CIA Team Updates: Strategic Implementation of CMAQ & CRP

Driving Innovation and Emission Reduction in New Jersey's Transportation Sector

Presented by Simon Nwachukwu

April 30, 2025

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Strategic Overview – CMAQ & CRP

- **Congestion Mitigation and Air Quality Improvement Program (CMAQ):** A federally administered program designed to fund projects that mitigate congestion, reduce emissions, and improve air quality in designated non-attainment areas. It is instrumental in addressing the interrelated challenges of traffic congestion and air pollution.

- **Carbon Reduction Program (CRP):** A targeted initiative aimed at systematically reducing carbon emissions in the transportation sector through the deployment of sustainable technologies and low-carbon transportation solutions.

- **NJDOT's Mandate:** NJDOT is strategically aligning both the CMAQ and CRP program with state and federal climate action goals. Our objective is to leverage the program to not only meet regulatory mandates but to drive transformational change in New Jersey's transportation infrastructure, advancing climate resilience and sustainability.

CMAQ – Target Development & New Project Approvals

- **CMAQ Target Development:** The CMAQ program has developed specific, quantifiable emissions reduction targets, which guide the identification, selection, and funding of eligible projects. These targets are aligned with federal air quality standards and state-level sustainability initiatives, with a focus on reducing NOx, PM2.5, VOC, and CO emissions.

- **Active Project Approval Process:** NJDOT is actively approving new projects based on their alignment with CMAQ's defined targets. These projects must demonstrate their potential to significantly reduce congestion, mitigate environmental impacts, and advance the adoption of low-emission technologies.

CMAQ – Target Development & New Project Approvals

➢ **Project Types:**

- Intelligent Transportation Systems (ITS) for real-time traffic management and congestion alleviation.
- Intersection modernization for improved traffic flow and reduced vehicle idling.
- Public transit expansion to promote multimodal transportation and reduce single-occupancy vehicle use.
- Low-emission vehicle incentives to accelerate the adoption of zero-emission transportation options.
- Expected Outcomes: Projects funded under CMAQ are expected to lead to reductions in air pollutants and greenhouse gas emissions, specifically targeting high-priority non-attainment areas.

CRP – Full-Scale Implementation and Achievement

- **Current Implementation Status:** The CRP has successfully transitioned from planning to full-scale implementation.

- **Key Strategic Advancements:**
  - Deployment of battery-electric buses in urban transit systems, contributing to a significant reduction in CO emissions.
  - Development of complete streets initiatives designed to enhance pedestrian and cycling infrastructure, thereby promoting active transportation and reducing car dependency.
  - Partnerships with municipalities for the transition to green fleets and the adoption of alternative fuels

- **Impact Assessment:**
  - The program is delivering significant reductions in CO emissions through the electrification of transport modes, mode shifts from single-occupancy vehicles to public transit, and the increased use of zero-emission vehicles.

Performance Metrics & Stakeholder Collaboration

- **Quantifying Program Success:** A robust, data-driven approach is used to evaluate the effectiveness of both CMAQ and CRP projects. This includes quantitative emission reduction tracking, congestion relief metrics, and GHG reduction benchmarks.
  - **Key Performance Indicators (KPIs) include:**
    - Reductions in NOx, PM2.5, VOC, and CO and CO2
    - Increased transit ridership and modal shift from single-occupancy vehicles.
    - Improved air quality in non-attainment areas.
- **Geospatial Analysis:** Utilization of geospatial tools to assess the spatial effectiveness of projects in targeted regions, ensuring that investments are directed toward areas with the greatest need.
- **Stakeholder Engagement:** NJDOT continues to collaborate with Metropolitan Planning Organizations (MPOs), local municipalities, transit agencies, and the private sector to ensure coordinated project delivery and stakeholder buy-in. Strong partnerships with technology firms will facilitate the integration of smart infrastructure.
- **Scalable Funding Mechanisms:** Leveraging federal, state, and local funding streams to ensure project scalability and financial sustainability over the long term.

Next Steps & Strategic Vision

- **Scaling Sustainable Mobility Initiatives:**
  - Expanding CMAQ-funded projects such as ITS, transit service expansion, and the promotion of low-emission vehicles.
  - Accelerating CRP-backed CMAQ projects, including the expansion of electric public transit options.
  - Integration of AI-based traffic management systems to further optimize traffic flow, reduce congestion, and lower emissions.
- **Policy Alignment & Legislative Support:**
  - Ensuring alignment of state transportation policies with federal emission reduction goals and sustainability targets.
  - Pursuing legislative action to secure sustained funding for sustainable mobility projects, with an emphasis on long-term environmental and economic benefits.
- **Call to Action:** Continued collaboration among public agencies, industry leaders, and research institutions is essential to drive transformative change in New Jersey's transportation sector, ensuring a sustainable and resilient future.

Thank you !

Contact:

Simon Nwachukwu – simon.nwachukwu@dot.nj.gov

Sushant A. Darji – Sushant.Darji@dot.nj.gov