Maryland’s Rural Management and Operations (M & O)/Intelligent Transportation Systems (ITS) Strategic Deployment Plan

Presented by

Ivana Lucic

2007 NRITS Conference
Traverse City, Michigan
October 8, 2007
Presentation Outline

- Project Background
- Project Scope
- Rural M&O/ITS Needs Assessment
- Maryland Statewide ITS Architecture
- Rural M&O/ITS Strategies Assessment
- Rural M&O/ITS Funding Sources
- Summary of the M&O/ITS Strategic Plan
- Lessons Learned
Project Background (cont.)

- Maryland State Highway Administration, Office of CHART (Coordinated Highways Action Response Team) initiated the effort to develop the Rural M & O/ITS Strategic Plan.

- The purpose of developing this plan is to support weather, evacuation, seasonal and everyday traffic, special events, and safety issues in the rural parts of Maryland.

- The Plan focuses on the continuous expansion of CHART program functions into rural areas including:
  1. Deployment of ITS technologies,
  2. Expansion of the CHART incident management program, and
  3. The identification of gaps in on-going evacuation planning efforts.
Project Background (cont.)

The project area includes:

- The Eastern Shore (SHA Districts 1 and 2)
- Western Maryland (SHA District 6 and the western portion of Frederick County, bounded to the east by US-15 and US-340)
- Southern Maryland (Calvert, Charles and St. Mary’s Counties and the southern portions of Anne Arundel and Prince George’s Counties, with northern boundaries delineated by MD-210, MD-373, US-301, MD-4 and MD-258)
Project Background (cont.)
Project Scope

- Analyze the existing M & O/ITS Strategies and Deployments throughout the study area
- Evaluate planned M & O/ITS Deployments
- Work with key stakeholders in rural Maryland to gather information about their needs for the ITS devices
- Conduct a needs assessment analysis based on the gathered information
- Establish rural M & O/ITS strategies that will address the needs for additional M & O/ITS Deployments
Project Scope (cont.)

- Analyze Maryland Statewide ITS Architecture for possible gaps based on the information gathered during the needs assessment process.

- M&O/ITS Strategies Assessment based on the phased approach.

- Alternative revenue sources including federal funding sources.

- Costs based on the implementations of elements described in the concept plan.
Rural M&O/ITS Needs Assessment

- Identified M&O/ITS deployments and strategies to support weather, evacuation, seasonal and everyday traffic, special events, and safety issues in the rural parts of Maryland.

- Identified other M&O/ITS strategies.

- Located areas that are candidates for deployment of ITS devices.

- Prioritized needs based on the perceived benefits and level of importance.

- Recognized gaps in on-going evacuation planning efforts.
Rural M&O/ITS Needs Assessment (cont.)

• 22 unique Stakeholders who identified 51 specific M&O/ITS needs.

• Eastern Shore
  – Total of 20 specific needs identified
  – Five specifically related to weather-related (hurricane) emergency evacuation
  – Six users wanted to have better access to CHART data
  – Twenty one proposed needs involve an extension of the existing CHART elements (workstations, CCTV cameras, DMS, and RWIS).

• Western Maryland
  – Total of 19 specific needs identified
  – The most concern was about winter weather issues, traveler information, and traffic management
  – Washington County Division of Public Works expressed their concerns about emergency evacuations from Washington D.C.
  – Sixteen needs proposed needs involve an extension of the existing Chart elements (workstations, CCTV cameras, DMS, and RWIS)
Southern Maryland

- Total of 12 specific needs identified
- Extension of the existing CHART elements (workstations, CCTV cameras, DMS, and RWIS)
- SHA in Calvert County identified the need for improved interagency communications and need for additional 800MHz radios.
- MSP (Barrack H) identified needs for an expanded FITM plan and issues related to simulcasting.
Stakeholders from all three rural areas expressed their concerns towards coordination efforts and how to improve them. The following summarizes the recommended coordination efforts:

• Eastern Shore
  – Coordinate emergency evacuation operations with United States Army Corps of Engineers (USACE)
  – Organize a stakeholder forum to address the need for increased CHART presence in the districts, e.g. more workstations (raise issue at CHART Board Meetings)
  – Establish working/coordination groups similar to ROCC (Regional Operations Coordinating Committee) and B-ROCC to support the use and maintenance of the Strategic Plan
  – Continue work with the DelMarVa Task Force to coordinate traffic movement between Maryland, Delaware and Virginia

  – Delaware DOT
    ➢ Work with MD (CHART) to determine traffic crossing the State Line
    ➢ Work closely with Ocean City and SHA districts during evacuations (through Mutual Aid Agreements)
Rural M&O/ITS Needs Assessment (cont.)

- Western Maryland
  - Coordination with PennDOT on road closures during snow events
  - FITM implementation notification and coordination between District 7 and Washington County
  - Complete plans for downstate evacuation and Pittsburg area. Plan development underway by Allegany County.
  - SHA Districts need to discuss resource-sharing during major incidents with WV, PA, and Washington and Garrett Counties. Also involve PA and WV in the incident management planning process
  - Set clear guidelines for response agencies re-lane/roadway closures, activation of ITS assets and when incidents should be turned over to SHA (Statewide protocol needed).
  - Establishment of traffic management teams similar to ROCC and B-ROCC.
  - Regular incident management conferences.
  - Develop strategy for making local legislatures more aware of the key elements of CHART planning process.
• Southern Maryland
  — Regional coordination in advance of emergency evacuations to develop workable strategies for detours and sheltering.
  — Update St. Mary’s County Evacuation Plan to reflect ultimate destination/routing of evacuees.
  — Investigate the establishment of a working/coordination group (Southern ROCC) to support the use and maintenance of the Strategic Plan.
  — Coordination between SHA shop and Emergency Operations Centers (EOC) personnel to maximize use of available resources.
  — Develop MOU for other Southern MD counties, similar to that used in St. Mary’s County.
  — VDOT coordination to garner information on detour strategies affecting US-301.
• **PC01:** There is an immediate need for this resource. The resource is crucial for day-to-day M&O activities and for mounting effective responses to incidents and emergencies.

• **PC02:** The resource can help to alleviate existing challenges in M&O activities; however, such operations are not adversely impacted by its absence. The resource can be acquired within 2-3 years.

• **PC03:** This resource would give additional capabilities to M&O personnel. Execution of current M&O strategies is not dependent on the acquisition of this resource. The resource could be implemented in the long-term (i.e. 3-5 years).
Technical approach:

- Map the needs identified in the needs assessment analysis to the elements of the Maryland Statewide ITS Architecture
- Determine what parts of the Maryland Statewide ITS Architecture must be updated
- How each of the 51 needs can be accommodated by the existing architecture and if they cannot be accommodated, which parts of the architecture will have to be revised
The following four areas will require attention/changes:

• **List of Stakeholders**
  – It is recommended that each rural county be engaged and the agencies in that county who will be active participants in the rural architecture effort be uniquely identified.

• **List of Projects**
  – It is recommended that the List of Projects be updated to reflect the current status.

• **Elements**
  – Although no new Elements, or Element changes from Generic to Specific have been identified as needed, the possibility exists that this need may result from additional efforts. Especially in the areas of Emergency Evacuation and Disaster Response, it may be important to create a Specific Element to better describe the Interconnects and Information Flows.

• **Operational Concept**
  – Also related to the increased efforts in the areas of Emergency Evacuation and Disaster Response, the Operational Concept will have to be developed to describe these events.
Rural M&O/ITS Strategies Assessment

- **Phase 1**
  Needs recognized as *PC01* are crucial for day-to-day M&O/ITS activities and mounting effective responses to incidents and emergencies. These needs are categorized in Phase 1 and could be completed within a period of eighteen months.

- **Phase 2**
  The resources that can be acquired within 2-3 years are classified as *PC02* and categorized as Phase 2. This phase could be completed within a 4-year period.

- **Phase 3**
  Some of the stakeholders’ needs identified in the summary table as *PC03* do not have significant impact on the execution of the current M&O/ITS strategies and could be implemented in the long-term. These resources are categorized in Phase 3 and they could be completed within a period of six months.
Cost estimates by rural area and phase:

<table>
<thead>
<tr>
<th>RURAL AREA</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3</th>
<th>SUBTOTAL</th>
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<td>Eastern Shore</td>
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<td>Southern Maryland</td>
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<td>$3,252,856</td>
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<tr>
<td>Total</td>
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<td>$14,619,091</td>
</tr>
</tbody>
</table>

Rural M&O/ITS Strategies Timeline

- Phase 1: 18 months
- Phase 2: 48 months
- Phase 3: 6 months
Rural M&O/ITS Funding Sources

Possible federal funding sources:

• SAFETEA-LU is the largest funding source for surface transportation investments in highways, highway safety, and public transportation

• Department of Homeland Security (DHS)

Highlights of the Rural M&O/ITS Funding:

• SHA Consolidated Transportation Program (CTP) for next five-year (2006 – 2011) period has been already planned and does not include the proposed M&O/ITS needs presented here

• SHA together with CHART and rural area stakeholders have to work together towards finding sources to support the proposed deployment plan
Summary of the M&O/ITS Strategic Plan

- Total ITS deployment costs for the three Maryland rural areas are $14.6 million
- Phases 2 and 3 account for 74% and 5% of the total costs respectively
- Phase 1 with total costs of $3.1 million, which is 21% of the total deployment costs
- Operations and Maintenance (O&M) annual estimated costs for Phase 1 are $187,500
- Phase 1 is the most important in this effort with deployments that need an immediate action (CHART workstations, DMS, RWIS, 800MHz radios, FITM plans, and guide signs)

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Lessons Learned

Stakeholders’ Meetings:

- Organization
- Material
- Moderator
- One meeting per stakeholder group

Project Schedule:

- Milestones
- Overall project duration (6 vs. 15 months)
Adjourn

THANK YOU!

Additional information can be obtained by contacting

Ivana Lucic @ Ivana.Lucic@Jacobs.com or 410-747-3420