

# Georgia Department of Transportation (GDOT)



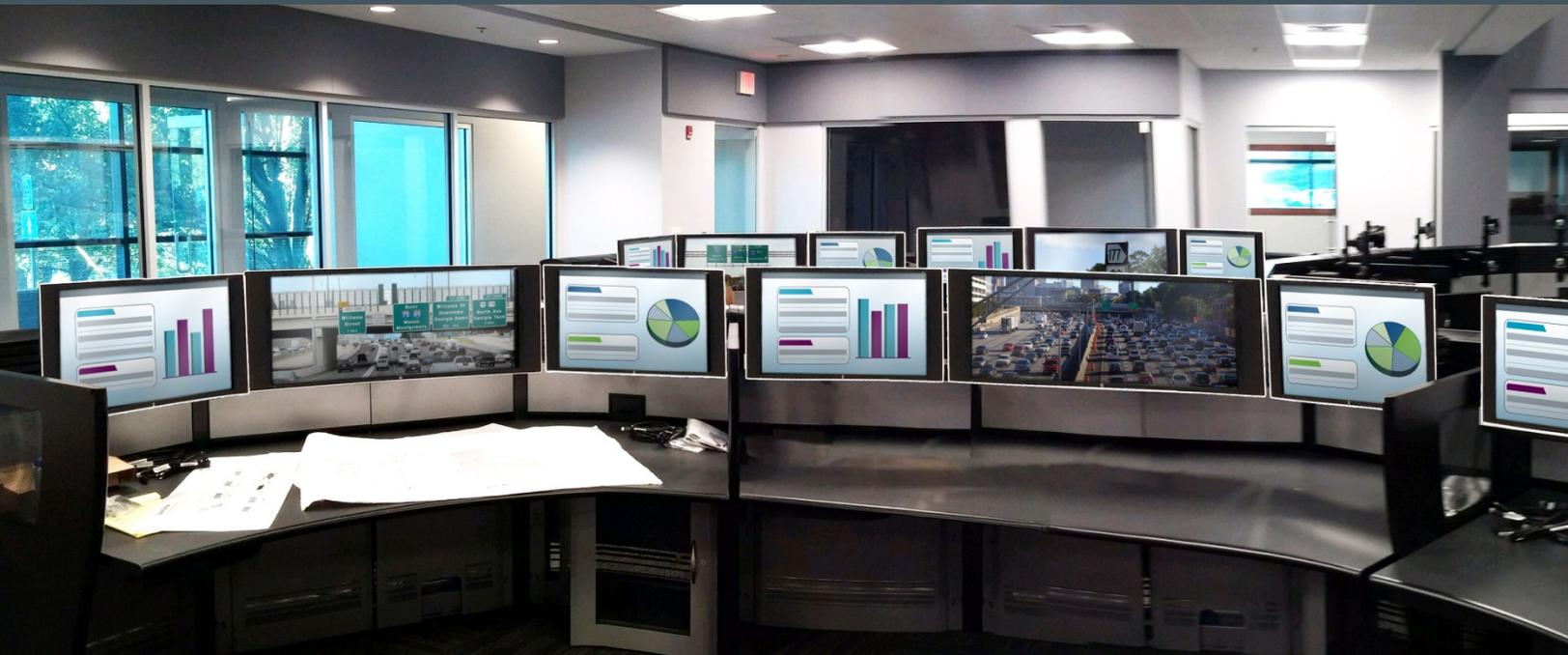
## Intelligent Transportation Systems (ITS) Operations and Support Services, Statewide

Phase II – Response (Technical Approach and Past Performance)

Solicitation No.: RFQ 484-120315

December 17, 2015

**ORIGINAL**



**Submitted to:**

Georgia Department of Transportation (GDOT)  
Attention: Karen Mims  
Transportation Services Procurement  
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**Submitted by:**

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**COVER PAGE**

LTR15-0355

December 17, 2015

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Attention: Karen Mims  
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Subject: PHASE II RESPONSE

Reference: RFQ-484-120315

Project Number(s): N/A

PI Number(s): N/A

Country(ies): Statewide

Description: Intelligent Transportation Systems (ITS) Operations and Support Services,  
Statewide

Dear Ms. Mims:

Serco Inc. (Serco) was pleased to receive the announcement that we were selected and shortlisted as a finalist and eligible to submit a Phase II proposal. Our Phase II submission included this cover page, Technical Approach and Past Performance as outlined in Section VII of the referenced RFQ. Serco is submitting one original and five identical copies (Submittal #1) and an electronic version (Submittal #2).

We look forward to continuing to demonstrate our overall understanding of the GDOT statewide goals. Our ability to consistently meet your requirements is enhanced by our evolutionary Serco Intelligent Management and Monitoring (IMMS) System.

Each of our team members bring innovative solutions that have won multiple awards for Georgia relating to cost and energy savings and, better situational awareness, while fostering economic growth within the community and disadvantaged business sectors.

Our Team includes exclusive strategic partnerships and this team is led by Matt Kirby, an outstanding Program Manager who is fully dedicated to the project and available to you 24/7/365.

If you have questions, please don't hesitate to contact me at 703-939-6671, via email at David.Cornell@serco-na.com or Thomas Sorel at 703-939-6000, via email at Thomas.Sorel@serco-na.com. We look forward to continuing to work with you to sustain a partnership bringing stable, efficient, and well-managed, comprehensive ITS Support Services.

Sincerely,



David Cornell  
Manager, Contracts

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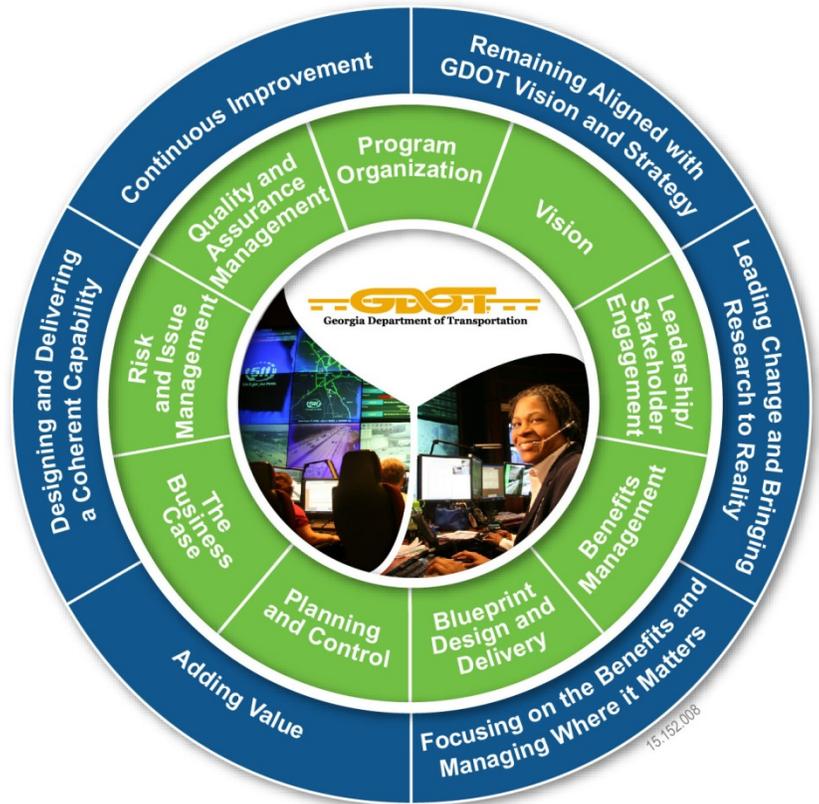
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**1 PROVIDE TECHNICAL APPROACH TO DELIVERING AND MANAGING THE PROJECT; SPECIFICALLY INCLUDING STAFFING, RESOURCE CONSIDERATIONS AND APPROACH IN ACCORDANCE WITH THE SCOPE OF SERVICES, THE FIRM'S APPROACH TO DEFINING SUCCESS OF THE PROJECT, AND ENSURING CONTINUITY OF 24/7 OPERATIONS.**

**RFQ Requirements Compliance :** The Serco Team has thoroughly reviewed the requirements and scope of RFQ Phase I and Phase II and agrees to all terms and conditions and takes no exceptions nor request exemptions.

**Project Management and Governance:** Serco has developed and applied a rigorous project management approach that ensures objectives and benefits are achieved within budget and time and to the required quality to meet your expectations for success. The Serco Managing Successful Programs (MSP) methodology is our proven best practice framework for project management. It draws on our extensive experience of mission critical systems with delivering successful transformations in transportation, defense, citizen services, and healthcare. Our Project Manager, Matt Kirby, employing our MSP methodology is the right person to ensure:

1. Oversight and administration of all work performed by Serco and our subcontractors
2. Administration of the resource allocation plan, ensuring that appropriate resources are available when needed
3. Project schedules will be maintained online, accessible by the Department and provided quarterly
4. Our Team will develop scope, schedule, and budgetary estimates for individual tasks as directed by GDOT
5. Project budgets are tracked and monthly updates, invoices, and cost summaries will be provided
6. Sunset Reviews will be conducted following the completion of major tasks to assess the outcome.
7. Establishment of a Continuous Improvement (CI) team and plan that will examine the service area of Operations, HERO Dispatch, Customer Service, etc.
8. Serco will establish a Risk Register to track and manage risks associated with the project
9. Stakeholder management and engagement that drives success of multi-agency efforts



**Figure 1. Our Program Management Methodology**

**Organization and Multi-agency Interaction/Coordination:** Our organizational structure (provided in Response I) is designed to not only manage the day to day activities efficiently but to advance the project and to introduce innovations through the life of the contract. Mr. Kirby has over 15 years of experience in the management and operations of multi-agency transportation management centers (Northern Virginia and UK National Traffic Control Center) and will be assisted by Jennifer Ganzy and Chris Corcoran who have a combined 20 years of transportation operations experience. In addition to a strong management team, Serco will develop a Project Board. This group is tasked with the mission to ensure we exceed customers and partner agency expectations. This group is further tasked to ensure the team is also focused on advancing the project further as new processes, techniques or innovations are created. With this team of experts, GDOT will see the project achieve and remain a best-in-class project.

Particular to the colocation of agencies in the TMC, Serco, using the direct experience of Mr. Kirby and our management team, will introduce key strategies to ensure the seamless interface of multi-agency environment operations such as:

- Working closely with the other agencies, gain an understanding of the roles responsibilities and requirements of all parties within the control room. Development of a Stakeholder Engagement Plan.

**Georgia Department of Transportation (GDOT) Intelligent Transportation Systems (ITS)  
Operations and Support Services, Statewide**

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- Develop Joint Operation Policies and Memorandums of Understanding detailing multi agency interactions and applicable processes, procedures and responsibilities relying on NIMS principles as our foundation.
- Provide awareness and where relevant train TMC staff on the other roles (GSP/GDOT RTOP/SRTA). Reciprocal TMC training will be provided to other agencies.
- “Lessons learned” desk top exercises involving all agencies, based on historical incidents.
- Regular debriefs focusing on major incidents developing learning points and continuous improvement.

**Staffing and Resource Considerations [Demand-Based Scheduling:** Serco will bring our professional experience and unique tools to ensure our people deliver 24x7 operations. Our web-based scheduling tool, WhenToWork, is integrated with our Program Vision (PV) Business Intelligence (BI) and program dashboarding tool (described in Question 4 response). Serco will use PV’s exceptional data interface capabilities to collect historical as well as forecast information from diverse sources including the ATMS (allowing us to look at demand on a day, shift basis and workload for an individual operator; with the ability to categorize by TMC function including 511, Hero Dispatch, etc.), TIR application, Macon Customer Service application, and HR systems, to develop a demand-based schedule to optimize staff efficiency and customer service while minimizing costs. WhenToWork, is used to schedule employee shifts. This software allows employees to sign up for available shifts, request leave and shift changes through approvals via the Supervisor. The ease of use and peer change request ensures coverage aligns with demand, integrating full and part time employees. The benefits include; reduced absenteeism, easy supervision of staggered shifts, scheduling requests, effective scheduling of training, time off, and coverage for sick leave. We ensure all positions are staffed yet allow our people personal flexibility, creating a much better work environment. The Serco management team will also refine the schedule in coordination with GDOT (as desired) and ensure that the appropriately skilled workforce is always available. All of our tools will be available to GDOT for full transparency and included within our solution. Serco will cross-train and certify staff including management across TMC functions including operations, HERO dispatch, etc. The Serco Management Team will be required to work a shift at least twice per year, as a hands-on understanding of the job produces effective managers; an additional benefit is an extra set of trained resources during emergencies.

**Transition:** Serco takes great pride in the manner and tremendous success in which we transition programs without disrupting service. This was previously experienced by GDOT operations in 2007 when we successfully transitioned 100% of the staff. We treat incumbent employees with respect and ensure strong communications, reducing anxiety and creating an unparalleled trust. Serco will provide an on-site transition team to work with GDOT, incumbent management and every employee. Employees will receive clear and straight forward communication on the Serco expectations, our intent to retain these employees (subject to agreement with the department), and the transition process including a timeline. We will work diligently to retain managers that the department feels have performed well. We have already been approached by a number of former Serco employees (currently GDOT TMC operators and managers) expressing a clear wish to join/rejoin Serco. Based upon our experience in transitioning hundreds of projects, Serco expects to retain in excess of 95% of the work force but understand there will be a need to hire and train new employees to ensure continuity of operations.

**Employee retention:** Our people are our greatest asset in delivering the program as well as continuous improvements. Accordingly, Serco invests aggressively in employee retention. Serco rewards achievement with our award system, encourages personal development (contract specific training and personal) creating an inclusive environment where staff feel appreciated and are engaged. Our annual Viewpoint survey provides employee insight and feedback into things that we can do better. As proof to our success, in a national survey of all US companies, *Forbes ranked Serco the nations #1 Top Service Business Employer in 2015*. During our previous tenure with GDOT, our retention rate increased achieving a rate greater than 90% at contract conclusion.

**Employee Development / Training:** Recognizing that personal development is critical to reducing turnover and retaining employees, Serco will deploy our Competence Management Model (CMM) which will benefit both GDOT and our people. The CMM is a continuous improvement tool used by Serco to develop employee performance. We identify the characteristics, traits and competencies that make a good Operator and use these in our recruiting processes. All employees must satisfy the requirements of the initial training and pass a certification process. However the real drive of the approach is regular re-assessments, retraining and coaching. This forms the basis of a continuous cycle that drives improvement throughout the life of the project. The approach allows for re-training to new best practices as well as feedback from our quality control measures. Our subject matter experts deliver training including; classroom activities, interactive tools, tabletop exercises, after action reviews, and practical hands on experience in a controlled environment with a Supervisor or experienced Operator. Throughout this training process we engage our Serco Human Learning &

Capital team who specialize in training delivery methods such as Learning and Recognition Management (LRM). Our LRM portal in an open source learning environment providing relevant training, tools and a non-threatening competition environment where our people can “rank” their score and compare with teammates. Here our manager can gain an immediate insight into employee engagement, experience and capabilities. In addition to formal training, we embed a culture of ownership and responsibility within our employees; this is supported through the appointment of Competence Champions. The champions are engaged in regular forums to review and discuss QA/QC feedback and new training materials; they also act as a conduit to provide employee feedback.

**Continuous Improvement (CI) / Innovation:** Serco has built our entire business around delivering improvements that generate real, tangible benefits. In many of our contracts we are incentivized only by making incremental and continuous improvement. Serco will establish a Continuous Improvement Committee of stakeholders that will be responsible for developing a CI Plan and driving continuous improvement and innovation across the project and for ensuring the coordination of initiatives between services as well as their integration with broader transformational initiatives that may extend beyond this contract (ITS Maintenance, HERO, GSP, SRTA, RTOP, etc.). The Committee in partnership with GDOT will determine which opportunities offer the greatest benefit to the project and are to be implemented.

Particular to the NaviGator software (III and beyond), Serco has been partnering with Parsons on their GIS-based ATMS software on a separate project. Our experience and lessons learned will be available to GDOT and our detailed testing approach is further described in the Question 2 response. To ensure linkage between operational improvements and software enhancements, Serco will request a seat and actively participate on the ATMS CCB. Additionally Serco will draw upon the findings from our Center of Excellence (COE) for Transportation which is focused on the research and development of process and technology improvements and emerging solutions in the transportation sector. The Serco COE evaluates the needs of our customer, tools, and processes to improve effectiveness and facilitate training and development programs. Current COE activities include Performance Measures, Social Media and Connected Vehicle implications on operations. These services are freely available to our managers and customers. Further evidence of Continuous Improvement / Innovation is available in our responses to Questions 2 & 4.

**System Performance & Benefits:** Serco, utilizing performance tools as well as Modeling and Simulation tools will be working with GS&P to produce System Performance & Benefits information both using data visualization technologies (dashboards), modeling and standardized reports/documentation. (Refer to Question 4 for further details).

**Incident Timeline Process Improvement:** Serco has previously developed a performance tool that collects data from the Parsons ATMS and identifies all the Incident Timeline points. Using the tool we can identify critical elements including operator, location, weather, incident type, etc. This data can be filtered by input to derive corresponding improvements/results (Refer to Question 4 for further detail).

**GRITS:** Gannett Fleming (GF) has developed ITS Architectures and strategic plans including New Hampshire DOT. GF will review the current architecture; engage stakeholders as appropriate; and update to adhere to FHWA requirements.

**ITS Benefit Cost (B/C):** Recognizing the multiple B/C models used in the transportation industry, Serco and our partners will work with GDOT to identify the model that provides the most flexibility to incorporate the many factors to be considered in the NaviGator system to generate the most accurate B/C analysis.

**Special Studies:** Serco and our partners GS&P, GF, and Vision Engineering Partners offer our experienced staff to support/engage in special studies that may arise from time to time such as:

- Traffic engineering and planning with an emphasis on traffic analysis using various software packages; Highway Capacity Software, Synchro and Microsoft Excel for traffic impact analyses, VISSIM and CORSIM for developing traffic simulation models, and CUBE for conducting travel demand forecasting
- Public and stakeholder outreach programs
- ATMS enhancement and technology integration

**Customer Service:** Serco is well versed in direct customer service across many industries including citizen services, healthcare and transportation. We will bring cross-industry customer service best practice for consideration by GDOT. Previously, Serco has provided GDOT operations room staff that directly and professionally communicated with the public and emergency service agencies, achieving exemplary ratings. Currently, Serco operates the VDOT Customer Service Center (independent of TMC operations) that receives calls from agencies and the public pertaining to roadway maintenance, traffic signals, road closures, etc. Serco uses a customer service tracking system (database) to ensure that all activities are recorded and requests responded to in a timely fashion. Recognizing that Macon TCC has a similar system,

Serco intends to use our PV tool to provide a performance dashboard with drill-down capability for the Task Management Tracking database as well as for the ATMS Operations.

**2 PROVIDE ANY UNIQUE QUALIFICATIONS, SKILLS, OR KNOWLEDGE WHICH YOUR FIRM HAS WHICH COULD BENEFIT THE PROJECT, AND YOUR ABILITY AND WILLINGNESS TO MEET TIME REQUIREMENTS.**

As the Department has seen from our Past Performance section, a Serco operations solution brings unique qualifications, skills and knowledge advantages. These include:

**Performance:** Our unique methodology and PV tool links performance, processes, resources and systems at all levels to transformational goals to provide strategic control of the transformation program. Serco integrates fully with existing operational performance management technologies and provides visibility of performance aligned to goals at all levels including use of data visualizations including geospatial representation. We apply a philosophy of “Manage what Matters” focusing where results/benefits are achievable, generating wins and maximize return on investment for the customer.

**Incident Management:** The Serco Team brings a unique approach to managing TIM for GDOT. Particularly Eric Rensel from GF will be bringing his expertise to the project. Eric was recently recognized for his national incident management expertise and appointed to the Technical Advisory Committee (TAC) for the National Operations Center of Excellence (NoCoE) in January. GF has led the NOCoE TIM peer exchanges including the SHRP2 TIM Training workshops. Serco recommends GDOT participate in the event planned in 2016 between the NOCoE, ITE, and the International Association of Chiefs of Police to develop a local jurisdiction outreach plan targeted as emergency services and public works. Serco requires all TMC personnel have rigorous incident management training to ensure full understanding of the Incident Management Timeline, Standard Operating Procedures, the importance of maintaining situational awareness, and tools such as PV, and interoperability. Our TMC approach is to provide operators with the tools they need to be most effective in their role. SHRP II training allows operators to understand the roles of all incident responders and how to coordinate effectively. We conduct quarterly, internal, table top exercises and at least one multi-agency exercise each year which will help modify SOPs and training based on lessons learned.

**Technology:** Serco has developed, written and delivered user acceptance tests (UAT) and UAT scripts for the most recent version of the Parsons’ GIS based ATMS system for VDOT including assembling an ATMS test facility. Our expertise includes developing user requirements, pre-production testing, iterative development of UAT scripts, UAT testing and detailed post testing debriefs. As well, perhaps not to the same level of detail as our current efforts, Serco also supported the GDOT transition from NaviGator I to NaviGator II during our previous TMC Operations contract. We are uniquely experienced in NaviGator software transition and poised to support GDOT with this critical activity as the NaviGator system matures and develops over time. We understand that the new managed express lanes here in Atlanta will utilize Cameleon to manage systems including cameras, signs, gates, and other field hardware. Our Georgia based team have extensive experience with the implementation, operation and maintenance of Cameleon uniquely placing Serco to support GDOT as necessary.

**Operations:** The Serco Team offers GDOT professional traffic engineering expertise to analyze traffic flow in highly congested or problem areas and to make recommendations to solve traffic operation problems and improve traffic flow. We have unique expertise from Dr. Stephen Parker, P.E. in modeling and simulation to analyze traffic operations with many variables (speed, volume, classification, turning movements, travel times, etc.). We have extensive experience with the analysis of traffic data (directional flow volumes, accident statistics and/or speed samples) and the application of this data to the traffic signal warrants outlined in the Manual on Uniform Traffic Control Devices. Serco offers traffic signal timing and phasing experience including the development of coordinated system timing plans and before and after evaluations of signal system performance. *Serco proposes placing one of our traffic signal engineers in the Macon TMC to lead the traffic signals activity.* Serco has extensive US experience managing the Reversible Roadway (RR) systems on the I-95 corridor in Northern Virginia and I-64 in Norfolk. Serco brings unique experience developing and implementing RR standard operating procedures and safety task analysis linked directly to improved operations and availability. In the ATM space, Serco provides end-to-end services from conceptual advice and design innovation through to operational performance optimization. Our systems bring the operational flexibility to allow ATM including Variable Speed Limits to deliver benefits to the travelling public and operating stakeholders by making the best use of existing road space to alleviate congestion and improve safety. For VDOT, we have introduced a number of CI Initiatives, those with particular relevance and value to GDOT TMC operations which we plan to implement include:

- TMC Control Room Personnel Exchange and Cross-training - This assists with communications and relationships between the operators of co-located agencies, provides experience and allows for exchange of best practice ideas.

- Traffic Information Accuracy – Using the NaviGator ATMS and our PV tool, Serco can identify struggling operators and provide assistance to increase accuracy and timeliness of information to the public.
- After Action Reviews - To improve incident duration by examining real-life experiences by identifying areas for improvement and best practices.
- HERO/TOC ride-along/exchanges - To create a greater understanding and appreciation of the TOC and SSP roles which will help improve incident safety, incident clearance and communications.

In accordance with Question 2 Serco is able and willing meet time requirements

**3 IDENTIFY ANY UNIQUE CHALLENGES OF THE PROJECT AND HOW YOUR FIRM INTENDS TO MITIGATE THESE CHALLENGES, INCLUDING QUALITY CONTROL AND QUALITY ASSURANCE PROCEDURES.**

**Arterial Operations:** Serco will partner with GDOT to further develop the approach integrating RTOP into TMC operations to optimally manage incidents effecting the interstates and arterial corridors. We will leverage our experience with complex program integrations of arterial operations with NTCC and Virginia’s Northern Region which contains our Signal Operations Center (SOC) co-located in the TMC. Our experience includes managing the signal system for timing strategy, adaptation for weather events, emergencies and congestion

**Reversible Roadways (RR) & Gate Operations (GO):** Serco will partner with GDOT to integrate RR and GO into the TMC environment. Due to the critical safety concerns, operations of reversible roadways and gate operations should only be operated by a company with significant expertise and experience. Serco brings this expertise and experience by managing Reversible Roadways on the I-95 corridor and I-64 in Norfolk VA. Matt Kirby, Jennifer Ganzy and Chris Corcoran have direct experience with RR operations including gates, signing, and the strategic deployment of HERO patrol staff. Our team provides expertise and best practices where GDOT will see immediate value.

**Improving Incident detection:** Critical to any effective TMC operation is a clear focus on early incident detection. In addition to utilizing CCTV tours, ITS equipment checklists and proactively working with the HERO team to monitor and patrol known hot spots, Serco will employ data analytics to generate heat maps based on varying factors and identify areas for increased focus. Serco recommends video analytics as a detection tool and in particular exploring the traffic vision product that can be used with PTZ equipment.

**Quality Assurance and Quality Control (QA/QC):** QA/QC drives improvement in how we deliver services; we continually (real-time basis) review performance through PV data capture and development of metrics, post event analysis and process reviews. An independent review of metrics and process application will be conducted weekly by Mr. Kirby and independently by our Vice President, Enterprise Program Management Office (EPMO). The objective of our approach is to minimize risk, maximize operator efficiencies through enhancing operational procedures and provide operators the right tools and training to perform their duties in a safe, consistent, and professional manner. Our quarterly audits are at the heart of QC, the objective is to identify risks and issues and quickly take actions to drive improvements.

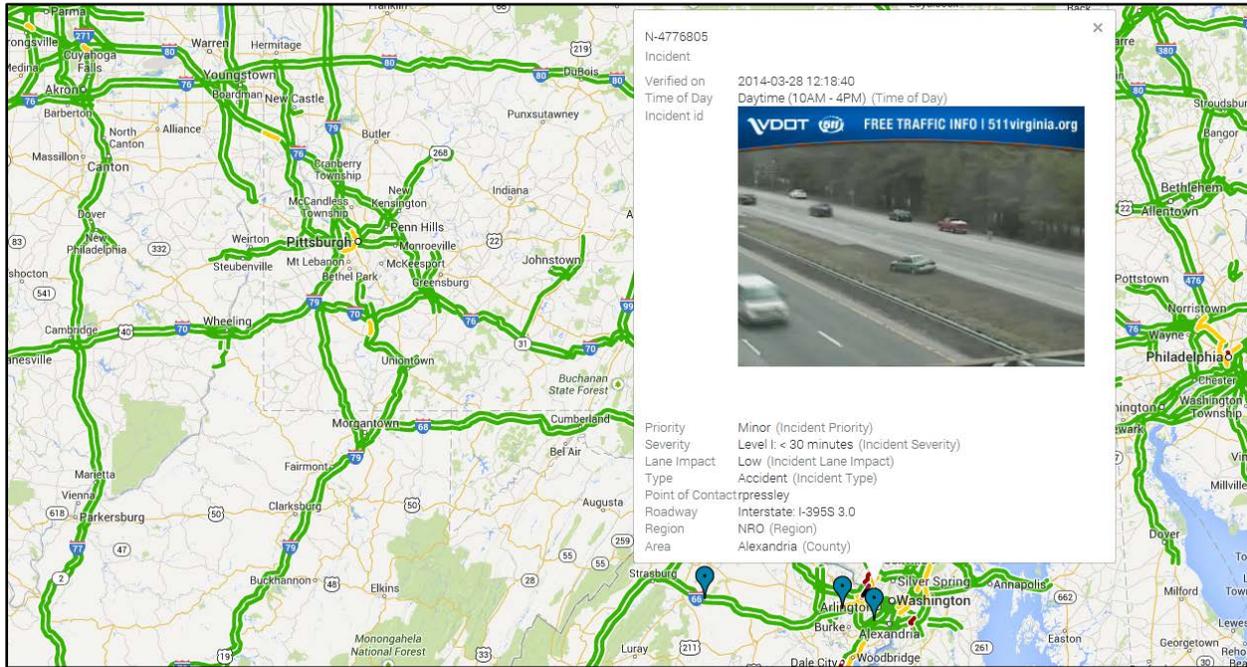
**4 PROVIDE ANY DISTINCTIVE TECHNICAL APPROACH YOUR FIRM OFFERS RELATIVE TO ADDRESSING ANTICIPATED OPERATIONAL CONCEPTS AND USE OF ANY ALTERNATIVE METHODS FOR DELIVERY (IF APPLICABLE).**

PV is our state of the art BI and performance reporting tool providing real time reports, dashboards with analytics and provides a unified framework to publish contextual management information. We will deploy PV at the GDOT TMC which will deliver several benefits:

- Enable performance evaluation of our people down to the operator level, assessing competence, incident management, accuracy of information delivered to the public, accuracy and timeliness of incident response plan execution and provide for the collation and analysis of TMC performance data.
- Enhance other systems with data analytics such as RTOP, Macon Customer Service, and the HERO program. For HERO, provide detailed analysis of incidents based on factors including time of year, day, and incident type to optimize the use of HERO resources, augmentation of patrol routes and staff, and asset deployment. Currently utilized in SSP and Operations, PV enables traffic incidents to be displayed on maps to create situational awareness that facilitates well-informed decisions with regard to incident response and the efficient use of resource deployment.
- Provide congestion and incident data, through the unique heat map visualization which can be further refined by incident type. This vital information can be leveraged as a performance measure across the wider NaviGator system

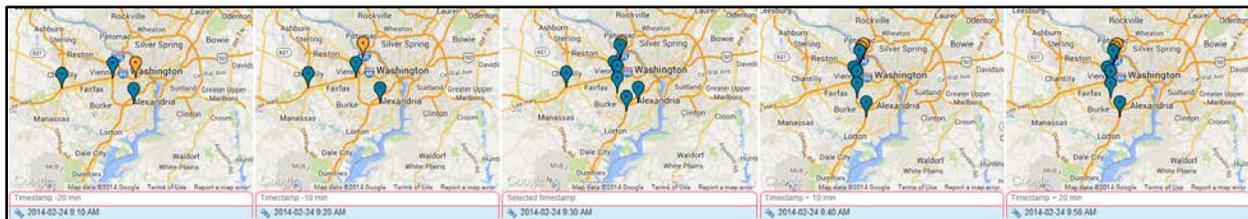
to aid in system justification studies and hotspot analysis for strategic HERO staging, and justification for further ITS asset deployment. Serco can provide raw data or aggregated, and with the appropriate analysis applied.

- Serco will import performance information from the high performing sister ITS Maintenance contract to give a complete holistic overview of the GDOT ITS statewide system.
- Provide incident and situational awareness to GDOT/Serco Team management enabling monitoring of progress, and report on pre-set and industry-recognized TIM stages of an event or incident. All the available timestamps are obtained from the ATMS to give the insight needed to determine when a certain step, within the incident handling process, has been completed.



**Figure 2. PV Integrated with ATMS System - When Integrated with the ATMS System, the Tool Will Look for any CCTV Assets Available That are Close by and Display Live Video Feed.**

- Enables historical incident analysis to display incident information in a chronological order. Secondary incidents are identified and related to the primary incident. This facilitates exercises that look at lessons learned and facilitates the adjustment of operational practices to drive continuous improvement.



**Figure 3. Timed Snapshots Showing Series of Events - A series of timed snapshots that allow us to look at a series of events, such as related or secondary incidents.**

- Document Management - Serco will extract the value of your investment in the existing documentation and identify gaps or missing pieces to make effective use of what currently exists. To ease future document development, Serco will create an interactive web-based document using Microsoft SharePoint capabilities to allow for traceability and version control.
- Serco proposes effectively using NaviGator III in a remote capacity such as the Serco offices in Smyrna. A benefit to this solution is gaining hands-on critical knowledge of the opportunities and drawbacks of remote TMC operations in advance of a critical event that may leave the TMC inoperable and would complement a disaster preparedness plan.