

2nd Triannual Meeting
August 6, 2025

NEW JERSEY DEPARTMENT OF TRANSPORTATION



Welcome

Amanda Gendek

Deputy Director
Statewide Planning



Feature Presentation

Overcoming Challenges - Recruiting, Developing and Maintaining a Workforce to Meet Current and Future Highway Construction Needs

Vicki Tilghman-Ansley

Civil Rights & Affirmative Action



FHWA Updates

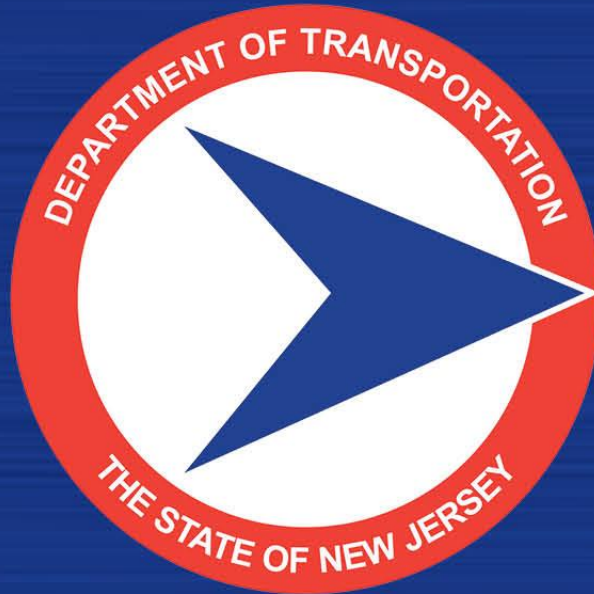


Christopher Paige

Innovation Coordinator & Community Planner

FHWA, NJ Division Office

Mentimeter Engagement Activity Summary



Presented by Giri Venkiteela, BRIIT
August 6, 2025

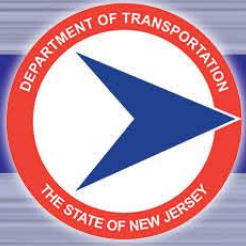
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Survey on Innovation

Objective: To explore STIC members

- Perceptions,
- Initiatives,
- Challenges,
- Support requests, and
- Notable projects related to innovation.



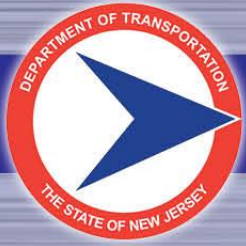
Perceptions of Innovation

- **Key Themes:**

- Creativity and thinking outside the box
- Efficiency and progress
- Embracing change and new technology

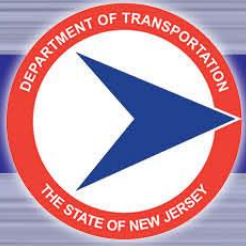
- **Quotes/Keywords:**

- "Risk-taking," "enhancing existing systems," "new solutions"



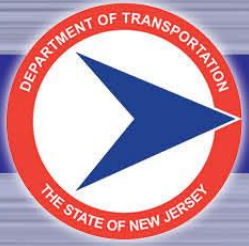
Ongoing Initiatives

- **Highlights of Current Projects:**
 - AI integration and smart vehicle testing
 - Electric vehicle infrastructure
 - Weather Savvy Pilot and automated shuttle deployment
- **Focus Areas:**
 - Safety, efficiency, sustainability



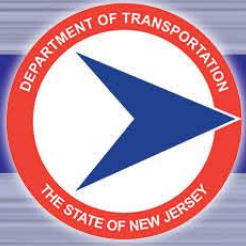
Challenges in Implementing Innovations

- **Common Challenges:**
 - Organizational silos and siloed perspectives
 - Lack of funding and resources
 - Resistance to change
- **Additional Issues:**
 - Fear of risk, IT challenges



Support Mechanisms by NJ STIC

- **Suggestions for Support:**
 - Foster a culture of innovation
 - Advocate for pilot projects and provide funding
 - Facilitate communication and collaboration
- **Additional Recommendations:**
 - Engage global experts and academia



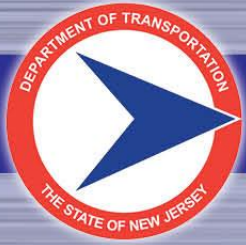
Notable Innovations in NJ

- **Key Innovations to Share:**
 - Automated enforcement options
 - Green infrastructure projects
 - AI in transportation
- **Emphasis:**
 - Safety, efficiency, environmental management



Conclusions

- **Summary:** The survey highlights a strong interest in leveraging innovation to enhance safety, efficiency, and sustainability.
- **Call to Action:** STIC will incorporate suggestions.



Core Innovation Area Team Leads

SAFETY

NJDOT – Jeevanjot Singh
FHWA – Alan Huff

PLANNING & ENVIRONMENT

NJDOT – Simon Nwachukwu
FHWA – Christopher Paige

INFRASTRUCTURE PRESERVATION

NJDOT – Bob Signora
FHWA – Paul Cardie

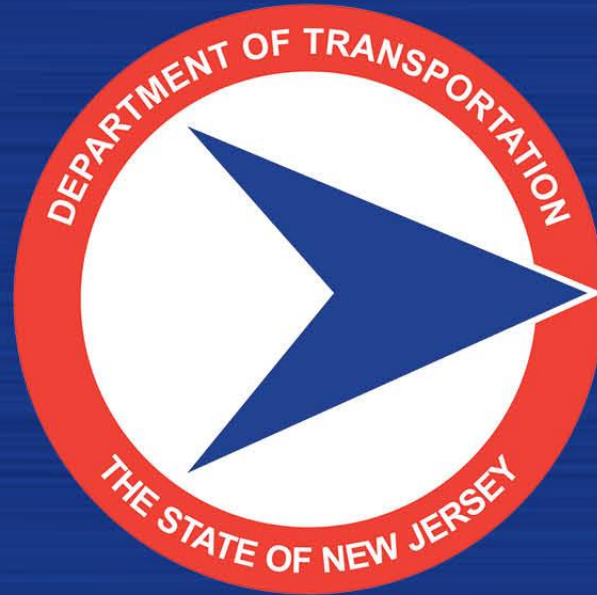
MOBILITY & OPERATIONS

NJDOT – Vandana Mathur
FHWA – Ek Phomsavath

ORGANIZATIONAL SUPPORT & IMPROVEMENT

NJDOT – Kristal Walker
FHWA – Christopher Paige

CIA Team Updates: Safety



Presented by Jeevanjot Singh & Alan Huff
August 6, 2025

NEW JERSEY DEPARTMENT OF TRANSPORTATION



Pedestrian Scale Lighting Research & Guide

- NJDOT Bicycle and Pedestrian Resource Center
 - At Voorhees Transportation Center at Rutgers
 - Partnered with Rowan University
- Provide guidance to local, county, state, regional planners
 - Summary of best practices, technical considerations, and recommendations for safe design of pedestrian-scale lighting
 - Guidance to planners on identifying, scoping, and assessing safety and community needs for pedestrian-scale lighting projects
 - Guidance on streetlight jurisdiction and working with utilities
- **Final Deliverable: Pedestrian Scale Lighting Resource for Planners**
 - **Status: Draft under revisions**



RUTGERS-NEW BRUNSWICK
Edward J. Bloustein School
of Planning and Public Policy
Alan M. Voorhees Transportation Center



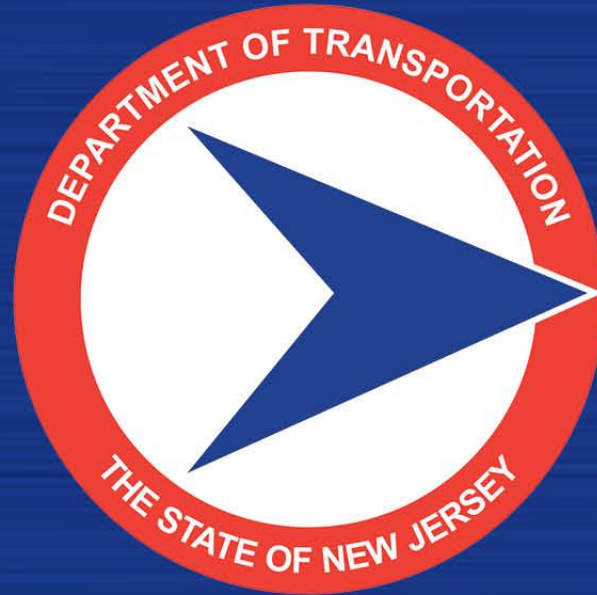


Nighttime Visibility for Safety



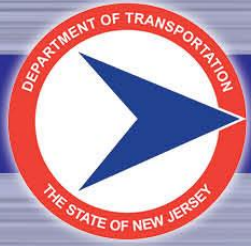
- In collaboration with other NJDOT review units, Division of Traffic Engineering is finalizing the details for traffic signal poles and mast arms at signalized intersection installations
- Includes backplates with retroreflective tape on signal indications

CIA Team Updates: Planning & Environment



Presented by Sushant Darji & Simon Nwachukwu
August 06, 2025

NEW JERSEY DEPARTMENT OF TRANSPORTATION



Integrated Strategic Overviews

Overview: Congestion Mitigation Air Quality (CMAQ)
Carbon Reduction Program(CRP)
Core Innovative Area

Introduction

- **Purpose:** Present a unified overview of NJDOT's strategic initiatives in transportation, focusing on CMAQ, CRP, and Core Innovation Areas in Planning & Environment.
- **Objectives:** Align with state and federal climate action goals to drive transformational change, enhance climate resilience, and promote sustainability in New Jersey's transportation infrastructure.



Strategic Programs – CMAQ & CRP

- **CMAQ Program:**

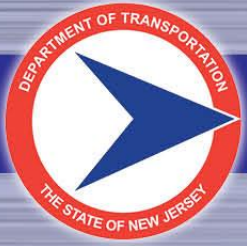
- **Objective:** Fund projects to mitigate congestion, reduce emissions, and improve air quality in non-attainment areas.
- **Target Development:** Set quantifiable targets for NO_x, PM_{2.5}, VOC, and CO emissions, guiding project selection and funding.
- **Project Types:** ITS, intersection modernization, public transit expansion, and low-emission vehicle incentives.
- **Expected Outcomes:** Significant reductions in air pollutants and greenhouse gases



Strategic Programs – CMAQ & CRP

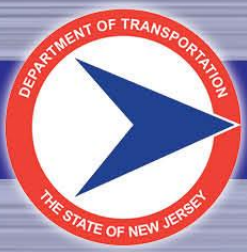
- **CRP Program:**

- **Objective:** Systematically reduce carbon emissions in transportation through sustainable technologies.
- **Implementation Status:** Transitioned from planning to full-scale implementation.
- **Strategic Advancements:** Battery-electric buses, complete streets initiatives, green fleet transitions.
- **Impact Assessment:** Achieving CO reductions through electrification and mode shifts



Performance Metrics & Stakeholder Collaborations

- **Quantifying Success:** Use data-driven approaches for emission reduction tracking, congestion relief metrics, and GHG benchmarks.
- **Key Performance Indicators (KPIs):** NO_x, PM_{2.5}, VOC, CO, CO₂ reductions; increased transit ridership; improved air quality.
- **Geospatial Analysis:** Assess spatial effectiveness to direct investments where needed most.
- **Stakeholder Engagement:** Collaborate with MPOs, local municipalities, transit agencies, and private sector partners for coordinated delivery.
- **Scalable Funding Mechanisms:** Leverage diverse funding streams for scalability and sustainability



Next Steps & Strategic Vision

- **Scaling Initiatives:**
 - **CMAQ Projects:** Expand ITS, transit services, and promote low-emission vehicles.
 - **CRP-Backed Initiatives:** Accelerate expansion of electric public transit options.
 - **Technology Integration:** Implement AI-based traffic management systems.
- **Policy Alignment & Support:**
 - **Align Policies:** Ensure state transportation policies meet federal goals.
 - **Legislative Action:** Secure sustained funding emphasizing long-term benefits.
- **Call to Action:** Foster collaboration among public agencies, industry leaders, and research institutions to drive transformative changes.



Core Innovation Areas Planning & Environment

- **Introduction to Core Innovation Areas:**
 - **Purpose:** Overview of ongoing and planned initiatives in Planning & Environment.
 - **Stakeholders:** MPOs, FHWA, NJ Transit, Port Authority of NY/NJ.
- **Key Innovation Areas:**
 - **Electrification & Zero-Emission Vehicles:** Support state fleet and charging infrastructure expansion.
 - **Mass Transit & Active Transportation:** Promote public transport and active modes to reduce SOV use.
 - **Smart Traffic Management:** Optimize flow and reduce emissions.
 - **Sustainable Construction:** Use recycled materials and low-emission equipment



Example: Program and Outcome

The "It Pay\$ to Plug In" grant program, initiated in New Jersey in 2024.

The program is part of the CMAQ initiatives, focusing on EV charging stations rather than replacing diesel equipment, which is more effective in cutting vehicle emissions.

Benefits of the Program:

- Reduces Vehicle Emissions:

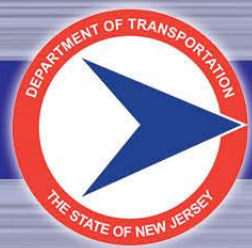
- Promotes electric vehicles over gasoline-powered ones.

- Reduces greenhouse gases and pollutants.

Encourages EV Adoption:

- Aligns with New Jersey's efforts to lower emissions

- Increases the accessibility and convenience of electric vehicles for residents, businesses, and government entities.



Example: Program and Outcome

Environmental Impacts

Reduction in Greenhouse Gas Emissions:

- Supports cleaner transportation options.

Air Quality Improvement:

- Zero tailpipe emissions lead to better air quality.

Encouragement of Renewable Energy Use:

- Potential for increased integration with renewable sources.

Support for State Emission Goals:

- Aligns with New Jersey's efforts to lower emissions.



Conclusion

Recap: Review strategic initiatives and innovation areas.

Importance of Collaboration: Highlight ongoing collaboration and transparency to achieve decarbonization goals.

Next Steps: Encourage stakeholder engagement and active participation in future projects.

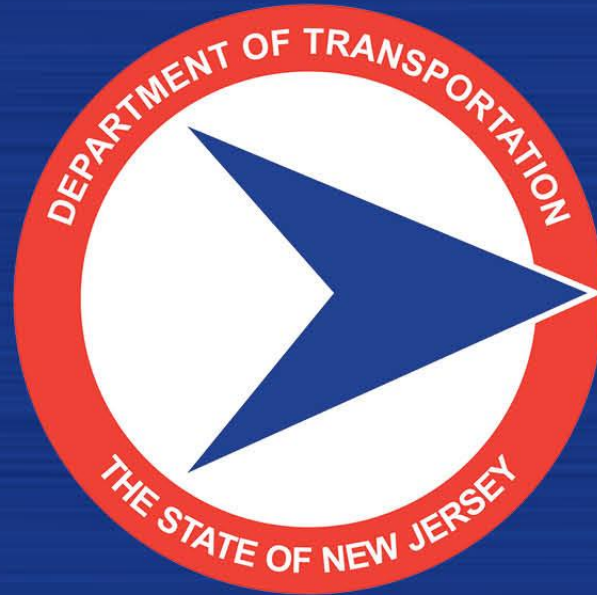


Contact

For any inquiries, feel free to reach out to us via the email addresses below. We are here to assist with all your questions:

- Simon Nwachukwu: Simon.Nwachukwu@dot.nj.gov
- Hirenkumar Joshi : Hirenkumar.Joshi@dot.nj.gov
- Sushant Darji: Sushant.Darji@dot.nj.gov

CIA Team Updates: Infrastructure Preservation



Presented by Bob Signora
August 6, 2025

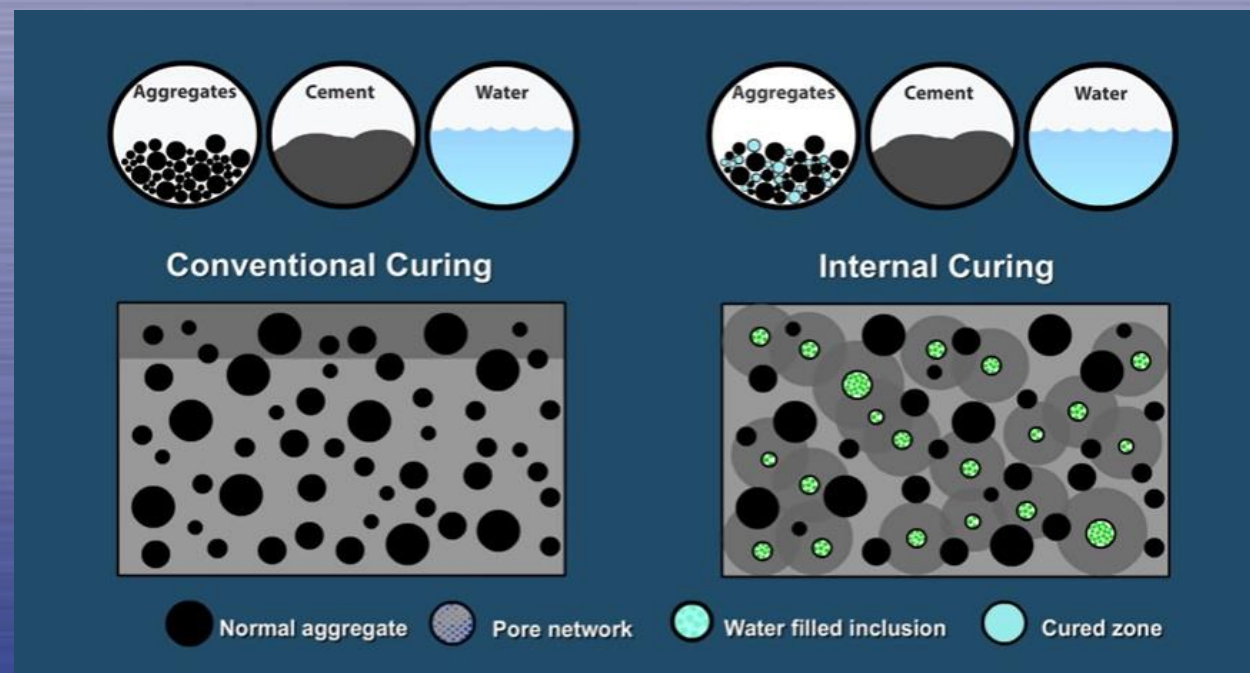
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EDC-7 EPIC²

Innovation Purpose:

To implement the use of internally cured concrete to reduce shrinkage cracking and achieve long-term performance in concrete bridges, roads and repairs.

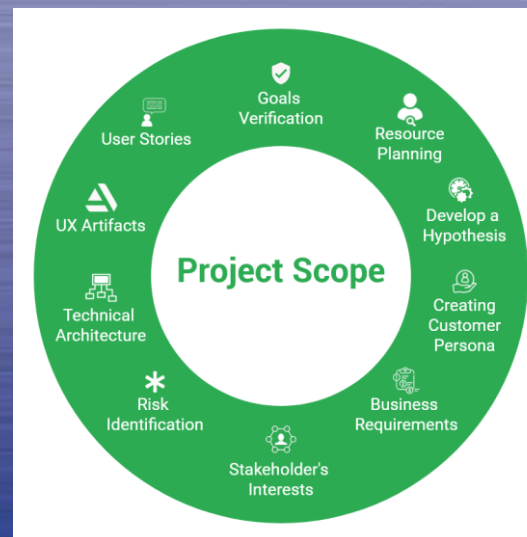


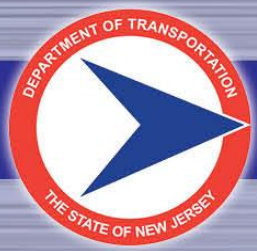


EDC-7 EPIC²

Accomplished since last update:

- Centrifuge apparatus purchased and received
- Additional projects scoped for the candidate bridges list





EDC-7 EPIC²

Currently Working on:

- FHWA webinar (Implementation of internal curing)
- Test slab casting of the first mix in the 1st pilot project
- Distribution & training of centrifuge apparatus to regional materials offices
- Final Design Submission (candidate bridges - pilot project program)





EDC-7 EPIC²

Next Quarter:

- Continue engagement with concrete suppliers
- Update the HPIC Specifications
- Provide Training Workshops
 - internal curing standards and procedures
- Webinar for EPIC on NJDT implementation of internal curing.



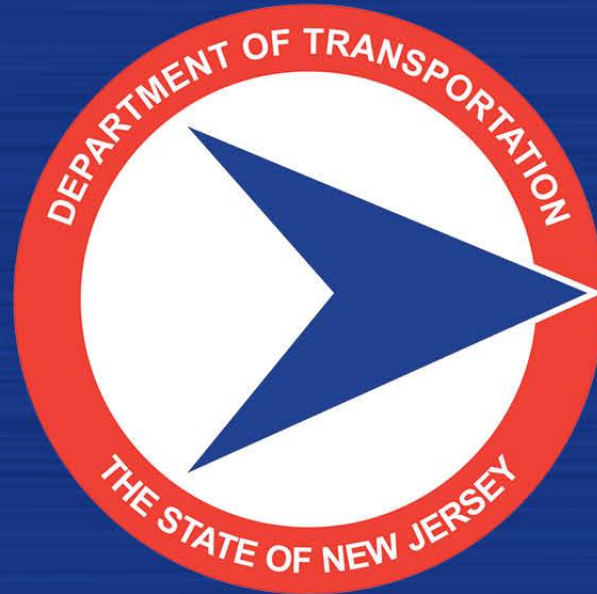


EDC-7 EPIC²

Questions?



CIA Team Updates: Transportation Mobility



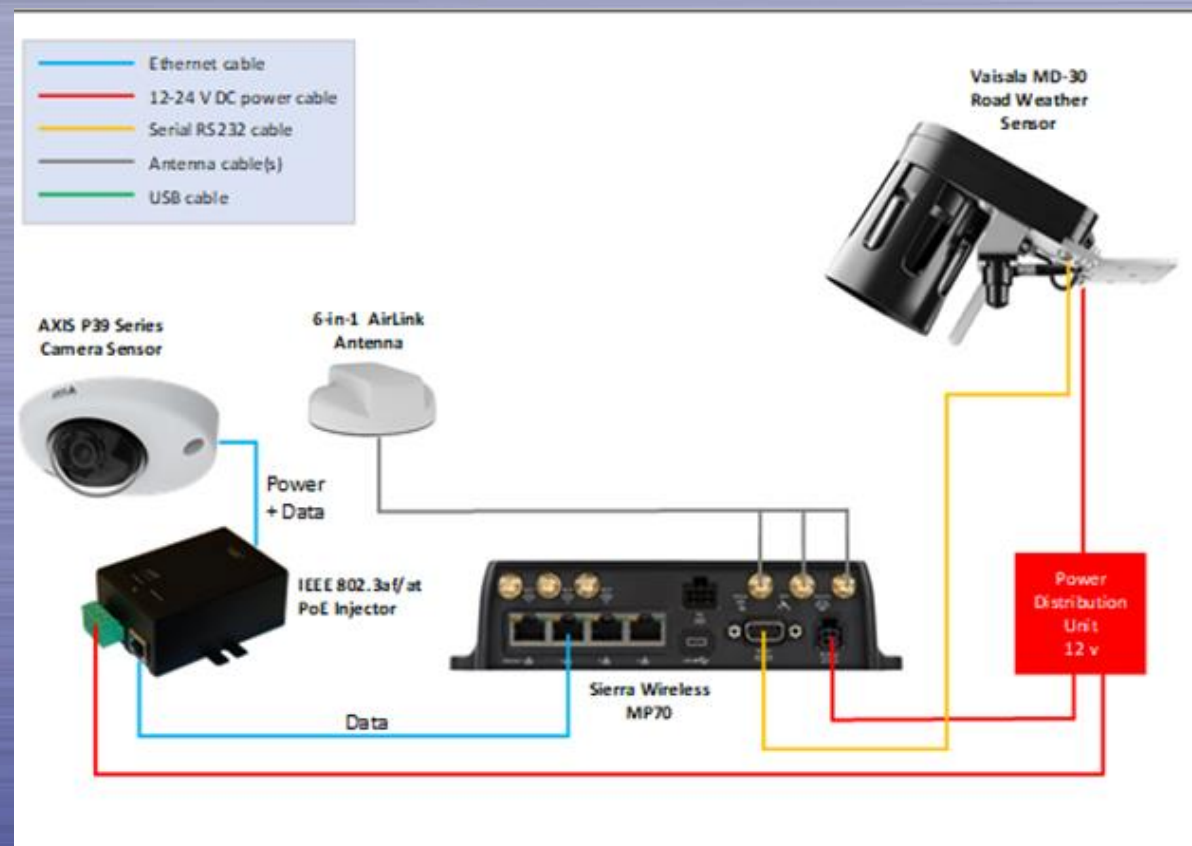
Presented by Tom Murphy
August 6, 2025

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WEATHER- SAVVY IMPROVEMENTS

- The Weather-Savvy system has been rewired to bypass the in-cab tablet in two different ways
- Previous issues with the tablet locking or getting turned off
- Sierra Wireless router now plays a larger role





TRUCK PARKING PILOT



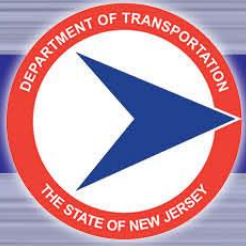
- Data gathered from cameras, remote traffic microwave sensors, and in-pavement micro radar sensors (a.k.a., Pucks) is visible on the web portal.
- Installed a portable DMS signs approx. 5 miles from Harding on I-287 and I-78 to alert truckers to the number of available spots
- Next Steps:
 - Installing at Knowlton Rest Area on I-80



STREETLIGHT

- Streetlight InSight is a data web platform that harnesses connected devices and IoT data to measure vehicles, transit, bike, and foot traffic virtually anywhere.
- What can streetlight do:
 - Create analysis
 - Deliver metrics from browser
 - All roads in NJ are accessible
 - Can choose analytic types





iNET ATMS

SYSTEM OVERVIEW

- The iNET® ATMS has a windowed browser interface which allows multiple sources of information from various systems and hardware to be open and to be accessible at the same time.



Modules Include:

- Map
- CCTV
- DMS
- Event Management
- Travel Times
- Decision Support Plan
- Response Plans
- More to Come



iNET ATMS

WHO IS USING THE ATMS?

- iNET® will be utilized by:
 - Statewide Traffic Management Center (STMC)
 - Mobility Operations Center – South (MOC-S)
 - Central Dispatch Unit (CDU)
 - Incident Management Response Team (IMRT)
 - Safety Service Patrol (SSP) Team
 - Law Enforcement Coordination / Collaboration





iNET ATMS



On April 29, 2025, at noon iNET® went live



On-site and virtual training started for operators in the summer of 2024 and continued through the launch date



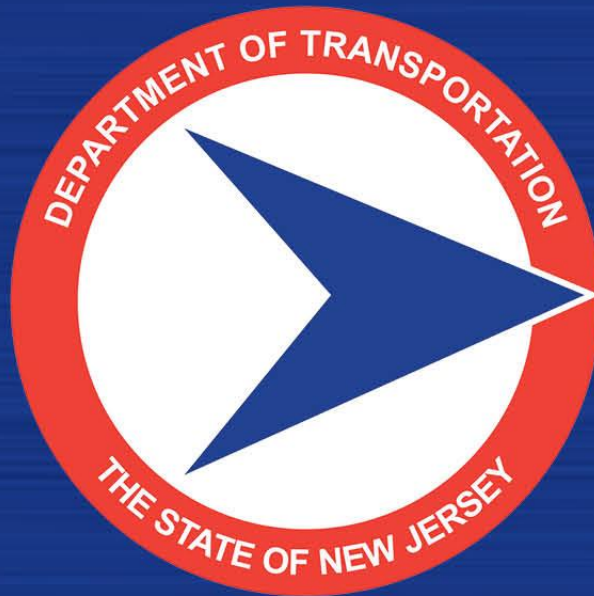
This is phase 1 of a multi phased launch with essential modules live on day one with more to be added over the coming years



Deployed in MS Azure cloud with the review and approval of the NJ OIT and NJ Office of Homeland Security

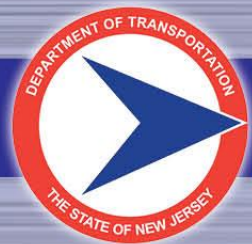


CIA Team Updates: Organizational Support & Improvement



Presented by Kristal Walker
August 6, 2025

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Implementation Plans

Development Stage Updates:



Funding:

Although funding approvals were confirmed by FHWA , the release of additional funding has been limited due to the pause in funding and other constraints.

It has been recommended that we procure professional (training) services internally through our Division of Procurement and/or through the NJ Department of Labor and Workforce Development (NJDOL).

Partnerships

We will be partnering with the NJDOL's Workforce Development Services.

Advantages: NJDOL's business includes procuring training services and preparing individuals for apprenticeship programs; and can customize transportation related training to include counseling and pre-screening services for NJDOT. NOTE: The Office of Federal Contract Compliance Programs (OFCCP) no longer has oversight of transportation mega projects; therefore, NJDOT will be working independently on outreach and other related activities.



Contractor Compliance unit collaboration efforts continues :

- The last Construction Contracting Industry meeting was held in June 2025. Topics continue to focus on:
 - ✓ Disadvantage Businesses
 - ✓ Unions & Apprenticeship Programs
 - ✓ Aging of the workforce and union members
 - ✓ Methodologies to increase membership: Spreading awareness on the opportunities for employment and advancement with the highway construction industry
 - ✓ Hosting a dual open house for individuals interested in working on NJDOT's construction projects internally with NJDOT or externally with NJDOT's construction contractors.
- The next scheduled Construction Contracting Industry meeting will be held later this month to discuss the Pilot Program.



Thank you!



Feature Presentation

Overcoming Challenges - Recruiting, Developing and Maintaining a Workforce to Meet Current and Future Highway Construction Needs

Vicki Tilghman-Ansley

Civil Rights & Affirmative Action

Overcoming Challenges – Recruiting, Developing and Maintaining a Workforce to Meet Current and Future Highway Construction Needs



History of EEO, Workforce Development and Training Programs

- Title VII of the Civil Rights Act of 1964
- Federal Aid Highway Act of 1968
- Title IX of the Education Amendments of 1972
- Federal Highway Administration regulations (23 CFR Part 230) introduced in 1975



NJDOT On the Job Training (OJT) Program

- The OJT Program was born out of the Federal Aid Highway Act of 1968
- We assess upcoming projects to determine if they can support training goals
- We assign training goals if applicable based on the work to be performed, estimated number of days the project will be active
- Successful implementation of the OJT Program helps develop a competent and diverse workforce to meet current and future hiring needs



OJT Supportive Services Programs

The goal of supportive services is to support the OJT programs

- **Prepare individuals for work in highway construction and union apprenticeship programs such as funding pre-apprenticeship training programs**
- **Support contractors in assisting with recruiting, counseling and other remedial training**
- **Support mentorships and other initiatives that provide ongoing support and guidance during and after training**
- **One of the main obstacles we have experienced is support from the unions (getting individuals into the union apprenticeship programs)**

Challenges!

- New Jersey is a highly unionized state, and our construction projects are primarily staffed by union workers
- Unions provoked a major change in the OJT program several years after the program began
- By and large unions provide the trainees required to fulfill the training goal requirements on our highway projects
- Contractors compete amongst themselves for individuals to meet their workforce and OJT requirements – Labor Shortages

Challenges !

- Historically, heavy highway union memberships have been nonminority male dominated, except for the laborers' unions
- Aging Workforce and Declining Interest in Construction Trades
- Training, Preparation, and Skills Gaps
- Highway Construction is Different than Vertical Construction
- Competition, Retention, Entry Level Pay Rates/Salaries

Overcoming Challenges Through Partnerships

- **Building partnerships and agreements with heavy highway construction contractors and their unions**
- **Partnering with the NJ Department of Labor and Workforce Development for Pre-apprenticeship and Apprenticeship Training**
- **Identifying and engaging with other training providers and exploring/identifying opportunities to coordinate training through community colleges, vocational and trade schools**
- **Developing relationships with community-based non-profits serving women, minorities, and disadvantaged/at-risk populations to help provide and facilitate information, resources, guidance, direction and job readiness support**

Overcoming Challenges

Information

- Develop feedback, score cards, reporting and tracking systems to record and track the success of participants in external pre-apprenticeship, apprenticeship and internal/external OJT programs
- Establish a funding source to provide supportive services and/or stipends to increase training program success
- Develop a website dedicated to opportunities and benefits working in the highway construction trades
- Hosting construction career days/job fairs for both the internal and external workforces; and targeted workshops specific to women, minorities, at-risk populations and others interested in pursuing highway related work with NJDOT and/or our construction contractors
- Engage professional services (consultants) to provide outreach, recruitment, screening, one-on-one interviews, soft/life skills training and help develop and support career days, job fairs, workshops and other services.

Partnerships

- The Construction Industry Advancement Program of NJ
- Utility & Transportation Contractors Association of NJ
- Associated General Contractors of NJ
- NJ Construction and General Laborers Local
- NJ Youth Corps
- Associations for Women in Construction
- Community Development Corporations (CDC)
- NJ's One-Stop Career Centers
- Community Based Organizations & Advocacy Groups
- State Workforce Boards



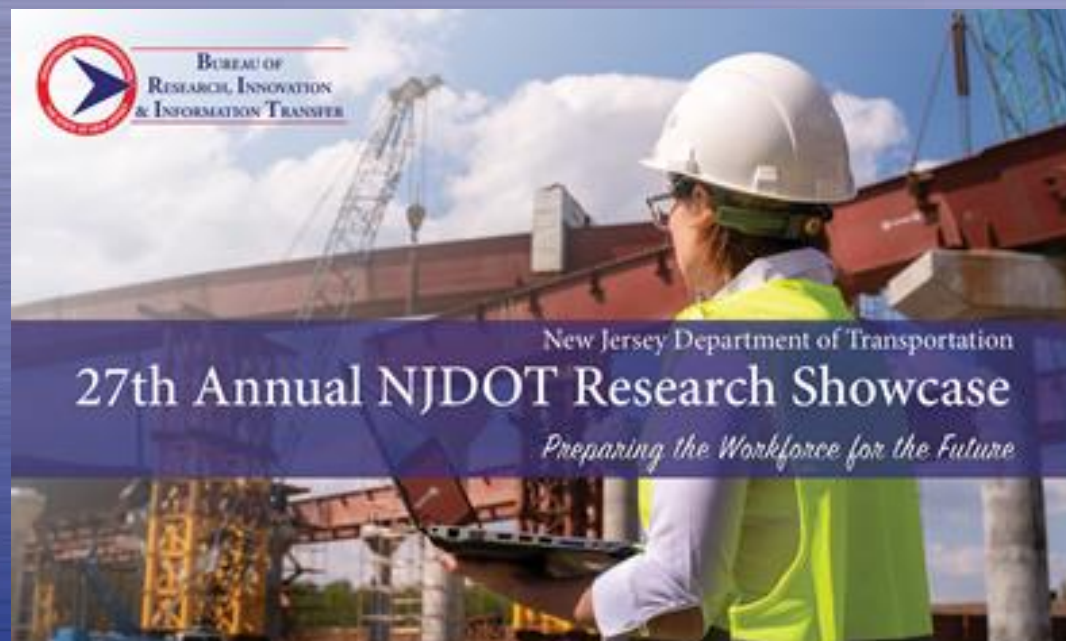
Reminders & Announcements

Save the Date!

27th Annual NJDOT Research Showcase

Date: October 29, 2025

Time: 8:30 AM – 3:00 PM





Submit your research or innovative idea!

<https://www.njdottechtransfer.net/got-an-idea/>

Requests for Proposals

Research
Spotlight

Research Spotlight

Annual Implementation
Reports >

New Technology
Evaluations

**Got an Innovative Idea that could help improve
transportation in New Jersey?**

SHARE YOUR IDEAS WITH US!

Research
Ideas

Innovation
Ideas

Market Ready
Innovations

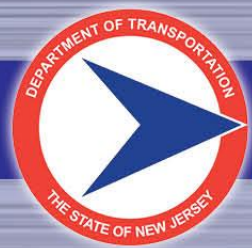


Next Meeting

NJ STIC 2025 3rd Triannual Meeting – December 10th 10:00am - 12:00pm

NEXT CIA TEAM
FEATURE PRESENTATION

MOBILITY & OPERATIONS



Thank you