

The Regional Capital Investment Strategy for the NJTPA Region November 2017

The economic health and overall future of northern and central New Jersey depend greatly on its transportation system. By leading the metropolitan transportation planning process, the North Jersey Transportation Authority (NJTPA) makes decisions that significantly affect whether the region prospers and how its communities grow and evolve. The region faces opportunities and challenges, foreseen and unforeseen, with economic shifts, environmental changes, technological developments, and demographic trends. This Regional Capital Investment Strategy (RCIS) approaches the region's competing demands through a balanced, realistic approach to transportation regional spending.

In its long range regional plan, *Plan 2045*, the NJTPA identifies seven broad regional goals that provide a foundation for planning, project development, and capital programming. The agency programs over \$2 billion each year in capital investments. The RCIS provides policy and planning direction and guides project selection. In turn, the NJTPA prioritizes projects based upon criteria and measures related to each planning goal and consistent with the RCIS.

Over the next three decades, the NJTPA anticipates that significant additional funding may be available for transportation investments. Even an increased revenue stream, however, will fall short of fully addressing the region's transportation needs, making the identification of investment priorities all the more crucial. As NJTPA policy, the RCIS seeks to best balance the region's priorities and investment principles with the ultimate goal of realizing a robust and positive long-term future for the region.

This RCIS is based on guidance from the NJTPA Board of Trustees and its long-term vision for the transportation system. The RCIS was developed to update the agency's prior investment strategy, originally approved in 2005 and refined in subsequent plan cycles. The updated RCIS incorporates input from agency staff and an advisory committee of planning partners. It is grounded in a consultant-supported technical analysis, which included reviewing the allocations of previous long-range plans and recent transportation improvement programs. The analysis largely explored a range of future regional scenarios, focusing on changing trends and potential "game-changers" in demographics, economics, the environment, transportation behavior, and technology, along with the tradeoffs inherent in emphasizing different investment principles.

The RCIS also draws from the recent Together North Jersey (TNJ) Plan. The NJTPA was a primary partner in the development of this first comprehensive plan for sustainable development in North Jersey. The TNJ Plan sets forth priority goals and outlines a vision for the region to be competitive, livable, efficient, and resilient. It provides guidance to partner agencies in establishing their own supportive policy and plans. One of the TNJ focus areas is to "Connect people and places with safe, convenient, and reliable transportation." The NJTPA, as the region's metropolitan planning organization (MPO),

is responsible for long-range regional transportation planning and transportation capital investment programming, and this RCIS assists in advancing the TNJ vision.

Considering a long-term horizon (i.e. for *Plan 2045*), the RCIS targets allocations for twelve categories of capital investment with a balanced approach to future transportation spending in the region. The RCIS also comprises a set of policy-based investment principles and guidelines to further guide investment decisions. The long-term allocation targets largely mirror current spending patterns (with some adjustments) and serve to reinforce past investment decisions by the NJTPA.

The RCIS provides for the majority of funding to be allocated toward maintaining, preserving, and hardening the existing transportation network, but the investment strategy also builds upon the region's commitment to expanding transit, improving safety, enhancing transportation efficiency, optimizing the system, improving freight facilities, augmenting bicycle and pedestrian travel, increasing regional resiliency, and encouraging sustainable growth and prosperity. The following is a summary of the allocations by category:

- **Maintenance and preservation for roads, bridges, and public transit facilities** will increase to 73 percent of total investment (although the intention is to invest more in the near term in order to bring the system to a sustainable state of good repair, allowing for relatively lower future needs).
- **Investment in enhancing and expanding public transit** will decrease to 8 percent (recognizing the difficulty in realizing significant expansions to the existing robust transit network), but this does not include additional dedicated funding as noted below.
- **Investment in road enhancements** such as adding turning lanes or renovating intersections will decrease to 3 percent, but technology, incident management, safety and pedestrian/bicycle investments will improve road operations as well.
- **Investment in roadway expansion** will decrease to 1 percent, with more cost-effective benefits to be found from other types of improvements.
- **Investment in direct safety improvements** will increase to 4 percent (while at the same time recognizing that safety is a priority to incorporate in all investments).
- **Investment in dedicated freight facilities** will increase to 3 percent, serving critical markets and optimizing the system.
- **Investment in intelligent transportation systems (transportation technology) and incident management projects** will increase to 4 percent (supporting the potential for major advances in technology) while also including these elements appropriately in other types of projects.
- **Investment in bicycle and pedestrian facilities** will increase to 2 percent, with non-motorized elements incorporated in other types of projects as well.
- **Investment in reducing motor vehicle trips** will increase slightly to 2 percent.

Inevitably, there are some tradeoffs in these allocations; considerations include the following:

- The emphasis on system preservation leaves relatively little funding for road and transit expansion desired by some communities, and wait times for major improvement projects could grow. However, as noted above, prudent use of life-cycle-based asset management systems will likely involve a higher near-term allocation to bring the system to a sustainable state of good repair. It is anticipated that this will yield relatively lower future preservation needs, with the balance of funding targeted toward the other categories (other than roadway expansion).
- Expansions in rail service may advance more slowly than is desired by some communities, but in step with the ability to attract riders and support cost effective operations.
- Giving greater weight to safety, walking and biking, and improved access to transit may impact the movements of autos, particularly in densely populated areas.
- Pursuing innovative solutions, particularly those involving new technologies, may entail some risk and require fine tuning after implementation.

The RCIS allocations serve to guide the development of the projects and programs that *Plan 2045* proposes, identified in its Plan scenario. The investment strategy and the *Plan 2045* financial plan assume reasonable increases in both state and federal funding over the next three decades, in addition to dedicated funding for constructing a new passenger rail tunnel under the Hudson River (the Hudson Tunnel Project).

The *Plan 2045* Aspirational scenario, considering the possible availability of additional revenue would incorporate allocations based largely on the above but with differences that take advantage of achievements in system preservation. The plan's Baseline scenario with less funding would motivate allocations in the opposite direction, with larger allocations to preservation at the expense of system expansion. Funding dedicated to new capacity for expanded passenger rail service (e.g., Amtrak's Gateway Program) associated with the Hudson Tunnel project is aspirational in *Plan 2045*.

The RCIS investment mix is intended to help generate a variety of benefits for the region. In coordination with other plans, the long-term transportation investment strategy will help to accommodate the additional 1 million people and 400,000 jobs projected in the region over the next 28 years while making cost effective use of infrastructure, preserving open space, and protecting the environment. The investments would likely lead to a continued high level of accessibility for the region's travelers and goods movement, although without an increase in trans-Hudson capacity, congestion and crowding on the transit and roadway systems are to be expected. It is anticipated that the focus on investing in preservation will at least allow the existing infrastructure to be brought to a state of good repair. Expected outcomes from the transportation investments affirm their value in fostering desired outcomes such as:

- Better accessibility to labor and jobs, and to services and cultural facilities
- Stronger economic prosperity and opportunity
- More predictable travel time for highway and public transit, managed levels of congestion
- Maintained or greater transit capacity between northern New Jersey and New York City, and increased transit ridership within the NJTPA region
- Accommodated freight traffic, including by truck and increasingly rail and barge

- More mode options and information available for travelers
- Fewer vehicle miles traveled, more walking and biking, safer travel and cleaner air
- Fewer roadway crashes, fatalities, and serious injuries, including for pedestrians and bicyclists
- Transportation system maintained and better able to accommodate disruptions

Targeting these outcomes with the RCIS will help to address NJTPA performance measures and applicable targets, including those established in coordination with regional, state, local and federal partners and those required nationally.

Importantly, the investment strategy allocations described are long-term approximations. *The precise levels of funding applied to the various spending categories may vary significantly from year to year.* Ultimately, the recommended mix of investments will mean support for the regional economy, stronger community centers, better health through increased walking and biking, and increased traveler satisfaction through transportation choices and better information flow, greater resilience to natural and human-caused challenges, and a cleaner environment.

NJTPA RCIS Investment Principles

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.

NJTPA RCIS Investment Principles and Guidelines

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.

Investment Guidelines

- Encourage shorter and fewer motor vehicle trips, especially those involving single-occupancy vehicles, through continued support (about 2 percent of transportation funds) for demand management, including the programs of Transportation Management Associations.
- Make investments that support development in cities, planned growth areas, distressed areas, centers, redevelopment areas, brownfield and grayfield sites, and other places with existing infrastructure.
- Scrutinize investments outside the above areas, to ensure that alternatives are examined, that they are justified by economic and community needs, and that sprawl-inducing impacts are minimized.
- Fund investments that encourage compact, mixed-used development, that support transit use (“transit oriented development”), safe walking/biking, access to open space and recreation, and cost-effective use of existing or planned public infrastructure.
- Protect the character of communities and the natural environment through context-sensitive design, traffic calming, historical preservation, roadway beautification and creative placemaking strategies.
- Develop transportation improvements that distribute benefits and burdens equitably and serve all communities, including low-income residents, minority populations, senior citizens, the disabled, and children.

Make Travel Safer

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

Investment Guidelines

- Allocate approximately 4 percent of overall spending to direct safety improvements, while also fully incorporating safety enhancements in other investments.
- Enhance safety in areas with high fatality and injury rates, with particular attention to pedestrian travel and safety for seniors.
- Target investments to address priority crash types identified in the New Jersey Strategic Highway Safety Plan.
- Support NJ TRANSIT Safety Programs to improve safety.
- Implement improved safety measures at at-grade rail crossings along heavily traveled corridors and other measures to address freight movement safety.
- Consider national security and disaster response issues in facility designs.

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.

Investment Guidelines

- Invest 73 percent of overall spending in maintenance and preservation, with about 36 percent going to transit, 20 percent to bridges, and 17 percent to roads.
- Maintain, preserve, rehabilitate, and replace infrastructure applying asset management techniques to address objective measures such as facility condition, level of use and projected service life (“life cycle”).
- Coordinate preservation investments with those that enhance the resiliency of the regional transportation network.
- Utilize innovative preservation materials and techniques to improve environmental conditions or at least to minimize negative environmental impacts.
- Streamline project delivery to make more cost effective use of available funding.

Expand Public Transit

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

Investment Guidelines

- Allocate about 8 percent of total spending to enhancing and expanding public transportation (about 4 percent dedicated to enhancing the public transit system—projects such as station and operational improvements—and 4 percent for expansion—new bus routes, new or extended rail lines, etc.)¹
- Focus enhancements on improving the speed and reliability of trips, facilitating access to the system, incorporating pedestrian and bicycle facilities, integrating bus and rail services, and achieving new intermodal connectivity.
- Expand system capacity in measured steps based on the ability to meet travel demand, attract new riders and achieve cost-effective operations.
- Improve conditions and service at transit hub locations.
- Build a new passenger rail tunnel under the Hudson River and associated new capacity for expanded service, which is the region’s top transit expansion priority, by obtaining additional dedicated funding (beyond normal allocations that are subject to this regional capital investment strategy).

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.

Investment Guidelines

- The investment mix should allot about 3 percent of spending to physically enhance roadways (such as renovating intersections or adding turning lanes).²

¹ Maintenance, technological and safety/security improvements are addressed in other guidelines. Does not include additional dedicated transit funding, such as for trans-Hudson transit expansion.

² Particular road improvements, including technological, direct safety improvements, and creating dedicated freight facilities are addressed separately.

- Limit expanding roadway capacity (new roads or widening) to about 1 percent of funding.
- Use the NJTPA congestion management process and context-sensitive criteria to target roadway investments that improve travel time reliability and address bottlenecks and hotspots. Emphasize improvements that will help to expedite efficient public transit and goods movement flows.
- Make improvements that strengthen parallel routes and network redundancy.
- Invest in new and retrofitted facilities that enable safe access and mobility of pedestrians, bicyclists, and transit users of all ages and abilities.
- Complement road improvements with transit, ridesharing, and pedestrian/bicycle projects to help limit auto trips.
- Avoid roadway expansion in environmentally sensitive areas or away from planned growth areas.
- Utilize environmentally beneficial materials and design in road enhancement and expansion projects.

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.

Investment Guidelines

- Allocate about 3 percent of spending to dedicated freight improvements (such as freight rail facilities and intermodal infrastructure).
- Support the transport of goods with improvements in the operations, efficiency, and connectivity of roadway, freight rail, and waterborne facilities. Give priority to the region's major corridors, including critical urban and rural truck corridors as well as first and last mile connectors.
- Focus transportation investments on encouraging freight related redevelopment of brownfield sites and similar strategies particularly in and around intermodal facilities and corridors.
- Make investments that promote intermodal options and optimization where possible, including rail and waterborne freight movement via barges or ferries.
- Address impediments to national freight rail standard access.

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.

Investment Guidelines

- About 4 percent of funding should be dedicated to direct incident/emergency management projects, intelligent transportation systems, and new technology, while incorporating such elements in other types of projects as well.
- Invest in cooperative planning and coordination among agencies to improve incident/emergency management and deployment of intelligent transportation systems.

- Invest in technological improvements in accordance with the region’s Intelligent Transportation Systems (ITS) architecture.
- Fund development of systems that provide real-time traffic, transit, parking, scheduling, and connection information on travel conditions to public transit customers, roadway travelers, and freight movers.
- Provide for technology that serves first- and last-mile access to the public transit network.
- Invest in information systems that support information flow within and among operating agencies including those responsible for addressing roadway incidents.
- Invest in improved and standardized electronic fare and toll payment systems.
- Focus initial ITS investments on demonstration projects to evaluate potentially beneficial new technologies and systems.
- Invest in technologies that deliver environmental benefits, improve reliability, manage congestion, and streamline traffic flow.
- Support technology investments that are accessible/available to all travelers, regardless of income, age, disability, etc.
- Add cost-effective new technology infrastructure with demonstrable demand and benefits, such as that serving connected vehicles, autonomous and driverless vehicles, and on-demand transportation.
- Assess unwanted impacts from technology (e.g., self-driving cars that circle endlessly or reduced public transit demand), and adopt appropriate policies to minimize these impacts.

Support Walking and Bicycling

All transportation projects should promote walking and bicycling wherever possible.

Investment Guidelines

- About 2 percent of funding should be applied to build and redesign facilities for walking and biking.
- Enhance or create pedestrian and bicycle facilities, including sidewalks, bike lanes, and bike paths, which improve their connectivity for walking and biking trips, facilitate and improve access to transit and also complement other transportation improvements.
- Coordinate roadway and transit projects with pedestrian and bicycle improvements made by counties and municipalities.
- Target improvements to areas with existing, growing, or strong potential for walking and bicycle travel.
- Invest in improvements that support walking by children (such as Safe Routes to School) and others with limited motor vehicle travel options.
- Invest in innovative projects such as Complete Streets and bike-share programs that support increased and safer walking and bicycling.
- Make use of environmentally beneficial materials and design for pedestrian and bicycle facilities.

Increase Regional Resiliency:

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

Investment Guidelines

- Prioritize transportation investments that offer additional benefits for resiliency, for system preservation projects as well as upgrades and expansions.
- Incorporate vulnerability and risk assessments into project development.
- Scrutinize investments that are in places highly vulnerable to potential flooding/sea level rise.
- Invest in alternate fuel infrastructure in support of energy independence.
- In concert with Enhance Roads and Expand Transit guidelines, coordinate investments within and across modes to provide and/or enhance resiliency, strengthen parallel routes, enhance regional connectivity, increase the availability of mode options, and increase network redundancy.
- Make investments that support the targets of the Global Warming Response Act of 2007, addressing New Jersey's greenhouse gas reduction goals and related NJ State Plan recommendations. Coordinate such investments at state, regional, and local levels.