



# New Jersey Turnpike Authority

## MEMORANDUM

TO: James S. Simpson  
Commissioner, New Jersey Department of Transportation &  
Chairman, New Jersey Turnpike Authority

FROM: Veronique Hakim *V. Hakim*  
Executive Director, New Jersey Turnpike Authority

DATE: November 29, 2012

RE: 2013 New Jersey Turnpike Authority Capital Project and Investment Plan

As required by statute N.J.S.A. 27:23-3.2(c) I hereby submit the New Jersey Turnpike Authority's Capital Project and Investment Plan ("plan") for 2013. The aforementioned statute states in part "...the Authority shall prepare and file with the Commissioner a Capital Project and Investment Plan that details proposed transportation projects and proposed work on existing transportation projects that further the goals of attaining coordinated and integrated Statewide and regional transportation systems...".

Having reached the mid-way point in the Authority's \$7 billion Capital Program, I believe that the enclosed plan illustrates the Turnpike Authority's continued progress and commitment to maintaining and operating safe, reliable roadways and further demonstrates the economic benefit to New Jersey and the greater region that the Capital Program brings through the creation of jobs.

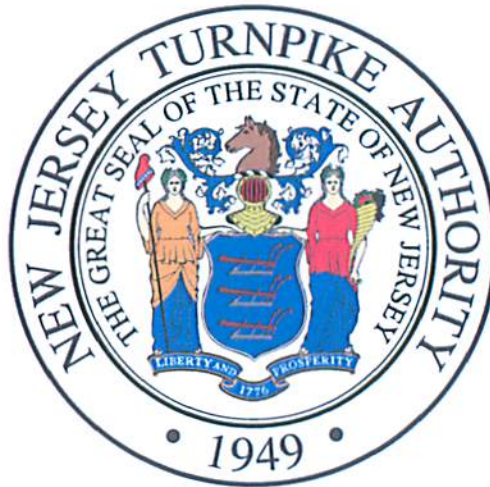
I am pleased to submit this plan to you and look forward to continuing the fine work of the New Jersey Turnpike Authority.

Enclosure

New Jersey  
Turnpike Authority

**2013  
Capital Project &  
Investment Plan**





# 2013

## Capital Project & Investment Plan

### New Jersey Turnpike Authority

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*November 2012*

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## ***Introduction***

The New Jersey Turnpike Authority (the "Authority") Capital Project and Investment Plan for 2013 provides a continuing look at the status of the Authority's \$7billion, multi-year Capital Program and is presented pursuant to New Jersey Statute 27:23-3.2 that requires the Authority to submit certain reports to the Governor, the Chairs of the Senate and General Assembly Appropriations Committees and the Director of the Division of Budget and Accounting in the Department of Treasury.

This strategic plan (the "plan") is mandated under paragraph (c): "Prior to December 1 of each year, the Authority shall prepare and file with the Commissioner a Capital Project and Investment Plan that details proposed transportation projects and proposed work on existing transportation projects that further the goals of attaining coordinated and integrated Statewide and regional transportation systems. The plan shall address, among other matters, the interconnection of the New Jersey Turnpike and the Garden State Parkway with other transportation systems. The plan should also consider the impact of an improved transportation system on the State's economy. ..."

When the consolidation of the New Jersey Turnpike Authority and Highway Authority occurred in 2003, the singular combined agency had almost 2,800 full-time employees. Today, the New Jersey Turnpike Authority has 2,011 employees which is a reduction of more than 27%. While the agency has reduced headcount, the level of service provided to motorists has been maintained and the Authority continues to explore ways to provide services in the most efficient manner while always maintaining necessary staffing levels in the most vital of our departments including Maintenance, Engineering and Traffic Operations.

In 2011, the Authority was able to reduce its operating budget by \$10 million while maintaining its service levels and has remained flat in the years since. Moreover, in 2013 the Authority's operating budget will be lower than its 2008 operating budget. By controlling operating costs, the Authority has more money available to provide better roadways to its motorists. In fact, the rating agency Moody's, in affirming the Authority's [A3] rating this year, upgraded the Turnpike Authority's outlook from negative to stable. This upgrade reflected Moody's acknowledgement that 1) the Authority has stabilized and controlled its operating expenses while other toll agencies have seen their operating budgets grow, 2) the Authority continues to deliver its Capital Program on-time and on-budget, and 3) the Authority has a stable and conservative financial plan moving forward.

## ***Overview of the Capital Program***

The \$7 billion Capital Program (the "Program") adopted by the Turnpike Authority Board of Commissioners in October 2008 represents a significant investment in the transportation infrastructure of New Jersey, is a critical component of the regional transportation network and contributes to maintaining construction employment in the State thereby strengthening the overall economy. The Program is financed through bond proceeds backed by future toll revenue and includes large-scale projects that when complete, will add approximately 235 new miles of roadway through the widening of the Turnpike and Parkway and additional projects to expand interchanges, rehabilitate bridges and deploy new technologies.

The New Jersey Turnpike Authority Capital Program has reached the midway point having committed \$3.5 billion of the \$7 billion program into active projects with construction underway on various projects on both the New Jersey Turnpike and Garden State Parkway. Specifically, there are over 100 active construction contracts awarded and more than 60 contracts in the design phase. On the Turnpike widening project alone the Authority is spending \$1 million/day – that is money that creates real jobs and works to strengthen the State's economy. According to certain studies regarding job creation, for every \$1B in construction, 9,000 jobs are created or supported.

The progress made is already visible to our patrons and being utilized by motorists. To date on the Turnpike Widening between interchanges 6 to 9 the Authority has opened the third lane in the northbound outer roadway between interchanges 8A and 9 and opened new ramps at interchanges 6, 7A and 8A. It is anticipated that the new toll plaza at Interchange 8 will be open to motorists by the end of 2012. Additionally, 7 new bridges utilized to move local traffic over the Turnpike roadway have been constructed and are now open to the public, a true benefit to local communities in and around those areas.

On the Garden State Parkway the first phase of the widening between exits 80 and 63 was completed and opened in time for Memorial Day weekend in 2011 and by the end of summer 2013, the second phase of the widening between exits 63 and 48 will be open.

These and other Capital Program projects including improvements to bridges, roadways, interchanges and facilities will be discussed in further detail in this report in addition to new technologies being deployed, investments in environmentally friendly, "green" initiatives and continued efforts to increase motorist safety.



# 2013 Capital Investment Plan



## ***New Jersey Turnpike Widening Program***

While the New Jersey Turnpike is one of the most efficient and reliable roadways, it is also one of the busiest in the nation as it connects many parts of New Jersey and States in the northeast corridor and continues to be a vital link in the transportation network of the region.

Built over 60 years ago, the Turnpike roadway currently runs 152 miles including extensions and spurs, houses 28 interchanges and 366 toll lanes and remains one of the most cost efficient toll roads with an average toll rate per mile (car) of \$0.114.

One of the most significant projects in the Authority's \$7 billion Capital Program is the Turnpike Interchange 6 to 9 Widening Program that dedicates \$2.5 billion of the Program dollars to this widening project. When complete, this widening will provide three additional travel lanes in each direction between Interchanges 6 and 8A, and one additional lane in each direction between Interchanges 8A and 9 in addition to a new toll plaza at Interchange 8. The Interchange 6 to 9 program is the largest expansion of Turnpike capacity since the roadway opened in 1951, adding an additional 170 lane miles, crossing three counties and 11 municipalities.

Given the congestion already realized in the area, future traffic projections and reliance on the Turnpike as an essential roadway in the northeast corridor for the efficient movement of goods, increasing the roadway capacity and improving the mobility of the state's workforce reduces the cost of operating in New Jersey and positions the State as a more attractive place for businesses.

This widening project is currently spending approximately \$30 million a month or \$1 million a day. That is a real economic benefit to the area by creating and sustaining jobs. Similarly, the Authority's Capital Program is also creating opportunities for small businesses. On the Turnpike widening project alone 25 percent of design and construction contracts have been awarded to small businesses. Additionally, two Small Business Enterprises (SBE) became large companies as a result of their work on the widening. On the construction side, the contracting community is achieving the Authority's goal of 25% SBE participation.

The widening remains on schedule for completion in the summer of 2014 but the significant progress already made is evident and open to traffic. To date, the Authority has completed and opened the third lane northbound on the outer roadway between Interchanges 8A and 9. Moreover, the Authority has opened several Turnpike ramps to and from toll plazas including:

- three at Interchange 6 (NB and SB ramps to the tolls and the NB ramp from the tolls);
- one at Interchange 7A (SB ramp to the tolls); and
- one at Interchange 8A (SB ramp from the tolls to the inner roadway).

The Authority has opened to traffic seven newly constructed bridges that carry local (county or municipal) roadways over the Turnpike and recently completed the new I-195 westbound bridge. In addition, it is anticipated that the new toll plaza at Interchange 8 will be open by the end of 2012.

To date the Authority has awarded 29 contracts for this widening project at a value of more than \$1.2 billion. The final mainline roadway construction contract was awarded in 2012 and the Authority anticipates the award of one (1) reforestation contract in 2013 and two (2) miscellaneous roadway and bridge improvement contracts in 2014.

## ***Garden State Parkway Widening Program***

The Garden State Parkway is one of the most iconic roadways in New Jersey and is considered by some models to be the busiest toll road in America. Constructed 56 years ago, the Parkway is 173 miles long with 234 toll lanes and 359 exits and entrances. Also one of the most cost effective toll roads, the Parkway will cost a passenger car \$8.25 for a full trip and averages \$0.048/mile for a mainline through trip.

As detailed in previous Capital Investment Plans, Phase I of the Garden State Parkway widening was completed in time for the beginning of the summer 2011 travel season. This first phase of the Parkway widening included the construction of one additional travel lane in each direction between Interchange 63 in Stafford Township and Interchange 80 in Toms River and the installation of Express E-ZPass at the Barnegat Toll Plaza. The total cost for Phase I of the GSP Widening Program was \$180 million.

Construction of Phase II of the project, which commenced in October 2011 and is estimated to cost approximately \$240 million, is designed to add an additional travel lane in each direction between Interchanges 48 and 63. This second phase also includes grading and drainage improvements between Interchange 30 and 48 and rehabilitation of an existing span over the Mullica River. There are a total of four construction contracts associated with the Phase II improvements and it is anticipated that while motorists will benefit from the completion of the third travel lane in 2013, the overall project will be complete in early 2014.

The Authority anticipates that Phase III of the Garden State Parkway widening will occur in the future and will include construction of an additional travel lane between Interchanges 35 and 43. Further, the Authority is currently studying traffic projections for the corridor between Interchanges 30 and 35 to determine if future traffic demands support widening the Parkway in this area.

## ***Bridge Improvements***

In addition to the Turnpike and Parkway roadways, the numerous bridges that carry the Turnpike and Parkway over local roads or waterways are critical to the overall Authority transportation infrastructure. As part of the Capital Program the Authority has dedicated capital funds to address certain improvements necessary to roadway bridge structures. Specifically, the Authority has undertaken projects to repaint and clean structural steel of the highest priority on major and routine bridges, re-deck the highest priority mainline bridges, and provide security improvements to a number of bridges on the Turnpike and Parkway. Also, design and construction has occurred to seismic retrofit the Turnpike's highest priority bridges as recommended from the Phase I Seismic Screening and Prioritization Report.

Under the Capital Program in 2012 the NJTA awarded the following construction contracts related to bridge improvements on the Turnpike and Parkway:

- Bridge deck reconstruction, miscellaneous structural, roadway and lighting improvements between Turnpike mileposts N6.00 and N8.20 (\$68 million); this is the first phase of the Newark Bay Hudson County Extension Zone 3 bridge deck reconstruction program. This work focuses on the westbound roadway and involves bridge deck reconstruction, parapet and median barrier replacement, deck joint replacement, structural steel repairs, as well as drainage and lighting repairs between the Holland Tunnel approach and Interchange 14C. This construction contract was awarded in September 2012 with construction commencing in early spring and continuing through 2015. Subsequent to completion of this contract, a future contract will be awarded to address the eastbound roadway.
- Repainting of structural steel and miscellaneous improvements on the Alfred E. Driscoll Bridge (\$23 million);

Construction continued on the following previously awarded bridge projects in 2012:

- a new bridge spanning the Bass River on the Parkway;
- reconstruction of the Patcong Creek Bridge on the Parkway;
- deck Reconstruction on the Newark Bay Bridge on the Turnpike; and
- Passaic River Bridge Re-decking on the Turnpike.

Under the Capital Program in 2013 the NJTA anticipates awarding the following bridge related construction contracts:

- Great Egg Harbor and Drag Channel Bridge replacement;
- routine Bridge Deck Reconstruction, GSP milepost 121.0 to 150.0;
- repainting of structural steel, Str. No. P0.00, Delaware River Turnpike bridge; and Garden State Parkway substructure repairs.

As part of the Authority's efforts to maintain its infrastructure, and through our Maintenance Reserve Program, four bridge repair and resurfacing contracts were awarded in 2012 totaling approximately \$35 million dollars. These "maintenance type" contracts typically address bridge deck repairs, resurfacing as well as various other miscellaneous structural repairs. A total of 23 bridges were repaired on the Parkway and 28 bridges were repaired on the Turnpike.

In 2013 the Authority plans to award four bridge repair and resurfacing contracts worth approximately \$33 million dollars which will address structures on both the Parkway and Turnpike roadways.

## ***Roadway Improvements***

The preservation of the Authority's roadway system includes an annual pavement restoration and resurfacing effort for both roadways with an annual budget of \$20 million - \$10 million for each roadway. Typically, four resurfacing contracts are awarded - 2 for each roadway to resurface approximately 70 miles on each roadway.

In 2012 the Authority awarded the following resurfacing contracts:

- Resurfacing, Turnpike milepost 0 to 74 (\$3.5 million);  
Resurfacing, Turnpike milepost 74 to 122 (\$7.5 million);
- Central Pavement Restoration and Miscellaneous Improvements, Parkway milepost 80 to 143 (\$8.0 million);

In addition to the annual pavement restoration and resurfacing program, roadway improvements under the Capital Program for 2012 consisted of the following contracts:

- Culvert Repairs, Garden State Parkway milepost 118.5 to 121.5 (\$6.1 million);
- Rehabilitation of Concrete Median Barrier, Garden State Parkway milepost 141 to 150 (\$23.6 million); this contract will repair and/or replace approximately 45,000 L.F. of median barrier between mileposts 141 and 150.

In early 2013 the Authority anticipates awarding another contract for the rehabilitation of concrete median barrier between mileposts 129 and 142 at an estimated cost of \$20 million and will repair and/or replace 65,000 L.F. of barrier.

The Authority awarded the following contracts in 2012 for shoulder improvements on the Turnpike and Garden State Parkway:

- Left Shoulder Restoration, Turnpike milepost 0 to 29 (\$16.2 million);
- Shoulder Restoration & Improvements, GSP milepost 83.5 to 88.5 (\$84.2 million);
- Shoulder Restoration & Improvements, GSP milepost 90.5 to 93.5 (\$75 million);
- Shoulder Restoration & Improvements, GSP milepost 93.5 to 99.5 (\$101 million);

Construction will continue through 2013 on the Parkway shoulder improvements and is expected to be completed by December 2014. Once completed, there will be full 12-foot wide shoulders between mileposts 84 and 100 which will greatly improve safety in that area for disabled motorists as well as help to reduce the number of accidents by allowing drivers a greater margin of error should their vehicle, for whatever reason, leave the travel lanes.

## **GUIDE SIGN IMPROVEMENTS:**

Another component of the Authority's on-going Capital Program is the guide sign improvement program that will replace and/or upgrade signs and sign legends to be consistent with the Manual for Uniform Traffic Control Devices (MUTCD).

The authority anticipates awarding the following contracts under this program in 2013:

### **Sign Structures Advanced Fabrication:**

This contract is for the fabrication of 71 sign structures which will be used in the various contracts associated with this program and is scheduled to be awarded at the November 2012 Commission Meeting. The estimated cost of this contract is \$8,000,000

### **Guide Sign Improvements on the Turnpike and Garden State Parkway, Turnpike milepost 105.5 to 116.5 and Parkway milepost 128.3 to 143.2:**

This contract will upgrade and/or replace a total of 71 sign structures and 540 sign panels on both the Parkway and Turnpike at an estimated cost of \$20 million. The Authority anticipates awarding this construction contract in March 2013 and construction is expected to continue into 2014 with estimated completion by September 2014.

### **Road-wide Guide Sign Improvements on the Turnpike and Garden State Parkway:**

This contract will upgrade and/or replace approximately 220 sign structures as well as 1500 sign panels on both the Parkway and Turnpike at an estimated cost of \$60 million. The Authority anticipates awarding this construction contract in June 2014 with an estimated completion by June 2016.

Construction also continued in 2012 on the Variable Message Signs (VMS) installation project. The Authority awarded six construction contracts to install 222 VMS signs on the Turnpike and the Parkway, including 41 signs within the Turnpike Interchange Widening Project. The estimated value of these contracts is approximately \$82 million. It is anticipated that this project will be completed by the end of 2013.

## **INTERCHANGE IMPROVEMENTS:**

The Authority's Capital Program also includes approximately \$1.17 billion to improvements at various interchanges on both the Turnpike and Parkway. Among the projects currently included in the interchange improvement budget are:

### **Interchange 88:**

The construction contract for improvements at Garden State Parkway Interchange 88 was awarded in August 2012; construction began in October 2012 and is expected to be complete in May 2014. These improvements will complete the interchange by providing ramps to and from the south from Route 70.

**Interchanges 41 and 44:**

With all permits in place and final design complete, the Authority anticipates awarding the construction contract for this project in early 2013 with construction commencing by late spring and an anticipated completion in mid-2015. This project will provide northbound and southbound access to and from Jimmie Leeds Road by constructing a new Interchange 41 on the Garden State Parkway in Galloway Township, Atlantic County. It will also add two additional ramps at Interchange 44 to allow access to the Parkway to and from the south.

**Interchanges 9, 10 & 11:**

The construction contract for this long-awaited Parkway project is scheduled to be awarded in December 2012 with construction to commence in 2013 and anticipated completion in November 2015. Once complete these improvements will help reduce congestion and improve safety by eliminating the three traffic signals at Interchanges 9, 10 & 11 in Cape May County by providing a grade separated, full interchange at each intersection.

**Interchange 145:**

This project is currently under design and will replace the Central Avenue Bridge which will facilitate access by providing a second lane from Interchange 145 to the Parkway southbound. The authority anticipates awarding the construction contract for these planned improvements near the end of 2013.

**Interchange 105:**

This project will improve access to and from the Garden State Parkway at Interchange 105 by reconstructing the Parkway's ramp termini with the Route 36 and Hope Road intersection. The project will also include the construction of a southbound GSP outer roadway exit to Wayside Road providing more direct access to Route 18. The combined improvements will improve access to the planned redevelopment of Fort Monmouth. The Authority plans to award two construction contracts in early 2013 and construction will continue through the end of 2015.

**Interchange 14A:**

Approval to issue the Order for Professional Services (OPS) for final design and environmental permitting services for Turnpike Interchange 14A ramp network improvements was granted in September 2012. This project will include Toll Plaza improvements, as well as the reconstruction of the adjoining roadway network to improve operations and safety at Interchange 14A, located in the cities of Bayonne and Jersey City, New Jersey.

At this time, two construction contracts are anticipated to be awarded in 2014 with construction completion by the end of 2017. Based on the Initially Preferred Alternative developed during Preliminary Design, the total construction cost is estimated to be \$230 million.

## ***Facilities Program***

The Turnpike Authority's Capital Program also dedicates \$350 million in capital funds to a facilities program. These projects are designed to improve aging Authority facilities through the inspection, assessment and implementation of remedial measures as necessary to bring existing toll plaza buildings, maintenance buildings and State Police stations identified into compliance with current building codes and operational standards.

Under the Authority's facilities improvement program, four New Jersey State Police stations buildings will be replaced at the following locations:

On the New Jersey Turnpike:

|            |             |
|------------|-------------|
| Moorestown | MP 37.1 NB  |
| Newark     | MP 104.7 SB |

On the Garden State Parkway

|            |  |
|------------|--|
| Bass River | MP 52.8 (Median) (moving to Interchange 41, Galloway Township) |
| Bloomfield | MP 153.3 NB  |

The work on these barracks will be accomplished through three construction contracts with an estimated value of \$60 million and when complete these new stations will conform to current New Jersey State Police facilities as well as meeting current building codes.

The first construction contract, which will construct the Bloomfield Station on the Parkway is to be awarded in November 2012, with the intention to break ground in early 2013 and complete construction by April 2014.

The second construction contract will construct the Moorestown and Bass River stations. The Bass River station will be relocated to new Interchange 41 in Galloway Township. This contract is expected to be awarded in December 2012, with construction to begin in February 2013 with an estimated completion date of July 2014.

The third and final contract will construct the Newark Station and is expected to be awarded in early 2013 with an estimated completion by summer of 2014.

Also under the facilities improvements program the Authority anticipates awarding three design OPS' in the first quarter of 2013 for the rehabilitation of maintenance facilities on the New Jersey Turnpike and Garden State Parkway. It is anticipated that the design will be complete by the end of 2013 and the Authority expects to award the construction contracts in early 2014 with construction to be completed by the end of 2017.

## ***Integrated Technology Services***

As the New Jersey Turnpike Authority continues its roadway widening program, it recognizes the importance of technology in advancing both roadway safety and improving operating efficiency. The real-estate available for roadways is a finite resource and use of that real estate can be significantly enhanced through technological advances. To that end, a number of programs are in progress that leverage new and innovative technologies, including the implementation of new traffic management software for enhanced control of intelligent transportation devices (signs, traffic detection devices and cameras), computing and networking infrastructure upgrades, patron communication programs, and organizational improvements.

### **ORGANIZATIONAL IMPROVEMENTS**

As the Authority's roadways grow and technology advances, opportunities present themselves to reassess needs and resources. The Authority has begun to reform its technology oriented groups into a forward-looking service driven organization model, optimizing staff to address increasing technology requirements while containing costs. 2013 will arrive with this reconstituted team, the Integrated Technology Services Department, in place, addressing current requirements, and flexible enough to confidently face new challenges.

### **TRAFFIC MANAGEMENT SOFTWARE**

The Authority continues to progress toward its goal of implementing Advanced Traffic Management Software for its Traffic Operations Center. The Authority has completed extensive research regarding state-of-the-art traffic management software, collaborating with industry leaders and with program managers who have implemented such large scale control systems in Singapore, London, Stockholm, and Rio de Janeiro. In 2013, patrons will benefit from the implementation of a strong foundation for this Program that will collectively:

- provide timely and relevant guidance on appropriate intervention strategies to maximize smooth traffic flow and ease congestion;
- provide a feature-rich dashboard which contains key traffic related data;
- provide roadway device status and control of those devices; and
- utilize traffic flow data to provide accurate Travel Times.

This approach will combine a comprehensive suite of statistical models, advanced analytics and leading traffic simulation to provide off-line and real-time traffic management decision support in a scalable state-of-the-art framework. It will leverage the IBM Traffic Prediction Tool (TPT), which in live tests at the Authority, predicted Turnpike traffic conditions with accuracies of 96.2% for 30 minute predictions and 93.4% for 60 minute predictions.

Also in 2013, the Authority will continue to refine its choice of traffic measurement tools to determine the best mix of vehicle detection technology and third party data services required to serve traffic prediction, and new traffic management capabilities such as incident detection, response plan development, load balancing and travel time advisories.

### **COMPUTING AND INFRASTRUCTURE UPGRADES**

Support of the Authority's mission requires continual maintenance and updating of its data and communications infrastructure. Programs are underway to economically increase the capacity, speed and reliability of computing devices, the facilities that house and power them, and the networks that connect them. Older computers are replaced with newer, less expensive ones that are faster, more reliable, consume less energy and require less expensive environmental support. Industry standard replication and disaster recovery schemes are being implemented that ensure continuity of vital technology enabled services under the most stressful of situations such as widespread power-outages, hurricanes, or earthquakes. In 2013, the facilities that house and support distributed networking and computing equipment will undergo major upgrades that will improve reliability and reduce total cost of ownership. Older facilities will be rehabilitated and uninterruptable power sources will be put in place. A comprehensive program of security and environmental monitoring with instant notification capability will be instituted.

### **PATRON COMMUNICATIONS PROGRAM**

The Authority understands that patron communication is a vital part of its traffic management strategy. No longer is a static web page sufficient to assist the commuter in trip planning. To address this need, a Mobile App Strategy has been created which organizes all Authority apps under a consumer-driven framework to ensure that needs are identified and appropriate safety guidelines are maintained. The first app planned to be released is a hands-free, eyes-free smartphone app that will provide patrons with location sensitive active travel advisories from existing Authority and New Jersey Department of Transportation data feeds. 2013 will see a detailed evaluation of this app and resultant recommendations for other apps to enhance the motoring experience.

## ***Environmental Initiatives***

The Authority strives to serve the public in as efficient and environmentally responsible a manner as possible. Thus, the Authority's Maintenance Department has made the development of a Green Initiative Program a top priority as renewable energy projects conserve energy and promote a healthy environment.

The Authority is continually studying and piloting various environmentally friendly efforts including funding in 2013 for the State's "Green Corridor" initiative with capital funding dedicated to remediating and monitoring environmental contamination caused by petroleum products leaking from underground storage tanks and piping. These efforts relate to historical or past petroleum releases that are actively being investigated and remediated and/or monitored, and the Authority will continue to do so until such time that the contaminate levels are below NJ Department of Environmental Protection soil and/or groundwater quality standards. In the coming year the Authority will also continue to dedicate funds to the rehabilitation or replacement of non-functioning and substandard storm drainage systems.

As outlined in previous reports, the Authority opened a newly constructed bus and truck inspection facility on the Parkway in 2011. This facility enables State Police to conduct more efficient, full Level 1 inspections of trucks and buses that travel on the Parkway.

Similarly, in an effort to address New Jersey Department of Environmental Protection compliance requirements to minimize waste water discharge the Authority designed and constructed an automated vehicle wash facility and system for equipment and vehicle washing that uses a water reclamation system & minimizes waste water discharge. This facility is located at the Telegraph Hill maintenance facility and has been viewed by other state agencies as a model to use in building their own automated wash system.

In 2012 the Authority began the process of replacing the existing roadway lighting fixtures with light emitting diode (LED) fixtures that offer better color rendition on the roadway. As the first step in this process, the Authority has undertaken a plan to replace all roadway fixtures at Turnpike Interchange 13A and 15X with LED fixtures in 2013 and going forward will specify that all new roadway projects use LED fixtures. One of the greatest benefits of using LED fixtures is that the lights use a fraction of the energy required by the fixtures currently utilized – in some cases realizing an energy reduction savings between 55%-60% - and increase the life of the fixture from 3-5 years to 10-20 years. Additionally, the energy savings and reduced maintenance efforts are expected to result in a significant reduction in operating costs through a reduction in manpower, material and equipment as well as overall reduction in greenhouse gas emissions.

Moreover, the Authority has undertaken a pilot Solar Project in the Telegraph Hill South Overflow / Commuter Lot that will use solar power through the installation of a solar canopy parking structure to power the Holmdel Maintenance Yard and State Police barracks. The project is designed to produce up to 1.2 MWh per year, meeting all electrical requirements and will eliminate 913 metric tons of carbon from the air annually. As per Environmental Protection Agency guidelines, when completed, this solar project will be equivalent to removing between 180-250 cars from the road each year.

As reported last year pursuant to the statute ordering this report, and consistent to present day, the entire Garden State Parkway drainage infrastructure within the Barnegat Bay watershed is essentially being reconstructed as part of the Parkway widening and shoulder improvement project from milepost 83 to 100, therefore all of the Authority's detention basins within the Barnegat Bay watershed have either been newly constructed or will be reconstructed in the next several years.

Finally, in the summer of 2012, the Authority implemented a vegetation management and wildflower pilot program. The purpose of the pilot program was to manage vegetation within the Authority's right-of-way in a more efficient and environmentally friendly manner while preserving the natural beauty of the environment, promoting safety and protecting the roadway surface.

This past summer, the Authority Maintenance Department implemented a two-pronged approach that included the "no-mow" and wildflower pilot between mileposts 125.5 and 104 on the Parkway. In this area, maintenance crews limited the area of mowing to 16 feet from the edge of pavement and incorporated swaths of wildflowers in areas previously mowed. This pilot program demonstrated immediate and noticeable results including:

- ✓ 57% reduction in mowing acreage (2011 mowing acreage of pilot area is 453 acres; 2012 pilot program mowing acreage is 196 acres);
- ✓ hundreds of hours saved in manpower spent mowing thus enabling Maintenance management to reallocate that manpower to other maintenance activities along the roadway;
- ✓ significant reduction in fuel consumption (2011 fuel consumption – 1533 gallons; 2012 fuel consumption – 960 gallons) which benefits the Authority from a cost perspective and benefits the environment by reducing the carbon footprint and creating a habitat for migratory birds and butterflies; and
- ✓ an outpouring of positive feedback from motorists, who enjoyed the beauty of the wildflowers.

## ***Safety***

The New Jersey Turnpike Authority is a transportation agency but above that, the Authority is a customer service agency and the safety of its motorists, customers and employees is paramount. Safety is a core strategic value of the Authority and the #1 priority. Any project undertaken by the Authority requires incredible planning and coordination between the Authority's engineers, contractors and maintenance departments but most importantly, several of the on-going projects described elsewhere in this report contribute to increased safety of our roads for the patrons.

For example, one of the most significant safety-related projects in the Capital Program is the Authority's mainline shoulder improvement program that is designed to improve safety on a stretch of the Parkway between mileposts 83 and 100 that currently has reduced shoulder widths and substandard lane widths. In the late 1980's, the width of both the right and left shoulders on the Parkway were reduced to create a driving lane to provide additional capacity in an effort to meet then-traffic demands along various sections of the Parkway. However, the Authority has recently undertaken a mainline shoulder improvement project that will reconstruct the mainline roadway to provide right and left shoulder widths that meet current standards. When this project is complete, this entire section of roadway will have 12-foot wide shoulders. Having wider shoulders contributes to improved safety by allowing disabled vehicles to pull safely out of live traffic lanes, enabling ambulances, fire trucks and other emergency service vehicles to reach accident scenes more quickly, and they afford a greater margin of error to drivers whose vehicles for one reason or another leave the highway

The Authority's Capital Program also includes projects for shoulder reconstruction and clear zone restoration, guide rail and median barrier improvements, interchange improvements, and a sign replacement program as discussed elsewhere in this report. Additionally, the Authority has added rumble strips and raised pavement markers designed to increase driver awareness.

To enhance the education component of the Authority's safety program, the Authority continues to design and issue safety pamphlets to provide useful information for motorists regarding traffic laws, work zone signage and definitions, and other travel resources. These pamphlets have been made available in the service areas as brochures and tray-liners. Moreover, updates to the Authority's website that provide real-time information and travel resources for customers is an on-going initiative.

During the summer of 2012 the Authority also utilized various toll plaza bullnose signs for safety messages that served as a reminder to motorists as they drive through a toll that "ROAD SAFETY BEGINS WITH YOU" so put down the phone or make sure all passengers have their seat belt fastened.

The Authority has crafted an in-house Work-Zone Safety Committee and training program, and working with State Police will continue traffic enforcement programs like the provisional driver incident notification and truck or bus violation notifications and inspections. Additionally, in 2012 the Authority consolidated two separate Employee Safety Committees (one for each roadway) into a consolidated, comprehensive New Jersey Turnpike Authority Employee Safety Committee that meets monthly to discuss and address safety-related topics.

In the last year the Authority implemented a "Safety Suggestion Box" for employees to submit their safety-related ideas. The suggestions are submitted via email to a dedicated account that is regularly monitored and ideas are vetted for feasibility.

Perhaps, the most challenging aspect of safety is the education component. How can the Authority best educate motorists on the dangers of distracted or impaired driving and the difference between life and death in a split second? Distracted driving is on the rise and it is an area of education programming the Authority aims to address in 2013.

The above mentioned safety-related efforts will continue in 2013 and additional safety programming for the motoring public has been developed in the last quarter of 2012 for use in 2013. This education program is being developed in an effort to further decrease the number of accidents and fatalities on the Turnpike and Parkway roadways.

## ***Capital Investment Plan Funding Requirements***

The New Jersey Turnpike Authority's Capital Investment Plan includes all sources of funds, the majority of which are major capital projects that are financed through bonds, and includes essential system preservation, maintenance and operating requirements that are financed primarily through toll revenues.

The list below demonstrates the current proposed funding amounts for the Authority's \$7 billion Capital Program Construction Fund and additional project funds which are financed through other Authority revenue sources and are included as part of the overall Capital Investment Plan. *\*\*Projects included in this plan are subject to anticipated funding.*

### **Capital Investment Plan Funding Requirements**

| <b>Fund</b>                  | <b>Estimated Funding Requirements (2013 Dollars)</b> |
|------------------------------|--|
| Construction Fund            | \$7,000,000,000*                                     |
| Supplemental Capital Fund    | \$355,000,000**                                      |
| Maintenance Reserve Fund     | \$835,000,000  |
| Special Project Reserve Fund | \$425,000,000  |
| Total                        | \$8,615,000,000                                      |

\* Includes New Bond Money

\*\* Does not include any contributions made to the State.

### **Defining the Capital Investment Program Funds**

**Construction Fund** - bond issue for large capital construction projects (Turnpike Revenue Bonds). These projects are contained in the Authority's \$7 billion Capital Program and include major reconstruction and maintenance of roads, bridges and facilities. Construction Fund projects improve operations, expand capacity, and in many cases, create economic development opportunities. Projects funded through the Construction Fund are defined at the time the bonds are issued (life-to-date budget).

**General Reserve Fund/Supplemental Capital** - amounts in this fund are used for capital projects not funded by bond proceeds, small- to medium-sized pay-as-you-go projects.

**Maintenance Reserve Fund** – annual operating revenue funds to preserve the toll network system’s roadways and bridges to certain standards – major or cyclical maintenance – including pavement resurfacing and restoration, and bridge replacement, repairs, or reconstruction. Projects to be funded through the Maintenance Reserve Fund are recommended annually by the Chief Engineer with the concurrence of the General Consulting Engineer and approved by the Executive Director and Board of Commissioners.

**Special Project Reserve Fund** – annual operating revenue funds applied to the cost of all types of projects that are not considered as ordinary or routine items such as: preliminary planning and studies; safety improvements; repairs and renovation of buildings and other facilities; maintaining equipment and vehicle fleet; and improvements in administrative, tolls and communication systems. Projects to be considered for funding through the Special Project Reserve Fund are submitted by the department directors on an annual basis. Funding availability is confirmed by the Finance Department prior to forwarding the summary of projects to the Executive Director for consideration. The final list of projects to be funded is determined by the Executive Director, and is presented to the Board of Commissioners for approval.

### ***New Jersey Turnpike Authority Capital Budget Projects***

#### **Maintenance Reserve Fund**

|                           |                  |
|---------------------------|------------------|
| Bridge Repairs            | \$435,000        |
| Resurfacing               | \$400,000        |
| <b>10 Year Projection</b> | <b>\$835,000</b> |

#### **Special Project Reserve Fund**

|                           |                  |
|---------------------------|------------------|
| Environmental             | \$50,000         |
| Technology Improvements   | \$60,000         |
| Facility Improvements     | \$30,000         |
| Fleet                     | \$90,000         |
| Roadway Improvements      | \$170,000        |
| Other                     | \$25,000         |
| <b>10 Year Projection</b> | <b>\$425,000</b> |

#### **Supplemental Capital Fund**

|                                  |                  |
|----------------------------------|------------------|
| Facility Improvements            | \$45,000         |
| Technology Improvements          | \$130,000        |
| Fleet                            | \$60,000         |
| Extraordinary Snow Removal Costs | \$60,000         |
| Roadway Improvements             | \$45,000         |
| Other                            | \$15,000         |
| <b>10 Year Projection</b>        | <b>\$355,000</b> |