

# NZ Transport Agency Auckland Region Traffic Management and Operations Planning

ITS Florida Technology Forum  
09Dec09

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# Agenda

- Background
- Vision and Mission
- Current Operations
- Attaining the Vision



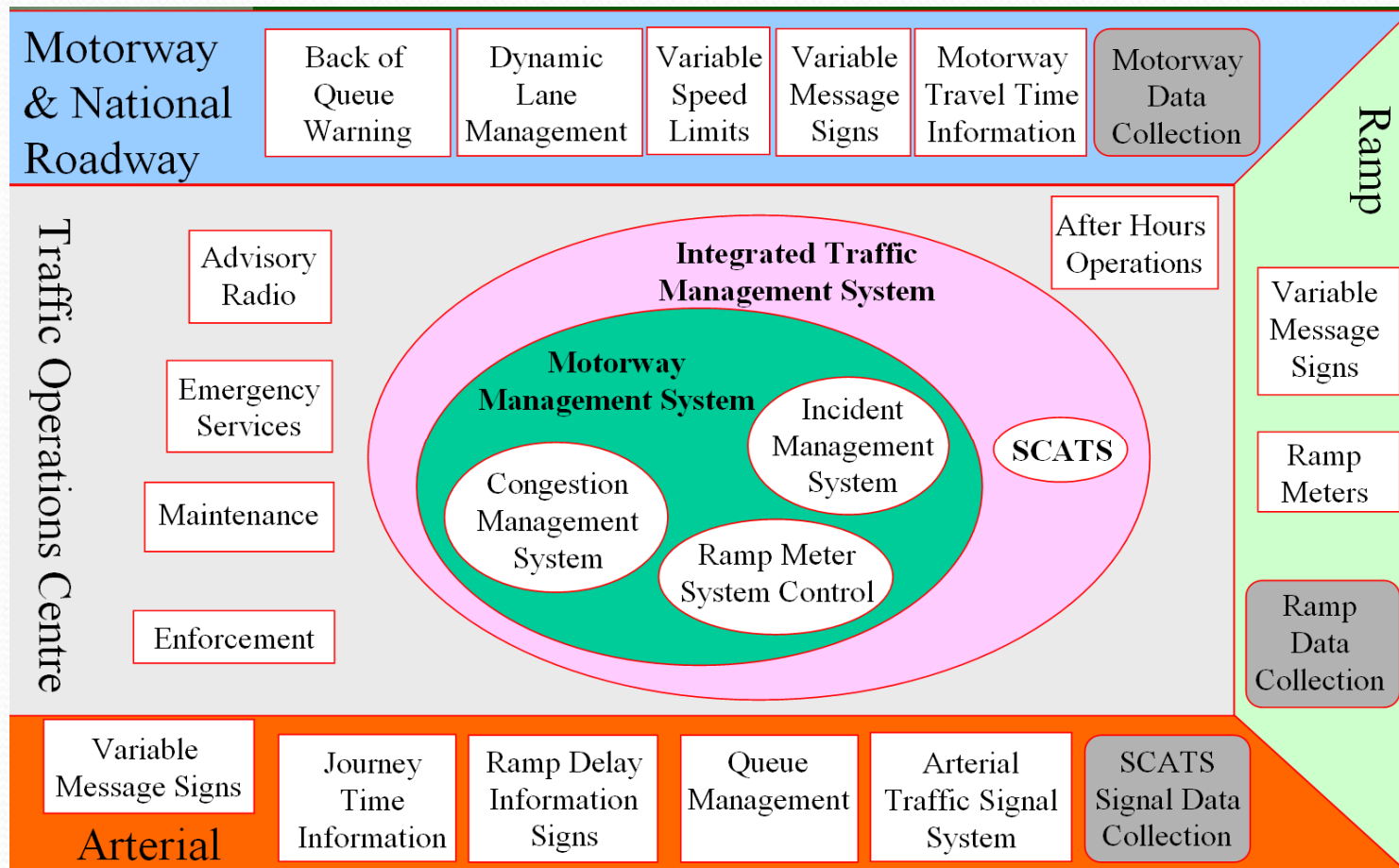
# Purpose

- Examine the changes needed to
  - Set a forward vision and objectives
  - Establish a new facility with expanded capabilities
  - Focus on customer service
  - Actively manage the network
  - Shape the management and culture of the new TMC

# Process

- Interview Agency Management
- View current Operations
  - Northcote TMC
    - Manages the Auckland regional road network (24/7)
  - NZTA Auckland Regional Office
    - Uses SCATS to manage traffic signals
    - Manages ramp signal operations and surveillance function
  - Reviewed publications
  - Vetted with team

# Vision

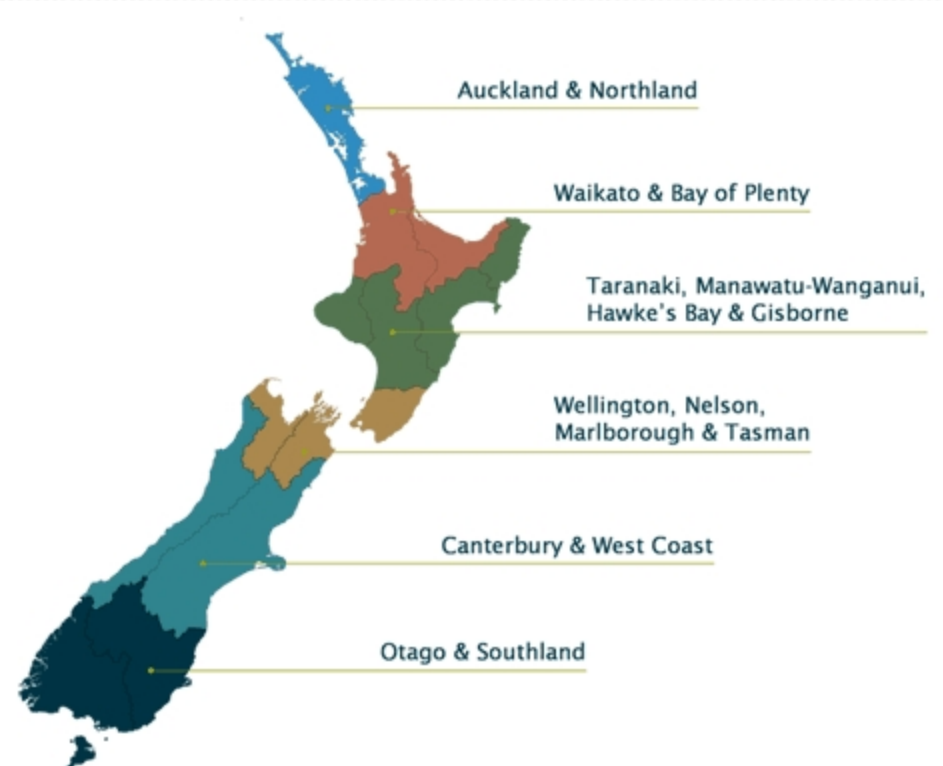


# Mission

- Primary Mission of traffic management and operations is to engage internal and external partners to effectively promote the mobility and safety of transportation users
  - Recognise difference between management (control) and leadership (focussed on persuasion)
  - Relative few suitably skilled people so need a programme to grow, nurture, develop and value such skills
  - Training needs at national and regional levels to be established and implemented
  - Development of traveler information requires additional funding and increased staff and skills resource

# Current Operations

- Auckland
  - Operates motorways, arterials, busways, and tunnels.
  - Night operations of Wellington and Christchurch
- Wellington
  - Operates motorways and arterials
  - Some regional operations
- Christchurch
  - Operates Lyttelton Tunnel





# Opportunities

- Formation of the New Zealand Transport Agency
- Formation of a new Auckland Council
- Ability to co-locate all TMC operations

# 10 Step Plan

1. Continue to build on and expand the current operations and best practices
2. Relocate all Auckland operations into a single new facility in co-location with as many partners as are interested
3. Define the functions that will be done regionally and nationally by the NZTA
4. Develop and establish capability in all aspects of active traffic management, including peak hour lanes, variable mandatory speed limits, managed priority lanes, hard shoulder running, etc.

# 10 Step Plan, continued

5. Develop and deliver an expanded provision of traveller information to include expected journey times and mobile phone, web, and text services
6. Develop and implement a program to measure and continually improve performance that is reported and available at all levels of the organisation
7. Audit the Operations of all TMCs a year after the Auckland operations have been relocated.



# 10 Step Plan, continued

8. Establish an agreed upon Memorandum of Understanding with the new Auckland Council
9. Expand the existing use of incident response vehicles
10. Enhance operations by active management and performance reporting, being customer oriented, and keeping abreast of new technology and methods



# In Summary

- The formation of the NZTA and the reorganization of local government provides an opportunity to strengthen the management and operations of transportation
- A 10 Step Plan outlines the means for the NZTA to achieve its Vision and Mission
- The project provided an opportunity for team building

# NITTEC Transportation Operations Study

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# Agenda

- Background
- Scope of Work
- RCTO
- ICM

# Background



- Niagara International Transportation Technology Coalition (NITTEC)

- Founded on September 22, 1995
- 14 agencies
- Mission is to

*improve mobility, reliability and safety on the regional bi-national multimodal transportation network through information sharing and coordinated management of operations*

# Background (continued)

- Strategic Plan
  - Completed in 2007
  - Provides vision of region's transportation future
  - Recommends actions for mobility
    - Develop concept for transportation operations
- Transportation Operations Study
  - Two parts
    - Regional Concept for Transportation Operations
    - Integrated Corridor Management Initiative



# Process

- Needed strong input
- Held two series of workshops
- Workshop One – five meetings
  - Border Group
  - United States Policy Group
  - United States Traffic Incident Management Group
  - Canada Policy Group
  - Canada Traffic Incident Management Group
- Workshop Two
  - ICM stakeholders in the Niagara Frontier Corridor

# Regional Concept for Transportation Operations (RCTO)

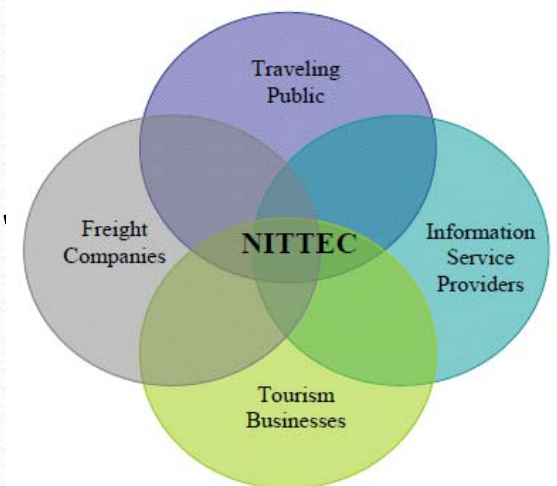
# Regional Concept for Transportation Operations (RCTO)

- Purpose

*To provide a framework for regional agencies to improve regional transportation system performance by working together*

- Should answer questions

- What do the stakeholders want to achieve?
- How are they going to achieve it?



# Existing Conditions



# RCTO Vision and Objectives

- Vision

*To establish a basis for a safe, reliable, efficient, and seamless surface transportation system for the NITTEC region*

- Objectives

- Five operational categories
  - Agency Coordination
  - Traveler Information
  - Mobility (Arterial, Border, Freeway, and Transit)
  - Incident Management
  - Policy and Procedures

# RCTO Operational Categories and Objectives

<u>Category</u>	<u>Objective</u>
Agency Coordination	<ul style="list-style-type: none"> <li>➤ Improve NITTEC participation (5.1)</li> <li>➤ Improve inter-agency and cross-jurisdictional coordination and collaboration during highway incidents (5.2)</li> </ul>
Traveler Information	<ul style="list-style-type: none"> <li>➤ Provide easily accessible, coordinated, clear and concise, real-time information (5.3)</li> <li>➤ Promote use of traveler information services (5.4)</li> <li>➤ Increase accuracy of congestion (travel time) information (5.5)</li> <li>➤ Promote seamless operation among modal choices (5.6)</li> </ul>
Mobility (Arterial, Border, Freeway, Transit)	<ul style="list-style-type: none"> <li>➤ Minimize travel delay (5.7)</li> <li>➤ Promote use of expedited clearance programs and systems (5.8)</li> <li>➤ Enhance transit operations (5.9)</li> <li>➤ Reduce travel time uncertainty (5.10)</li> <li>➤ Balance traffic loads on border crossing corridors (5.11)</li> <li>➤ Increase awareness of cross-border transit solutions (5.12)</li> </ul>
Incident Management	<ul style="list-style-type: none"> <li>➤ Establish incident classifications and severity guidelines (5.13)</li> <li>➤ Decrease highway incident clearance time (5.14)</li> <li>➤ Increase responder safety (5.15)</li> <li>➤ Decrease secondary highway incidents (5.16)</li> <li>➤ Establish agency MOUs for incident management first responders (5.17)</li> <li>➤ Continue an active, Regional Highway Incident Management Committee that conducts proactive and post incident review meetings (5.18)</li> </ul>
Policy and Procedures	<ul style="list-style-type: none"> <li>➤ Establish and implement applicable policies, procedures, and practices (5.19)</li> </ul>

# Sample RCTO Objective, Goals and Performance Measures

- Mobility (Arterial, Border, Freeway, & Transit)
  - Reduce Travel Time Uncertainty
    - Short-Term Goal (< five years)
      - Peak hour travel variability has decreased by 10 percent
    - Long-Term Goal ( five to ten years)
      - Peak hour travel time variability has decreased by 20 percent
    - Performance Measure
      - Compare monthly and yearly travel times on selected links during selected time periods

# RCTO Action Plan

- 14 short and long-term actions in response to RCTO objectives
- Four service categories identified in Strategic Plan
  - Construction and Event Planning & Coordination
  - Operational Services
  - **ITS Deployment and Operations**
  - Other Services

# Sample RCTO Action Plan Item

- Mobility (Arterial, Border, Freeway, & Transit)
  - Reduce Travel Time Uncertainty
    - ITS Deployment & Operations Service Category
      - Increase the number of locations where travelers can obtain travel time information (Technology and Systems Committee, NITTEC)
  - Balance Traffic Loads On Border Crossings
    - ITS Deployment & Operations Service Category
      - Strategically locate VMS to provide border crossing traffic information and assist in balancing traffic loads on all border crossings (Technology and Systems Committee, NITTEC)

# Integrated Corridor Management (ICM)

# Integrated Corridor Management (ICM)

- Vision

*Improved mobility through integrated management of transportation assets – freeways, arterials, transit, managed lanes – in the Niagara Frontier Corridor*

- Objectives

- Four operational categories

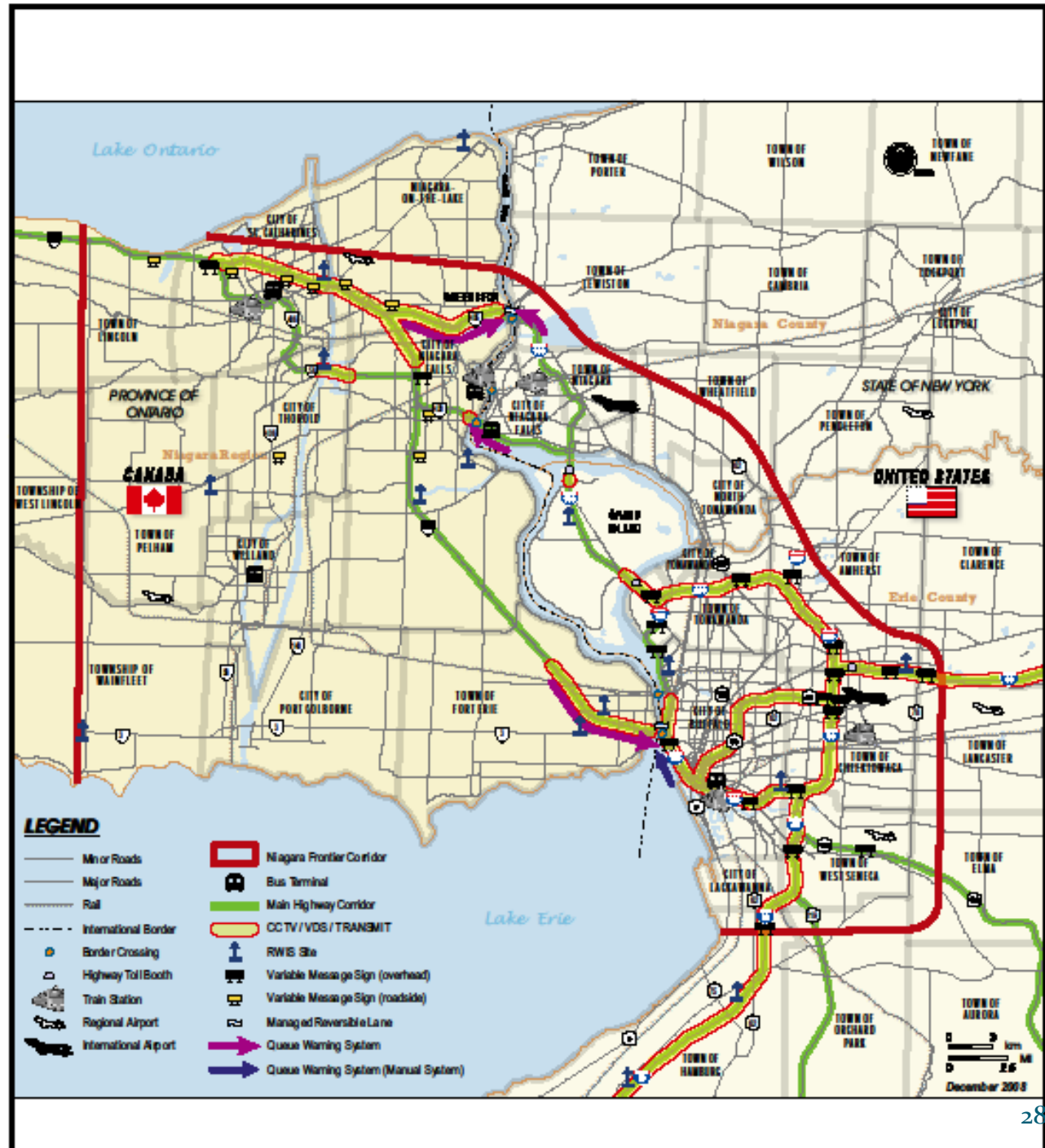
- Agency Coordination

- Traveler Information

- Mobility (Arterial, Border, Freeway, and Transit)

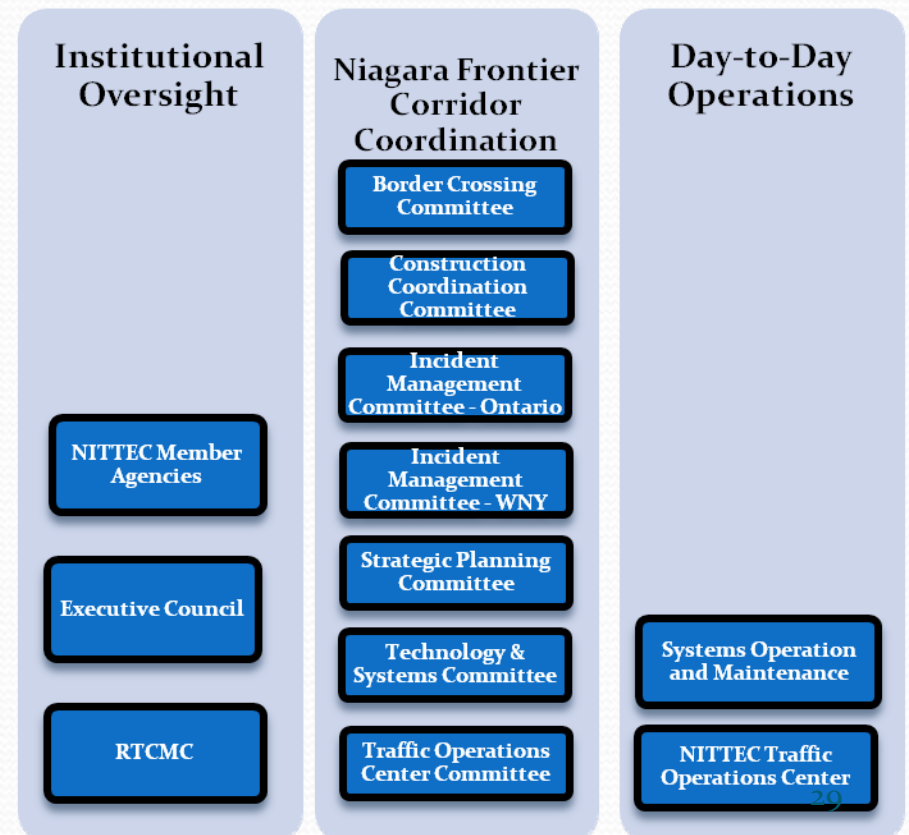
- Incident Management

# Niagara Frontier Corridor



# ICM System Operational Concepts

- Objectives, Goals, and Performance Measures
- Alignment with Regional ITS Architecture
  - Common objectives
  - No conflicts
- Implementation Issues
  - Technical
  - Operational
  - Institutional
- Institutional Framework
  - Oversight
  - Corridor Coordination
  - Day-to-Day Operations



# ICM Operational Scenarios

- Daily Operations
- Major Incident
  - Arterials
  - Freeways
- Transit Incident
- Border Crossing Incident
- Work Zones
- Planned Special Event
- Evacuation
- Weather Incident

# Functional Requirements

<i>Requirement ID</i>	<i>Requirement Description</i>	<i>Traceability</i>	<i>Critical Level</i>
FR-1	The ICMS shall be subject to inter-agency operating agreements regarding the control of regional motorist information (VMS, HAR) assets by approved ICMS users	FN-14	H
FR-2	The ICMS shall provide an interface for an ICMS user to remotely control any Niagara Frontier corridor motorist information device (VMS, HAR) regardless of the owning agency	FN-17	M
FR-3	The ICMS shall forecast network (freeway, arterial, HOV, transit) demand	FN-16	H
FR-4	The ICMS shall disseminate designated data to travelers via the following: <ul style="list-style-type: none"> <li>•a publicly accessible website</li> <li>•mobile device notification subscriptions</li> <li>•e-mail notification subscriptions</li> </ul>	FN-1 FN-16	H
1. FR-5	The ICMS shall include a multi-modal trip planner.	FN-5, 12 FN-15, 16	H

# Next Steps Beyond Requirements

- Use the results of
  - Task B1 – Systems Overview and Operational Description (Existing Conditions)
  - Task B2 – Identify Vision, goals, and Objectives
  - Task B3 – System Operational Concept
  - Task B4 – Requirements Document
- Design the system
- Implement the system

# In Summary

- The Transportation Operations Study developed action items for both the short-term and long-term.
- The study provided a team building opportunity.
- Some action items were implemented before the study was completed.
- The RCTO and ICM provide a strong basis for NITTEC to continue to achieve its mission.

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