

NEW JERSEY ITS ARCHITECTURE

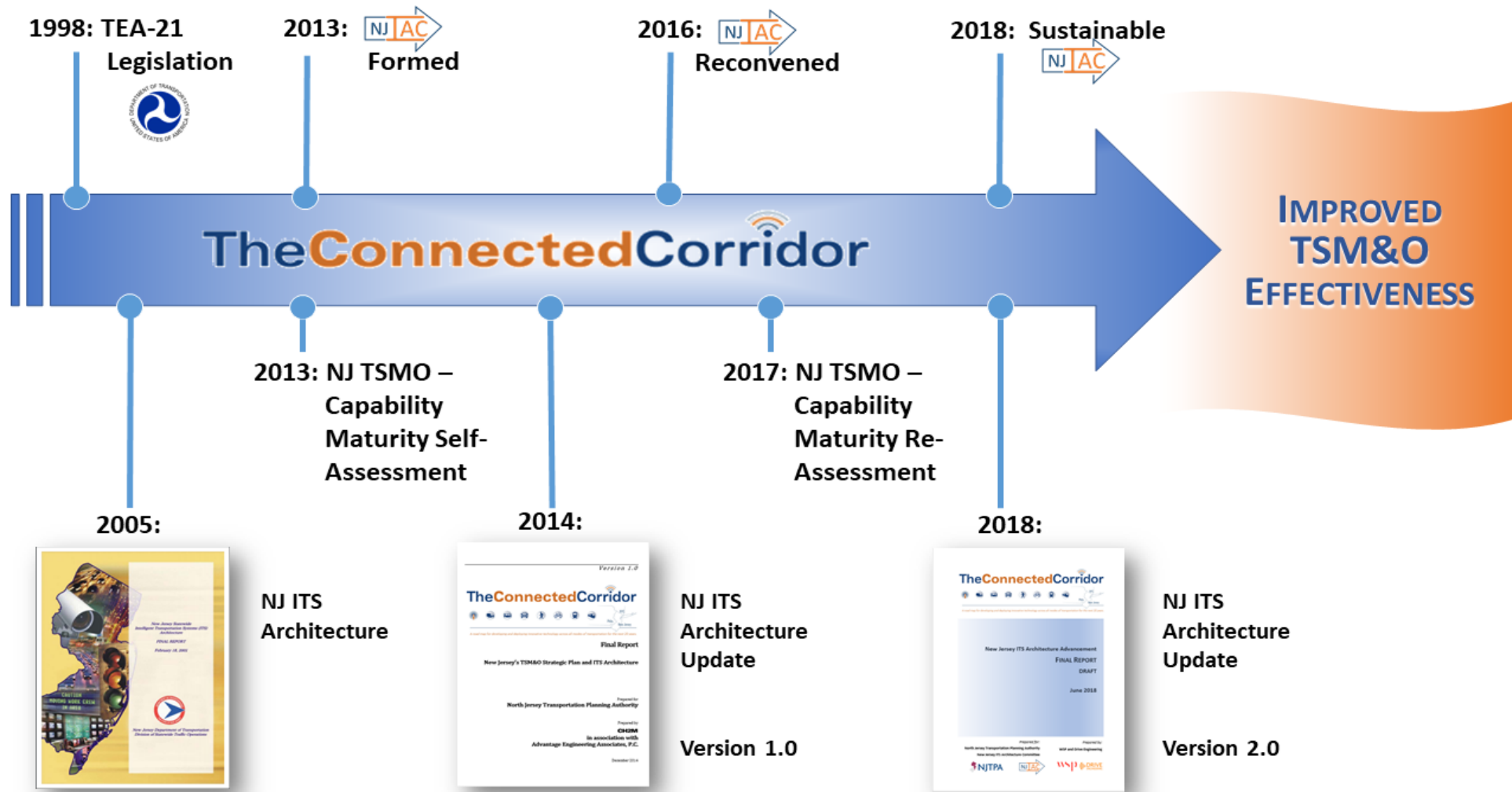
THE CONNECTED CORRIDOR

(VERSION 2.0)



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

The Connected Corridor Timeline



Source: TCC v1.0 & WSP

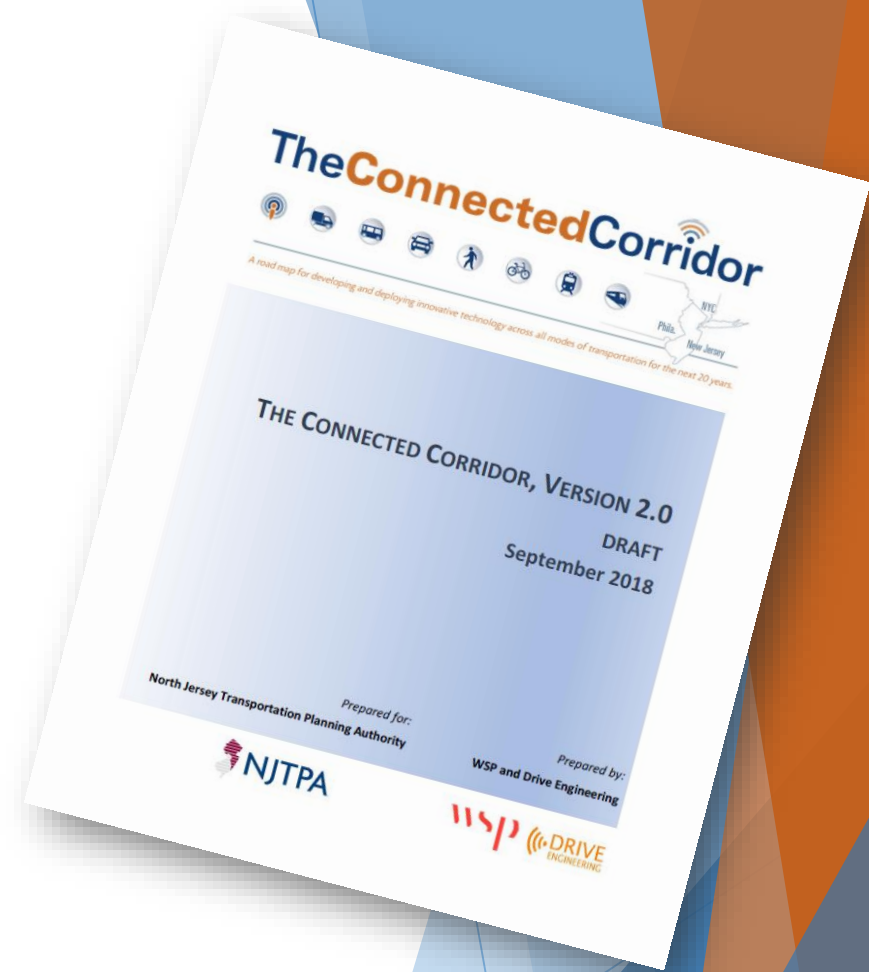


The Connected Corridor, Version 2.0

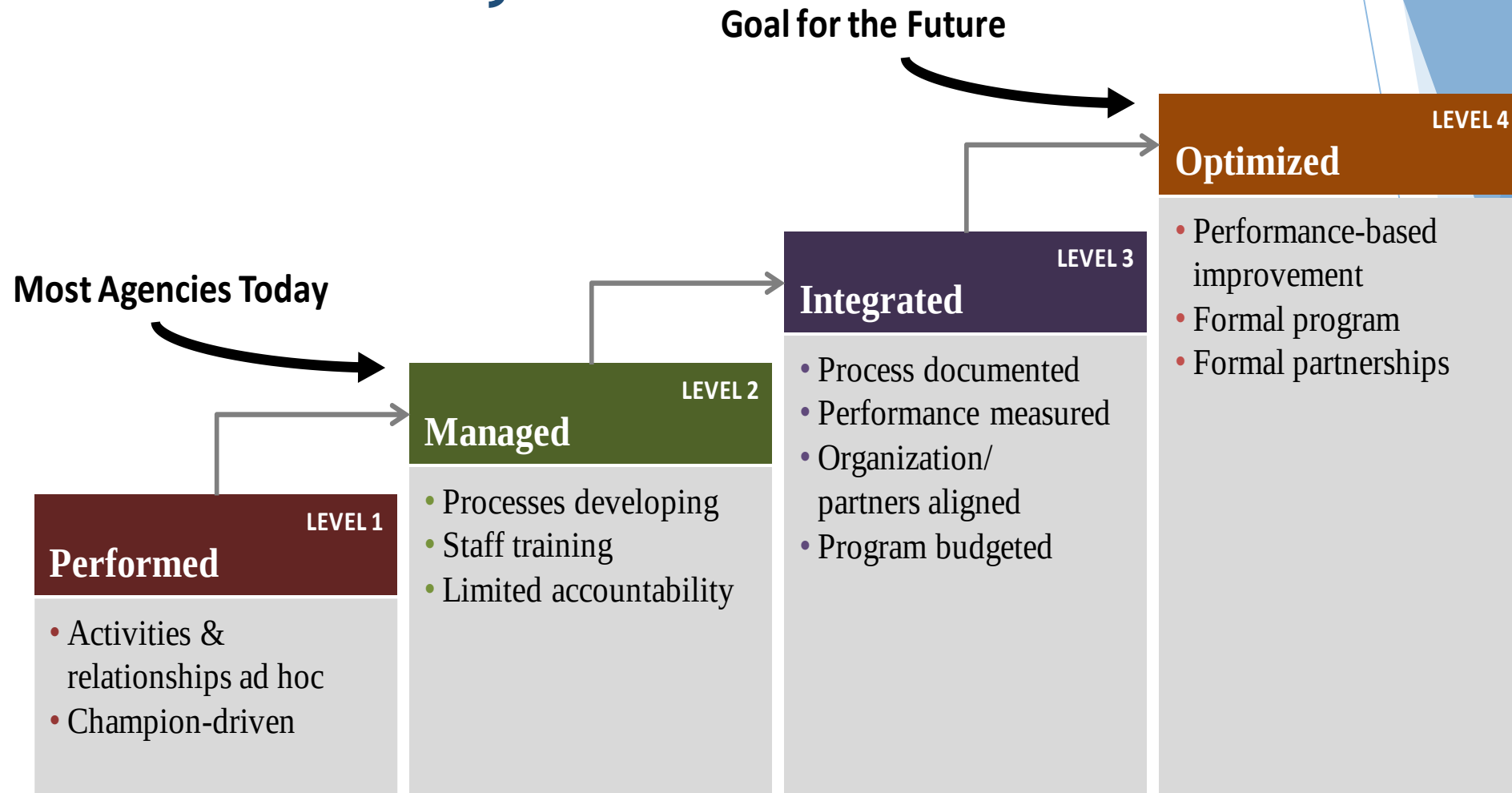
Executive Summary

Chapters

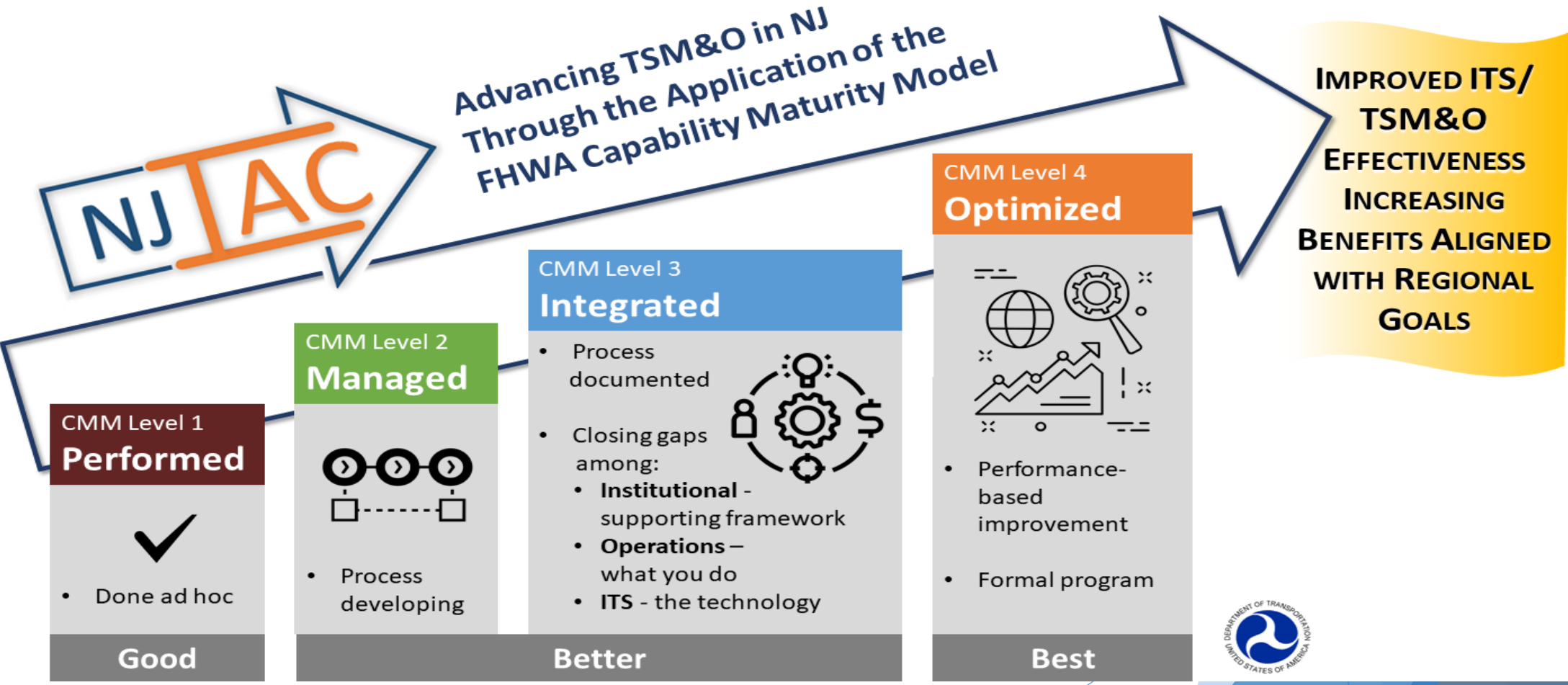
- 1. Institutional Perspective*
- 2. Operational Perspective*
- 3. Technical Perspective*
- 4. Use and Maintenance Process*
- 5. Recommendations for Assessing Reliability Measures in Support of the NJ ITS/TSMO Project Pipeline*
- 6. Moving Forward*



FHWA Capability Maturity Model Framework for Systems Maturity



FHWA Capability Maturity Model Framework & NJ's IAC



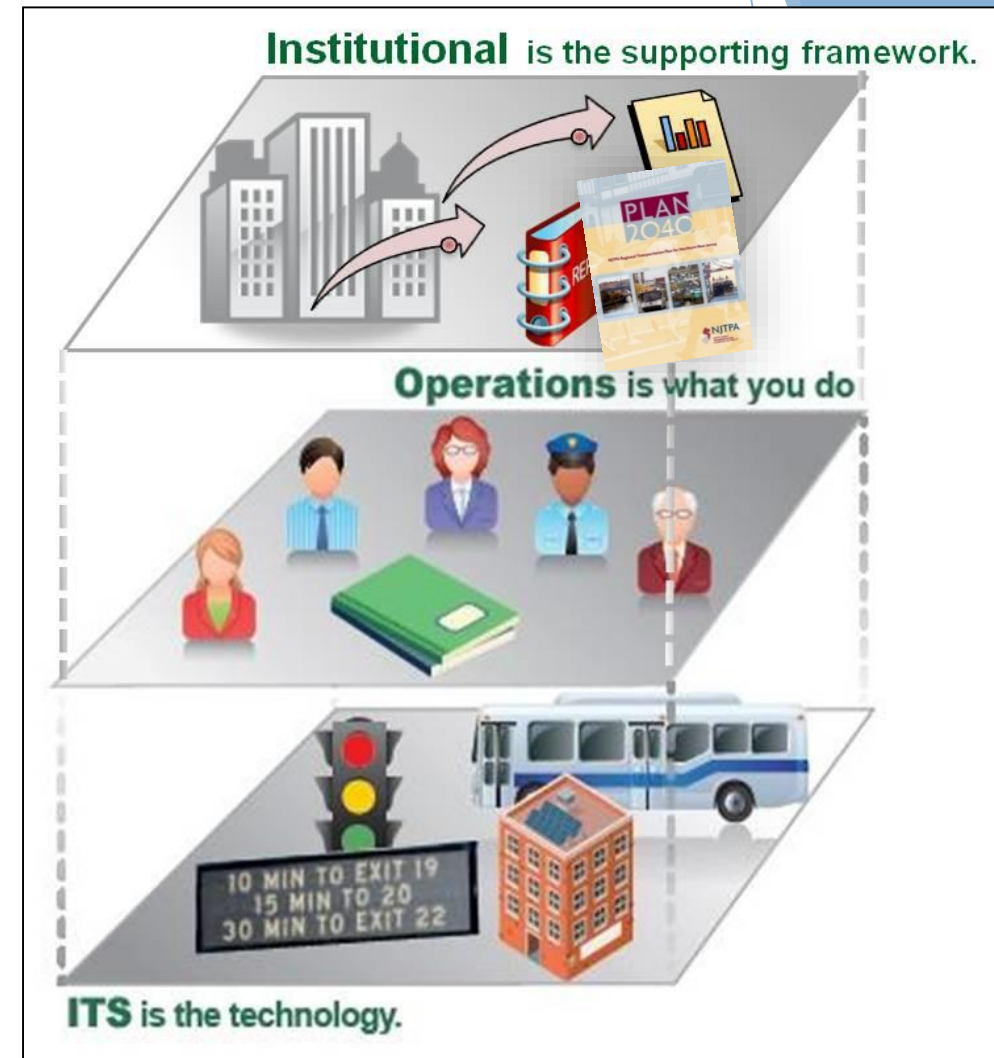
ILLUSTRATING THE CONCEPT OF THE NEW JERSEY ITS ARCHITECTURE COMMITTEE (IAC) ENABLING ADVANCEMENT IN CAPABILITY MATURITY MODEL (CMM) LEVELS

Source: WSP based on FHWA CMM Levels

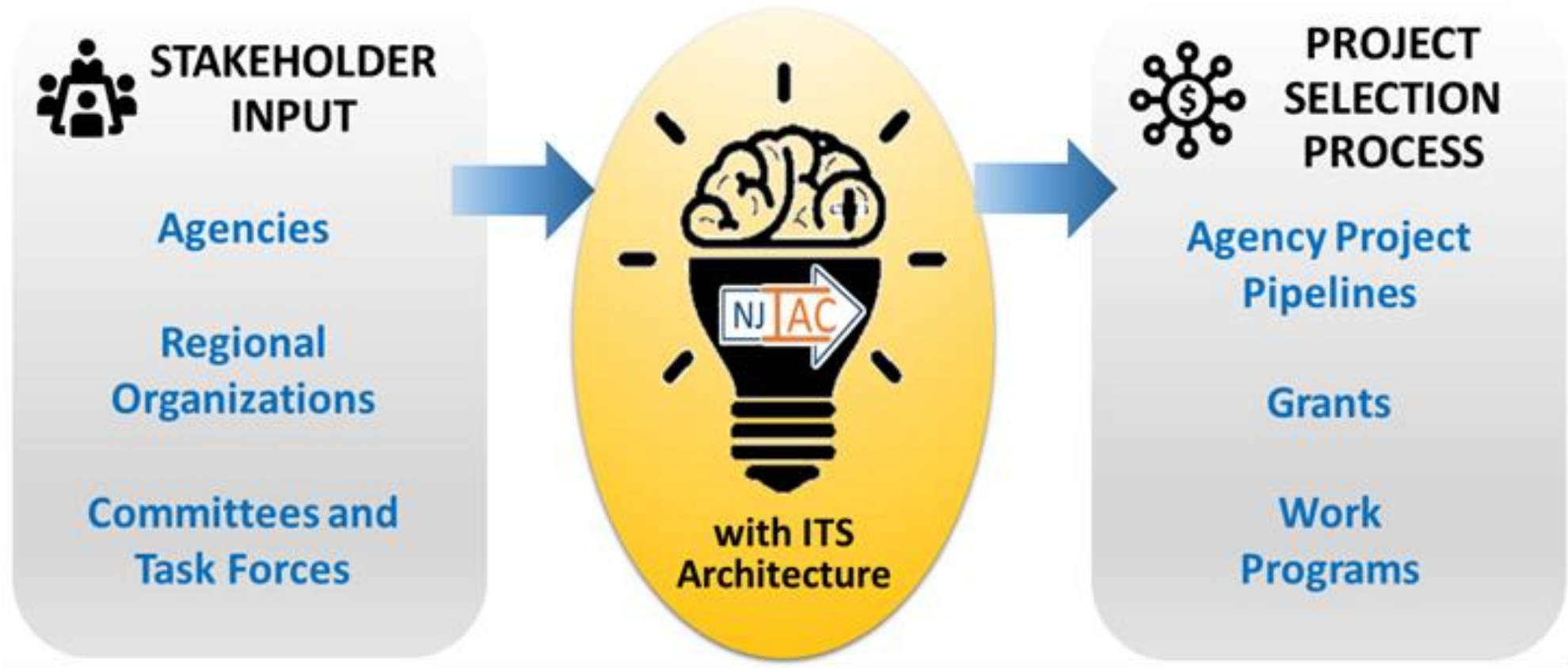


Role of the IAC

- ▶ 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 MATURITY 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

TSM&O Program Areas	Agencies					
	NJDOT	New Jersey Turnpike Authority	New Jersey Transit	MPOs	Local Agencies and Counties	Other States
Freeway Management	●	●		●		●
Incident Management	●	●	●	●	●	●
Transit Management	●	●	●	●	●	●
Arterial Management	●		●	●	●	
Traveler Information	●	●	●	●	●	●
Multimodal and Regional Integration	●	●	●	●	●	●
Electronic Payment		●	●	●		●
Commercial Vehicle Operations	●	●		●	●	●
Climate Change Adaptation	●	●	●	●	●	●
Data Management	●	●	●	●	●	●

Source: TCC v1.0



New Jersey ITS Architecture Aspects

Logical

(Conceptual/
Institutional/
Coordination)

*A shared vision of
ITS within the
New Jersey
region*

Physical

(Software/
Technical)

*Specialized
software tool file
reflecting the
vision (RAD-IT)*

What is ITS Architecture?

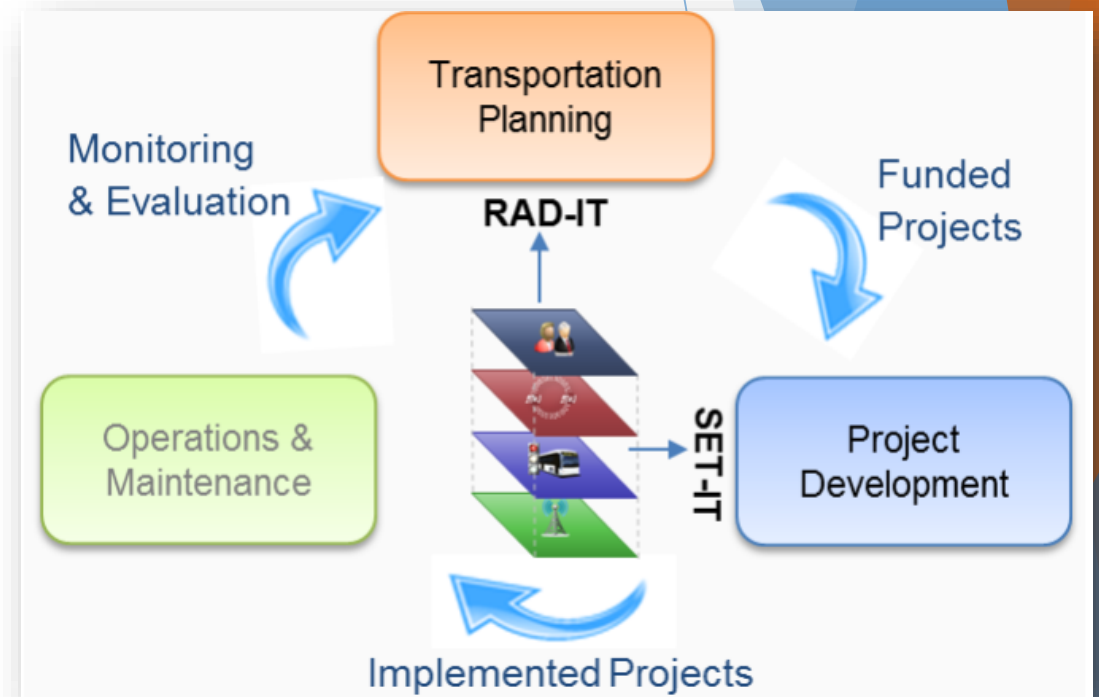
Logical: A shared vision of ITS within a region

Physical: A publicly available software file (RAD-IT) needed to show FHWA/FTA compliance for ITS projects

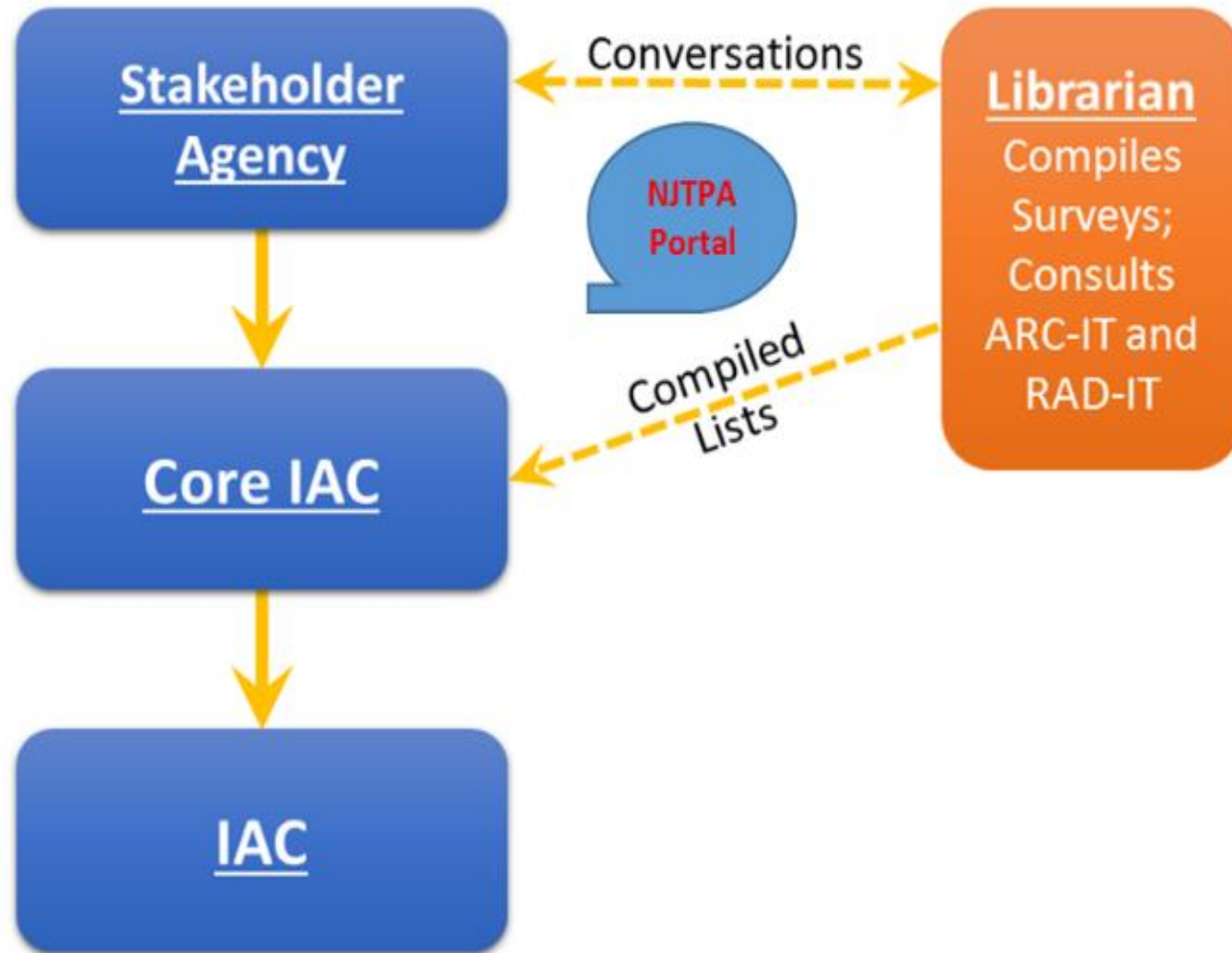
Use and Maintenance of the NJ ITS Architecture

- ▶ **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

ARC-IT Tool Set



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

Project Information Sheet	
Agency Name: (May be multiple agencies, please indicate lead agency.)	
Contact Name/E-mail: (Person providing information we may follow-up with.)	
Project Name:	
Project Description:	
Status: (Existing or Planned)	
Time Frame: (Short-term, Medium-term, Long-term, or in years)	
Project ID: (STIP/TIP/PIN No.):	
Reference Document(s): (if available)	
Can Reference Document be Shared with Public (Y/N):	



Next Steps

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



Project Information Sheet	
Agency Name: (May be multiple agencies, please indicate lead agency.)	
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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

	Q1	Q2	Q3	Q4
IAC Meetings	○ <i>Strategic Focus</i>		○ <i>Arch Approval</i>	
Core IAC Meetings	●	●	●	●
Mainstreaming Engagements				
The Complete Team	◆	◆	◆	◆
XCOM Committees	◆	◆	◆	◆
MPO Collaboration	◆◆	◆◆	◆◆	◆◆
CPM Screening	◆	◆	◆	◆

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



Transit Signal Priority



Integrated Corridor Management (ICM)
Decision Support System (DSS)



Pursuit of Grants



Traffic Signal Systems



Shared Initiatives
Architecture Use & Maintenance
Data Sharing

Progress Through Collaboration!

Solomon Caviness, scaviness@njtpa.org

Special Projects Manager, Planning-Operations

NJTPA



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