



ENVIRONMENT



PLAN 2045

Connecting North Jersey

NJTPA REGIONAL TRANSPORTATION PLAN



SAFETY



ECONOMY



GREAT PLACES



TECHNOLOGY



GETTING AROUND

About the NJTPA

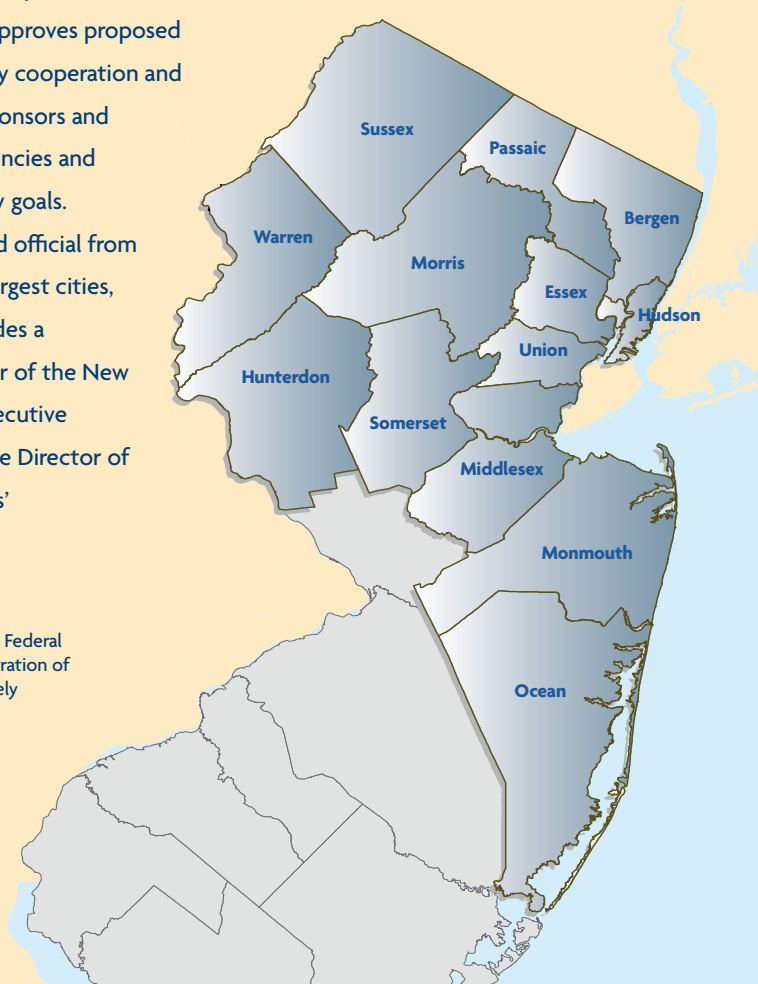
THE NORTH JERSEY TRANSPORTATION PLANNING

AUTHORITY (NJTPA) is the federally authorized Metropolitan Planning Organization (MPO) for the 13-county northern New Jersey region, home to more than 6.7 million people. The federal government requires each urbanized region of the country to establish an MPO to provide local guidance over the use of federal transportation funding and ensure it is spent cost-effectively to improve mobility, support economic progress and safeguard the environment.

The NJTPA oversees over \$2 billion in transportation investments each year. It analyzes transportation needs, approves proposed projects and provides a forum for interagency cooperation and public input into funding decisions. It also sponsors and conducts studies, assists county planning agencies and monitors compliance with national air quality goals.

The NJTPA Board consists of one elected official from each of the region's 13 counties and its two largest cities, Newark and Jersey City. The Board also includes a Governor's Representative, the Commissioner of the New Jersey Department of Transportation, the Executive Director of NJ TRANSIT, the Deputy Executive Director of the Port Authority of NY & NJ, and a Citizens' Representative appointed by the Governor.

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Executive Summary— Plan 2045: Connecting North Jersey

A future of dramatic changes in transportation is already on the horizon. Self-driving cars, truck platoons, delivery drones, 3D printing, adaptive traffic signals and vehicles coordinated over “wired” roads are just some of the transformative technologies now taking shape. Electric and alternate fuel vehicles, navigation apps and shared ride services like Uber and Lyft are already changing the face of mobility. Yet at the same time, extreme weather, rising sea levels, cyber incursions and other dangers threaten to disrupt daily life and travel.

Plan 2045: Connecting North Jersey considers how these and other “game changers” will shape transportation while offering a long-term vision to support the region’s economy and quality of life. Developed with extensive public and stakeholder input, the plan addresses infrastructure and transportation needs, offering a list of proposed projects. With this plan, the NJTPA looks to define a regional transportation vision that ultimately will shape a positive, productive future for North Jersey.



Competitive ●



Efficient ●



Livable ●



Resilient ●

NJTPA Goals

This plan fulfills the federal requirement that the NJTPA, as the Metropolitan Planning Organization for the 13-county North Jersey region, update its long-range Regional Transportation Plan (RTP) every four years so the region can continue to receive federal transportation funding. Only projects and needs identified in the long-range plan are eligible to make use of this funding.

The region faces many persistent transportation challenges: severe road congestion and unreliable travel times in many locations; the need to repair aging or outmoded facilities; a bus and rail transit network that serves many but has limited reach in some areas and is nearing capacity; a need for more facilities for safe walking and biking; and, perhaps most critically, the vital need for new rail tunnels under the Hudson River.

Plan 2045 focuses on meeting these challenges, preserving and enhancing the region's existing transportation assets—roads, bridges, rail lines, port facilities and more—and making cost-effective use of transportation funding. The plan also reflects input from citizens throughout North Jersey. During an extensive public engagement process, the NJTPA heard that people want walkable communities, more transit options, more reliable commute times, better access to jobs and other opportunities and more.

Preparation of this plan update, in addition to meeting federal priorities and guidance, followed seven goals for regional transportation (see below).

The seventh goal, concerning safety, was added to the plan to reflect the

- Protect and improve natural ecosystems, the built environment and quality of life.
- Provide affordable, accessible and dynamic transportation systems responsive to all current and future travelers.
- Retain and increase economic activity and competitiveness.
- Enhance system coordination, efficiency, overall safety and connectivity for people and goods across all modes of travel.
- Maintain a safe, secure and reliable transportation system in a state of good repair.
- Create great places through select transportation investments that support the coordination of land use with transportation systems.
- Improve overall system safety, reducing serious injuries and fatalities for all travelers on all modes.



critical importance of transportation safety and the NJTPA’s growing involvement in this area. This includes coordination of Street Smart NJ pedestrian safety campaigns in dozens of municipalities.

Together North Jersey

While mobility is a primary concern, Plan 2045 also considers how transportation investments can promote broader regional objectives. In particular, over the next 25 years, this plan seeks to make the region more **competitive**, **efficient**, **livable** and **resilient**, in keeping with the four themes that emerged from Together North Jersey, an extraordinary region-wide planning consortium launched in 2013. The NJTPA continues to play a leadership role in the organization and its task forces, along with Rutgers University and a wide range of partners.

Plan 2045 draws insights and guidance from the Together North Jersey Plan, finalized in 2015, and helps to implement its recommendations by shaping the transportation system in ways that will support communities, families and individuals across an array of issues, beyond just mobility. These include health and safety, natural systems, housing, education, workforce training, job access, arts, culture, business and economic development. Among the key approaches are land use strategies such as promoting development around rail stations or

**TNJ workshop
in Manalapan,
Monmouth County**



Competitive



Efficient



Livable



Resilient



**Branchbrook Park,
in Newark,
Essex County**

creating improved access to areas targeted for redevelopment. In keeping with these approaches, the concept of promoting “Great Places” was added to the seven NJTPA goals.

Public Outreach

Plan 2045 reflects input received during extensive outreach to the public and regional stakeholders—the NJTPA’s largest such effort ever for a plan update. Nearly 3,000 people of all ages and economic backgrounds—from children to millennials to senior citizens—provided input for this plan.

The innovative outreach included pop-up booths at community events, customized public workshops, millennial dinner parties, a radio booth to engage children, interactive presentations at conferences and public meetings, a freight industry roundtable, a general symposium on the region’s future, a session on emerging technologies and special outreach sessions with limited English speakers and low-income residents. These outreach events, and a concurrent online survey, asked questions relating to seven topics: Great Places, Safety, Resiliency, Getting Around, Technology, Environment and Economy.

While public opinions and thoughts varied greatly, common themes included the desire to address congestion, expand transit options and service,

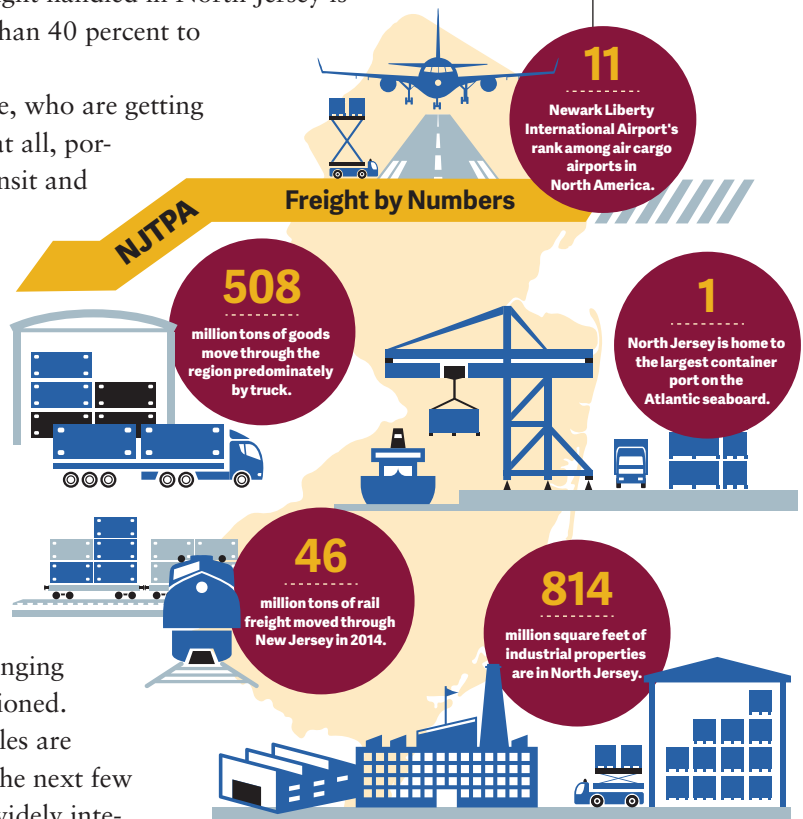
provide walking and biking opportunities, improve safety and build resiliency into systems.

Regional Trends

To supplement public input in setting priorities, Plan 2045 includes a careful assessment of the current condition and performance of the transportation system and an in-depth evaluation of trends that will affect it over the next 30 years. Among the key trends:

- Since 2013, the regional economy has rebounded, regaining jobs lost during the recession of 2007-2009
- The latest forecasts estimate that the region's population will increase by 17 percent by 2045, from 6.7 million to 7.7 million people; employment will increase by 14 percent, from 3 million to 3.4 million jobs
- From 2010 to 2015, miles of vehicle travel increased 3 percent, due to relatively affordable gasoline, an improved economy and other factors.
- The amount of domestic freight handled in North Jersey is projected to grow by more than 40 percent to 719 million tons in 2045
- Less driving by young people, who are getting drivers licenses later or not at all, portends long term need for transit and mobility alternatives
- Growth of single person households and preferences among young people and older adults for housing in walkable areas is challenging traditional post-war suburban land use patterns

Plan 2045 considers how to respond to and, where possible, shape these trends along with the likely game-changing developments previously mentioned. In particular, self-driving vehicles are expected to be deployed over the next few years and are predicted to be widely inte-



grated into the transportation network during the time period covered by Plan 2045. These technologies doubtless will have far ranging impacts on the movement of people and goods, including how transit operates in the future.

This plan seeks to build flexibility into projects and programs—including through careful study of alternatives, work with partner agencies and designs based on best practices and community needs—to allow the region to cope with uncertainties, take advantage of innovations and accommodate changing travel patterns.

Investment Priorities

Computer modeling also played a role in plan development. It was used in the NJTPA’s analysis of scenarios that examined future trends and conditions, as well as the possible long-term impact of investments.

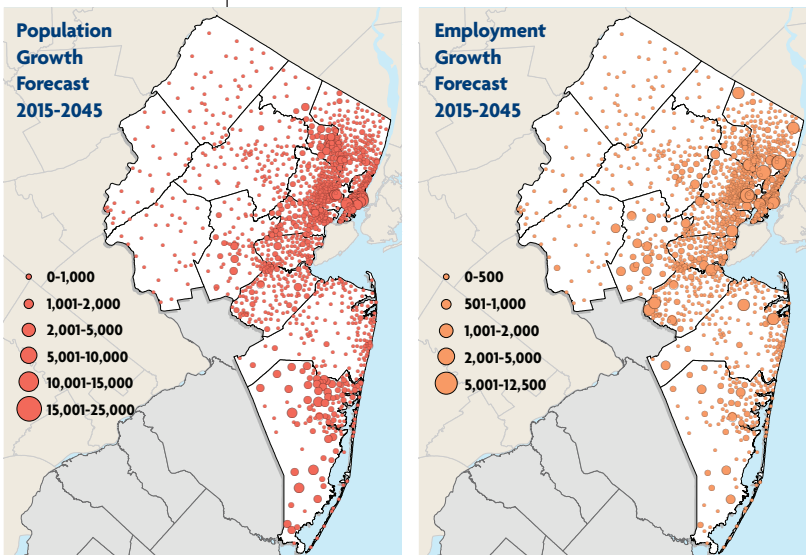
The results of this modeling and analysis, along with input from key stakeholders and guidance from the NJTPA Board of Trustees, was used to

update the NJTPA’s Regional Capital Investment Strategy (RCIS), a statement of principles and guidelines that contains desired spending allocations for different categories of transportation projects over the life of the plan (see inside back cover).

The RCIS has evolved since Plan 2040. Heeding the lessons of Superstorm Sandy and recognizing the risk of future extreme

weather events and potential terrorist attacks like those of September 11, 2001, the NJTPA added a new RCIS principle (and associated guidelines) on the importance of resiliency in project planning and investments. The RCIS now also includes a new guideline calling for continued progress in streamlining project delivery to make timely and efficient use of available funds.

Maintaining and preserving existing infrastructure on all systems and modes will continue to be the RCIS’s top investment priority, with a long-term





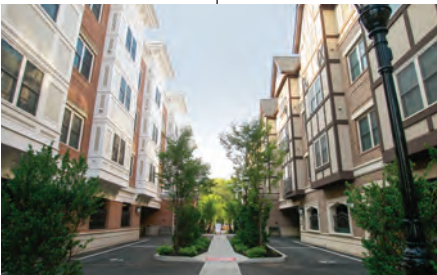
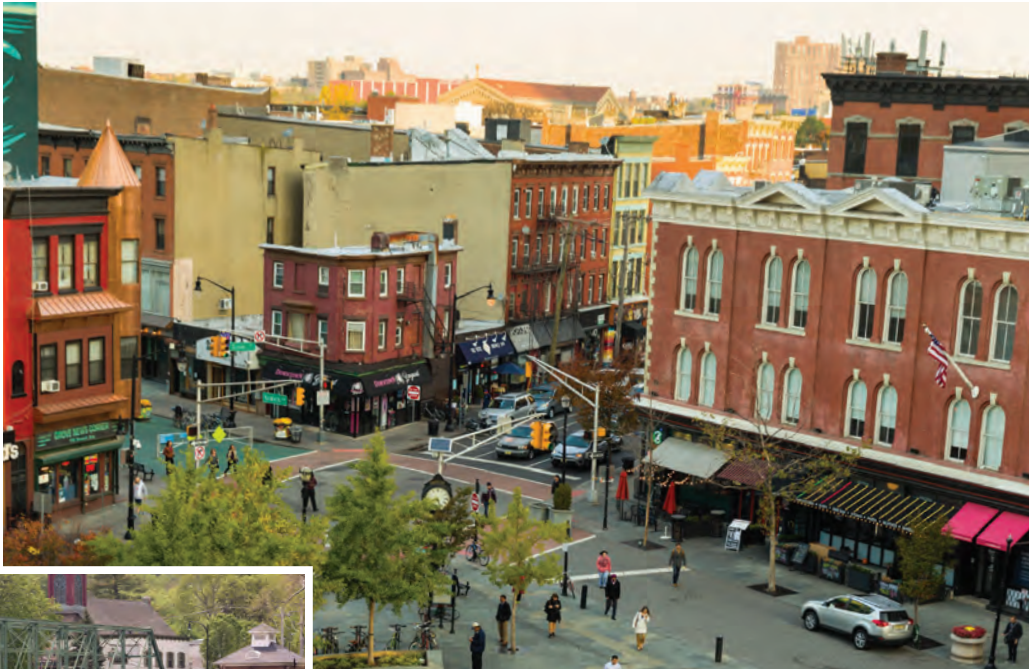
allocation objective of 73 percent of available funds. The second highest investment priority, allocated at 8 percent of funds, is enhancing and expanding transit. Other objectives include road enhancement and expansion, and projects dedicated to freight improvements, direct safety upgrades, technology deployment, travel demand management and bicycle/pedestrian facilities. Of course, safety, bicycle/pedestrian, resiliency and other needs are considered across all categories.

To monitor the effectiveness of the RCIS and the planning process it is part of, the NJTPA uses performance measures to assess impacts of investments and to set targets for how well the transportation system functions and is maintained.

Needs, Strategies & Implementation

Plan 2045 includes an extensive discussion of needs across all modes and facilities over the next 25 years and the strategies and implementation steps needed to address them. This includes assessments of how system improvement strategies and projects will affect the region's economy. A Project Index at the

**From top: Fort Lee,
Bergen County
Middletown,
Monmouth County
and Phillipsburg,
Warren County**



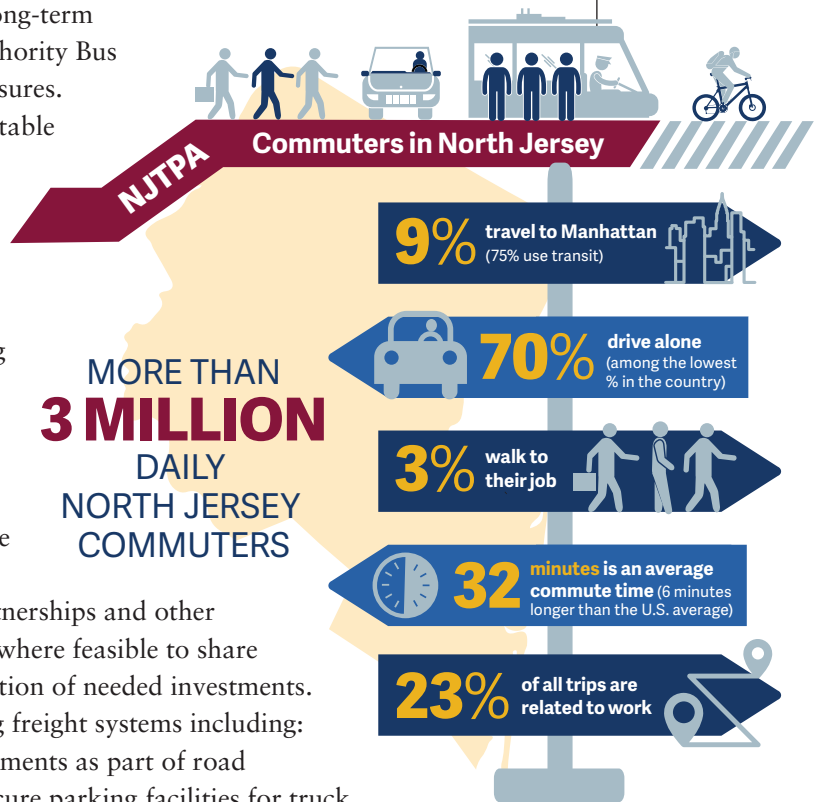
back of the plan lists planned improvements in the near-, mid- and long-term. Among the priorities identified in Plan 2045:

- Upgrading roads and intersections to improve safety, efficiency and traffic flow. This includes removing bottlenecks, upgrading traffic signal systems, installing left turn lanes, creating modern roundabouts, and controlling road access.
- Continuing efforts to further reduce the backlog of needed bridge repair and replacement and improve preventative maintenance. These will help moderate future investment needs.

- Encouraging a Complete Streets approach for road systems, better accommodating all modes and all users, including walkers and cyclists and the young and old. This includes upgrading crosswalks and sidewalks; adding “road diet” features such as curb extensions and bike lanes; calming traffic by slowing speeds and adding landscaping to make roads into boulevards; and other measures. In all settings, essential goods movement must be accommodated.

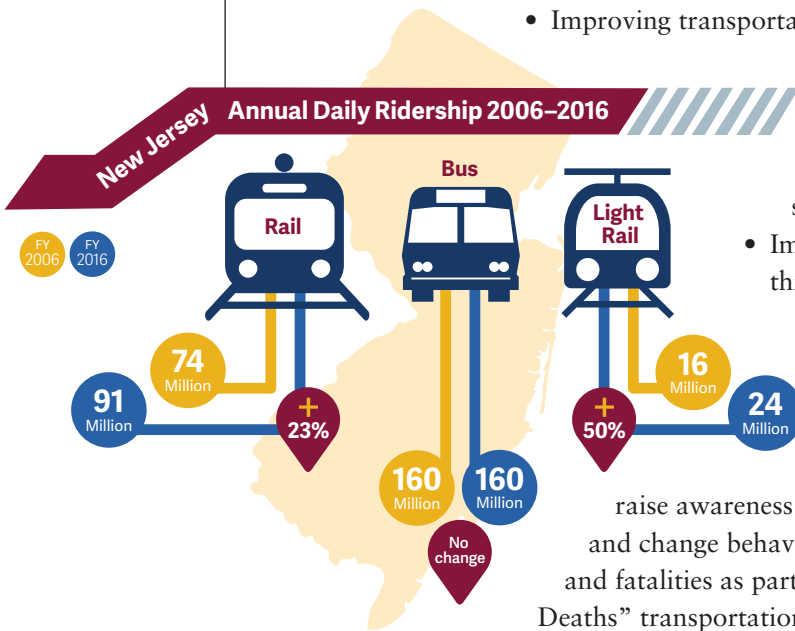
From top: Jersey City, Hudson County, Lambertville, Hunderton County and Cranford, Union County

- Encouraging Transit Oriented Development—a particular focus of the Together North Jersey Plan—including compact mixed-use developments with interconnected streets around transit stations and hubs combined with streetscaping, public art, pedestrian malls and other amenities to foster job growth and support walkability and public transit operations.
- Maintaining the bus and rail transit system in a state of good repair. This includes replacing buses, railcars and locomotives as they age, as well as attending to track, signal systems, stations and other infrastructure.
- Continuing strategic investments to expand transit access. Of prime importance is completing new Hudson River rail tunnels. The plan also discusses an aspirational scenario that could potentially add rail capacity through the longer-term Gateway Program. Other priorities include: light rail extensions across Route 440 in Jersey City and along the Northern Branch into Bergen County; commuter rail service expansions where feasible and supported by local land use changes; bus system upgrades through investments such as park-and-rides, layover areas, added technology, potential bus rapid transit services; and long-term replacement of the Port Authority Bus Terminal, among other measures.
- Supporting the creation of stable funding mechanism for transit operations to supplement transit fare box collections and existing operating subsidies.
- Systematically implementing new transportation technologies—Intelligent Transportation Systems—coordinated with state and federal partners through The Connected Corridor plan.
- Pursuing public-private partnerships and other project delivery efficiencies where feasible to share costs and speed implementation of needed investments.
- Safeguarding and improving freight systems including: accommodating truck movements as part of road system upgrades; finding secure parking facilities for truck



drivers to get the rest they need; expanding port capacity and waterside sites to handle the projected increase in freight; expanding off-peak truck delivery; adding short-sea shipping lines; and addressing physical constraints on the rail freight network.

- Supporting New Jersey’s eight non-profit Transportation Management Associations (TMAs) in promoting transportation choices (transit, carpooling, walking, and biking), providing traveler information, coordinating shuttle and other services to get people to and from transit stations, bus stops and park-and-rides and working with employers to ease commutes.
- Helping address the special mobility challenges facing older residents, low-income people, veterans and people with disabilities through coordinated services and policies to improve access to employment, health care, education and social support.



- Improving transportation safety through capital investments in the Local Safety and High Risk Rural Roads Programs, which fund high-impact local safety improvements.

- Improving transportation safety through the Street Smart NJ pedestrian safety education and enforcement campaign undertaken in more than 60 communities thus far. The campaign works to

raise awareness of pedestrian and motorist laws and change behaviors that cause crashes, injuries and fatalities as part of New Jersey’s “Toward Zero Deaths” transportation safety goal.

- Continuing to work with partners to fund new strategies, technologies and projects that help prevent and better prepare the region for possible security threats.

- Continuing to work with partners to improve resiliency, including assessing vulnerabilities and preparing infrastructure to withstand environmental and other disruptions and to quickly resume normal operations.



Financing the Plan

Paying for the plan remains a challenge. Despite increased federal and state funding for the short- and medium-term, needs continue to far outstrip available resources. This makes prioritizing investments through the MPO planning process as important as ever, including greater use of performance measures.

The financial element of Plan 2045 identifies a prudent, fiscally constrained approach to financing needed investments, totaling almost \$112 billion in anticipated funds over the next 28 years to 2045. It also identifies what could be accomplished with additional funding (under an Aspirational Funding Scenario)

Summary of Capital Funding Assumptions

Total Revenues (millions, year of expenditure dollars)

Year-of-Expenditure Dollars	Plan 2045	Limited	Aspirational
Federal	56,142	43,983	67,434
State	55,698	49,357	73,762
Other	950	930	993
Total	112,790	94,270	142,189
Increase (or decrease) over Plan 2045 Scenario		(16.42%)	26.07%

*Other includes Port Authority of New York and New Jersey, New Jersey Turnpike Authority and Metro-North contributions

From top: North Branch, Somerset County and Newark, Essex County



Competitive ●



Efficient ●



Livable ●



Resilient ●



and the challenges of a more constrained Limited Funding Scenario. The financial element also incorporates the revised RCIS guidelines and spending objectives over the life of the plan.

Making Connections

Plan 2045 reflects efforts to enhance mobility for a growing population and regional economy while continuing wise stewardship of the region’s transportation assets. The plan seeks to use thoughtful, strategic investments to broaden the reach and scope of the connections made possible by an already-robust regional transportation system.

From top: Highlands, Monmouth County, Franklin Township, Somerset County and Asbury Park, Monmouth County

With support from the NJTPA Board of Trustees and an engaged public, the NJTPA will continue to hone its approach to planning, working in coordination with its member counties and cities, as well as the state’s transportation operating agencies, to implement the plan’s policies and priorities. Over the next two decades or more, guided by this plan, the region will continue to improve and adapt its transportation system to become more **competitive**, **efficient**, **livable** and **resilient**, by connecting people, places and potential.

NJTPA Regional Capital Investment Strategy Principles

The Regional Capital Investment Strategy (RCIS) consists of nine principles (shown below) and associated guidelines (in the plan addendum) which set the overall direction for NJTPA investments over the long term.

Help Northern New Jersey Grow Wisely

Transportation investments should encourage economic growth while protecting the environment and minimizing sprawl in accordance with relevant state and federal plans and guidance.

Make Travel Safer

Improving safety and security should be explicitly incorporated in the planning, design and implementation of all investments.

Fix it First

The existing transportation system requires large expenditures for maintenance, preservation, and repair, and its stewardship should be the region's highest priority.

Expand Public Transit

Investment to improve the region's extensive transit network should be a high priority, including strategic expansions to increase capacity and to serve new markets.

Improve Roads but Add Few

Road investments should focus on making the existing system work better, and road expansion should be very limited without compromising the tremendous accessibility provided by the existing highway system.

Move Freight More Efficiently

Investments should be made to improve the efficiency of goods movement because of its importance to the region's economy and quality of life.

Manage Incidents and Apply Transportation Technology

Investments should be made to transportation systems management and operations to improve information flow, operational coordination, energy use, and other technological advances that can make the transportation system work smarter and more efficiently.

Support Walking and Bicycling

All transportation projects should promote walking and bicycling wherever possible.

Increase Regional Resiliency

Investments should be made to mitigate risks associated with sea level rise, extreme weather, homeland security, and other potential threats. Investments should consider criticality of infrastructure, vulnerability, and level of risk.

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