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Tech Brief

ITS Operational Support Contracts

FHWA-NJ-2005-010 January 2005

SUMMARY

The purpose of this project is to develop an Intelligent Transportation Systems (ITS) operational support and contract implementation plan for the NJDOT TOCs. The project was initiated to review the current operations and maintenance practices of the NJDOT and further investigate the best practices of other states' TOCs to develop recommendations for the Research Project Selection and Implementation Panel (RPSIP). The recommendations stated in this report define requirements and approach to provide for ITS TOC technical personnel, either through staffing guidance and/or contracts, so that the ITS will operate at peak efficiency.

This project began with a simple hypothesis: a better maintenance plan for ITS systems and devices, and reduced downtime in TOCs for network, hardware, and software made possible by better system administration will allow the NJDOT to achieve peak efficiency at both TOCs.

The project took the approach that there are significant number of successful TOCs in other states that have faced similar challenges and devised plan that improve their operational efficiency. Towards that end, the first step was taken to investigate the operational support issues facing the NJDOT TOCs, followed by the examination of the practices of other states' TOCs. An extensive literature

review was conducted and the information collected (through surveys and site visits) was synthesized on current practices of other states' TOCs. This information became the basis for further analysis and synthesis done by this project.

Based on this synthesis, 22 specific recommendations in three categories: Policy, Staffing, and Operational Support, and are made to the NJDOT and are briefly summarized in Table 1, page 3, with the implementation timeframe. The detailed discussions on these recommendations are provided on pages 72 through 81.

The project concluded that by providing TOC managers with operational support in three critical areas — system administration, network management, and ITS inventory, parts and equipment management, will improve the system's technical performance and overall operational efficiency. For each TOC, a team of three additional positions a (system administrator, a network system technician, and a Purchasing assistant) is recommended.

The project investigation has also found that the successful practices of other states' TOCs in initiating preventive maintenance program for ITS devices have contributed to peak operational efficiency, and the NJDOT should seriously consider building on successful TOC examples. System component level performance checks and on the spot repairs will avoid system breakdowns and reduce system downtime, and raise the will allow TOCs desired system availability level of 99.67% and higher.

It is anticipated that the RPSIP will consider these recommendations as part of the NJDOT's next steps towards facilitating ITS operations in the State. These anticipated next steps may result in additional support positions at both TOCs and operational support contracts for ITS maintenance in the State.

Table 1. Summary of Recommendations.

#	Policy Recommendations	Time Frame
1	Develop a NJDOT TOC Concept Of Operations Plan	Short Term *
2	Develop NJDOT TOC Operations Manual	Short Term
3	Develop or Integrate a Statewide Policy on Fiber Optics/Wireless Technologies	Long Term *
Staffing Recommendations		
1	Hire Two New <i>System Administrators (One for each TOC)</i>	Short Term
2	Hire Two New <i>ITS Purchasing Assistants (One for each TOC)</i>	Short Term
3	Hire Two New <i>Network Systems Technicians (One for Each TOC)</i>	Short Term
Operational Support Recommendations		
1	Strengthen In-house Operational Support by implementing a statewide <i>ITS Maintenance Management System (MMS)</i>	Short Term
2	Continue with current In-house fiber optic cable maintenance, but add two <i>Network Systems Technicians</i>	Short Term
3	Strengthen Statewide ITS Support Contract by modifying and renaming the current Statewide ITS maintenance contract to include preventive maintenance of ITS devices	Short Term
4	Modify TOC North central system operational support management with three new positions: <i>Network System Technician, System Administrator and a Purchasing Assistant</i>	Short Term
5	Modify TOC South central system operational support management with three new positions: <i>Network System Technician, System Administrator, and a Purchasing Assistant</i>	Short Term

6	Institute Spare Parts and Equipment Management	Short Term
7	Develop and Implement a Policy on ITS standardization	Medium Term *
8	Purchase Special Vehicles for In-house Maintenance to include a High-Reach (80 feet) Bucket Truck and a “Network Support” Van for each TOC	Short Term
9	Procurement of Test Equipment	Short Term
10	Evaluate ITS Maintenance Programs	Short Term
11	Institute Configuration Management	Short Term
12	Institute Logging and Event Tracking System	Medium Term
13	Incorporate National ITS Architecture User Service-Maintenance and Construction Operations (MCO)	Medium Term
14	Institute Semi-annual Training Sessions for TOC Staff	Short Term
15	Convene an Annual TOC Workshop with Peers	Short Term
16	Continue with Further Research on TOC and Traffic Management Issues	Medium Term

* The project defines timeframes as: Short Term- 1 to 2 years, Medium Term- 2 to 5 years, Long Term-over 5 years.

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A final report is available online at <http://www.state.nj.us/transportation/research/research.html>

If you would like a copy of the full report, please FAX the NJDOT, Bureau of Research group at (609) 530-3722 or send an e-mail to nvitillo@dot.state.nj.us and ask for:

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NJDOT Research Report No: FHWA-NJ-2005-010