow it to increase the frequency of service. However, over the next decade, the rapid pace of development clustering around PATH stations is expected to overwhelm these capacity increases. Within the next decade, 12,000 new housing units could be built in close proximity to Jersey City's Grove Street and Journal Square stations in particular, and station expansion projects will soon be needed to keep pace with neighborhood growth. In many cases, parking requirements for new development projects in these station areas are being reduced based on the assumption that future tenants will rely on public transit.

In addition, the Port Authority has completed modernization of the George Washington Bridge Bus Station and undertaken extensive investments at its vehicular crossings. The 10-year capital plan also includes the proposed extension of the PATH system from its terminus at Newark Penn Station to a station parallel to the Northeast Corridor Rail Link Station at Newark Liberty

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International Airport. Subject to required planning and approvals, this investment would provide PATH access for commuters from the surrounding area and new transfer opportunities for bus and NJ TRANSIT rail commuters. The agency also continues to work with private ferry operators and with NJ TRANSIT to sustain viable trans-Hudson commuter ferry services.