NEW JERSEY ITS ARCHITECTURE
THE CONNECTED CORRIDOR
(Versions 2.0)

Metropolitan Mobility Network/ITS Group Meeting,
10:00 AM
NYMTC Office, 25 Beaver Street, NY, NY 10004
The Connected Corridor Timeline

1998: TEA-21 Legislation
2013: NJ TSMO – Capability Maturity Self-Assessment
2016: NJ TSMO – Capability Maturity Re-Assessment
2018: Sustainable NJ TSMO

2005: NJ ITS Architecture
2014: NJ ITS Architecture Update
Version 1.0

2018: NJ ITS Architecture Update
Version 2.0

Source: TCC v1.0 & WSP

IMPROVED TSM&O EFFECTIVENESS
The Connected Corridor, Version 2.0

Executive Summary

Chapters
1. Institutional Perspective
2. Operational Perspective
3. Technical Perspective
4. Use and Maintenance Process
5. Recommendations for Assessing Reliability Measures in Support of the NJ ITS/TSMO Project Pipeline
6. Moving Forward
FHWA Capability Maturity Model Framework for Systems Maturity

**Most Agencies Today**
- **Performed** (LEVEL 1)
  - Activities & relationships ad hoc
  - Champion-driven

- **Managed** (LEVEL 2)
  - Processes developing
  - Staff training
  - Limited accountability

- **Integrated** (LEVEL 3)
  - Process documented
  - Performance measured
  - Organization/partners aligned
  - Program budgeted

**Goal for the Future**

- **Optimized** (LEVEL 4)
  - Performance-based improvement
  - Formal program
  - Formal partnerships
FHWA Capability Maturity Model Framework & NJ’s IAC

Advancing TSM&O in NJ Through the Application of the FHWA Capability Maturity Model

CMM Level 1: Performed
- Good
- Done ad hoc

CMM Level 2: Managed
- Better
- Process developing

CMM Level 3: Integrated
- Best
- Process documented
- Closing gaps among:
  - Institutional - supporting framework
  - Operations – what you do
  - ITS - the technology

CMM Level 4: Optimized

Source: WSP based on FHWA CMM Levels

Illustrating the Concept of The New Jersey ITS Architecture Committee (IAC) Enabling Advancement in Capability Maturity Model (CMM) Levels

Improved ITS/ TSM&O Effectiveness Increasing Benefits Aligned With Regional Goals
Role of the IAC

- Institutional, Operations, Technology Gaps

- Address Connections for Capability Maturity
Role of the IAC

ILLUSTRATING THE CONCEPT OF THE NEW JERSEY ITS ARCHITECTURE COMMITTEE (IAC) ENABLING ADVANCEMENT IN CAPABILITY MATURETY MODEL (CMM) LEVELS

Source: WSP
10 Architecture Program Areas & Emerging Focus Areas

- Freeway Management
- Traffic Incident Management
- Arterial Management
- Transit Management
- Traveler Information
- Electronic Payment
- Commercial Vehicle Operations
- Multi-Modal and Regional Integration
- Climate Change Adaptation
- Data Management

Emerging Focus Areas
- Connected & Automated Vehicles
- Smart Cities
NJ ITS Architecture
Program Areas

- 10 FHWA Program Areas
  - Pilots
- Emerging Focus Areas
  - Connected & Autonomous Vehicles
- Smart Cities
- Etc.

**TABLE 10: TSM&O PROGRAM AREAS AND INVOLVED AGENCIES**

<table>
<thead>
<tr>
<th>TSM&amp;O Program Areas</th>
<th>Agencies</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>NDOT</td>
</tr>
<tr>
<td>Freeway Management</td>
<td>●</td>
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<tr>
<td>Incident Management</td>
<td>●</td>
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<tr>
<td>Data Management</td>
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</table>

Source: TCC v1.0
What is ITS Architecture?

**Logical:** A shared vision of ITS within a region

**Physical:** A publicly available software file (RAD-IT) needed to show FHWA/FTA compliance for ITS projects
Use and Maintenance of the NJ ITS Architecture

**Logical:** Architecture Maintenance Process
- Get stakeholder information
- Discuss across stakeholders to improve shared initiative projects

**Physical:** Software “Regional Architecture Development for Intelligent Transportation RAD-IT” (formerly known as Turbo)
- Enter stakeholder information
Use and Maintenance of the NJ ITS Architecture

Physical: Software “Regional Architecture Development for Intelligent Transportation RAD-IT” (formerly known as Turbo)

- Enter stakeholder information
- Librarian” updates RAD-IT file
What are inputs?

- Project Information Sheet
- Compile for Librarian
- Update RAD-IT File

<table>
<thead>
<tr>
<th>Project Information Sheet</th>
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<tbody>
<tr>
<td><strong>Agency Name:</strong></td>
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<tr>
<td><strong>Contact Name/E-mail:</strong></td>
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<td><strong>Reference Document(s):</strong></td>
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<tr>
<td>(if available)</td>
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<tr>
<td><strong>Can Reference Document be Shared with Public (Y/N):</strong></td>
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Next Steps

- Project Information Sheet
  - Compile for Librarian
- Develop Shared Initiatives
  - Traffic Signal Optimization
  - Transit Signal Priority
  - Etc.
- Core IAC & IAC Meetings

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Shared Initiatives

- Transit Signal Priority
- Integrated Corridor Management (ICM) Decision Support System (DSS)
- Pursuit of Grants
- Traffic Signal Systems
Shared Initiatives - Transit Signal Priority (TSP)

→ U.S. 9 Corridor

→ TSP to reduce congestion and transit travel time

→ Example Project Architecture
### Schedule Review

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<thead>
<tr>
<th></th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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<tbody>
<tr>
<td><strong>IAC Meetings</strong></td>
<td><img src="image" alt="Strategic Focus" /></td>
<td><img src="image" alt="Arch Approval" /></td>
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<tr>
<td><strong>Core IAC Meetings</strong></td>
<td><img src="image" alt="Working Group Supporting IAC Initiatives" /></td>
<td><img src="image" alt="Including Data Sharing" /></td>
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<td><strong>Mainstreaming Engagements</strong></td>
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<td>The Complete Team</td>
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<td>XCOM Committees</td>
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<td>CPM Screening</td>
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- ![NJ](image)
Next Steps:

- Meetings of Core IAC and IAC
- Architecture Maintenance & Use Training
- Project Information Sheets & Data Sharing
- Shared Initiatives
  - Transit Signal Priority
  - Traffic Signal Systems
  - Etc.
- Annual Update of RAD-IT File
Progress Through Collaboration!

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Special Projects Manager, Planning-Operations
NJTPA