**The Georgia Joint Agency Transportation Data Acquisition and Management Program: Building Regional Data Alliances to Drive Industry-wide Innovation**

Georgia Department of Transportation and Atlanta Regional Commission

**Executive Summary**

The Georgia Joint Agency Transportation Data Acquisition and Management Program is a comprehensive initiative developed by the Georgia Department of Transportation (GDOT) and the Atlanta Regional Commission (ARC) to improve the Big Data acquisition and management processes. The Program aims to enhance data analytics capabilities, reduce data duplication and associated analyses, and lower overall agency costs. Through collaboration, workshops, and stakeholder engagement, the Program has established guidelines, policies, and funding for interagency data acquisition. ***By leveraging standardized analytics tools and bulk data purchasing, the program has brought an estimated $3.14M in annual agency savings*** ***and intangible benefits such as improved project development and data analysis equity and standardization for projects and agencies – regardless of size or geography.***

**Background**

In 2017, ARC engaged GDOT and other regional transportation agencies to obtain their input for several initiatives, including updating the ITS architecture, initiating data governance procedures, and creating a TSMO Strategic Plan. The efforts established initiatives focused on enhancing data sharing and management to support enhanced data collection, curation, access, and archiving capabilities for improved performance measure analysis and real-time systems management and operations.

As ARC’s effort finished, GDOT’s Office of Traffic Operations compiled and shared Georgia’s input to The Eastern Transportation Coalition’s (TETC) data marketplace. GDOT felt it was essential to provide TETC and the data community with a better understanding of Georgia's values, needs, and desires. Upon completion of that effort, the group realized the overwhelming and overlapping needs among the group members.

The team requested approval from ARC and GDOT’s executive leadership to create an interagency group to develop a comprehensive and centralized data acquisition program to:

1. Enhance and standardize data analytics capabilities for all projects.
2. Eliminate unnecessary duplication of data and associated analyses.
3. Lower overall agency costs.

Upon approval, the working group identified three immediate actions:

1. Develop an interagency program charter.
2. Identify a funding plan.
3. Develop guidelines and policy recommendations for data acquisitions.

The working group created a written agreement to memorialize their actions and motivations to ensure long-term success and buy-in. This agreement took shape as a program charter. The program charter identified the scope and created the mechanisms for membership. The voting representation was set at three members for ARC and GDOT each and also required that business units be limited to one voting member, thus ***ensuring expansive representation and institutionalized collaboration***.

The working group evaluated each agency’s data purchasing history. It was determined that GDOT and ARC expend considerable resources to acquire data, but they are overlooked and inadequately cataloged. Moreover, the practice of project-by-project purchasing resulted in data duplication. It became evident that by reducing unnecessary data duplication, providing more robust and standardized analytics tools, and purchasing in bulk, the Program could reduce overall agency costs.

In August 2021, both agencies approved the Program with a 3-year budgetary phase-in of up to $5 million per year dedicated to data, analytics, storage, and support. It also provided for Big Data research, development, and experimentation, which the agencies identified as a vital component for fostering innovation and developing new use cases for divisions like design, maintenance, and construction.

**Advancing Quality Through Partnership**

With a foundational structure developed and annualized funding secured, the working group became an official program recognized by GDOT and ARC.

In 2023 the attention of the Program focused on developing policy recommendations and guidelines for data acquisitions. The group expanded upon this action by including the following items:

* Licensing requirements for personnel, interagency (including local agencies), and consultant usage.
* Data use and publishing permissions.
* Interagency gap/overlap analysis and best value assessments.

The team reviewed the TETC Transportation Data Marketplace (TDM) RFP, vendor information, and other states’ resources to create a foundation for the current market. Using these assets, the team ***built dynamic querying resources that allowed them to understand the market capacity to deliver specific desires for Program member individually and collectively***. The goal was to expand capabilities beyond the TETC standards to meet Georgia’s specific needs while also ensuring the ability for competition from multiple vendors.

After completing collaborative workshops to identify mandatory and value-add attributes, team members documented their selection and reasoning to further establish a firm understanding of “why” for future use. These additional insights proved critical as they allowed for flexibility to be introduced for individual attributes to maximize marketplace competition while securing the needs of the Program members.

As they created Georgia-specific guidance, the group determined that utilizing the principles developed by TETC would make the most sustainable foundation. Similar to how agencies use national standards for signing and marking or road design, the group felt that this created a mechanism for consistency and the ability to leverage national expertise while providing flexibility for the state to strengthen specific requirements. Further, they utilized an approach employed by VDOT’s supplemental MUTCD to help the data vendors in the TETC Marketplace identify changes. Requirements within TETC’s Marketplace identified as mandatory were denoted in black text, blue text (i.e., blue text) denoted Georgia-specific text added or modified, and blue strikeout text (i.e., ~~strikeout~~) to indicate a requirement is no longer in force.

Once the Georgia-specific guidelines were complete, they were shared with all TETC vendors for open comment and conversation. GDOT and ARC have a strong history of engaging private sector partners, and they encouraged regular iterations and adjustments based on the feedback they received. Further, the team members engaged national experts from the National Renewable Energy Laboratory and TETC to understand the marketplace shifts.

**Building Effective and Transparent Evaluations**

Using these guidelines, the team built worksheets to engage TETC vendors to understand their current capabilities. Rather than traditional long-form responses, these worksheets identified the minimum viable data attributes and allowed for concise responses for vendor-proposed deviations (if needed).

Additionally, like all technologies, the team members recognized that additional inputs beyond minimum viable requirements would be advantageous for evaluating the available datasets. As such, they again utilized the outputs from the workshop and interviews to identify specific data attributes that did not rise to the level of a minimum standard but met one or more of the following criteria:

* Identified use-case.
* Cost-reducing potential.
* Data quality improvement.
* Expanded geographic reach.
* Well-distributed data among rural and low-volume roadways.

This approach significantly reduced the level of effort for vendors to provide their feedback while also providing critical information for the Program. Moreover, it allowed for ***rapid and consistent evaluations*** by the Program members for minimum viable requirements as well as value-adds that differentiated each vendor. Using this approach not only added selection transparency but assured that the team members could find the highest quality product that met the most needs and aspirations. This information, combined with cost, allowed the Program members to find the best value data to meet the collective needs of the state and region.

**Results**

At the completion of the evaluations, the Program members selected statewide datasets for speed/travel time, origin-destination/trip, freight, and connected vehicle/telematics data with open-agency analytics capabilities. Program members elected to forego acquiring volume estimation data while the industry continues to improve accuracy.

The Georgia Joint Agency Transportation Data Acquisition and Management Program team members identified direct financial and intangible benefits. Moreover, using this model, ***GDOT and ARC have grown to over 1,000 total Big Data users from over 40 agencies and consultants throughout the state and won accolades from professional organizations.***

*Direct Financial Benefits*

Team members completed a financial comparison to understand if the anticipated benefits had been realized. When accounting for the acquisition of open-agency and perpetual-use licenses for speed/travel time, volume, and O-D/trip in addition to expanded consultant support and software enhancements, ***GDOT and ARC conservatively estimated a direct annual savings of $3.14 million.***

*Intangible Benefits*

Additionally, the comprehensive interagency data acquisition and management program has helped position both agencies to address their agency-wide goals better. These include, but are not limited to:

1. Address the implementation of 7 of the 8 initiatives and 21 of the 38 of the associated primary actions outlined in ARC’s TSMO Strategic Plan.
2. Position Georgia for rapid, statewide, low-risk deployments of connected and autonomous vehicle technologies and applications.
3. Direct cost savings for all statewide local agencies and consultant partners.
4. Data-driven ability to deviate from standards to create more practical, location-specific, and cost-effective designs.
5. Uniform and equitable data analysis capabilities, regardless of project geography, size, or budget.
6. Immediate access to data for project development and delivery.
7. Enhanced capabilities for project justification and visualization during public forums.
8. Consultant data transparency.

*Community Recognition*

The Program has garnered significant accolades from various industry leaders, underscoring its profound influence on transportation data management.

The Intelligent Transportation Society of Georgia (ITSGA) has praised the Program for its extensive training sessions and information dissemination efforts. These tailored trainings, designed for both new and seasoned professionals, have enabled a broad audience to leverage Big Data effectively. By involving members from ITSGA, the Georgia Section of the Institute of Transportation Engineers, the Georgia Association of Metropolitan Planning Organizations, and the Georgia Chapter of the American Council of Engineering Companies, the Program has fostered an inclusive and collaborative learning environment. This has led to improved strategies in capital projects, statewide studies, and operational programs, thereby enhancing performance and transparency across the transportation sector. ***ITSGA’s recognition of this initiative with their Innovation Award highlights the Program’s exemplary leadership and innovative approach***.

Similarly, TETC has lauded GDOT and ARC for their proactive engagement in the Transportation Data Marketplace program. In letter of support Patricia Hendren, Executive Director of TETC, stated that, ***“By enhancing transparency, fostering collaboration, and realizing cost savings for state governments, initiatives such as the Joint Agency Data Management Program set a benchmark for excellence in our industry.”*** In addition to the powerful statement from an industry leader, TETC’s invitation to GDOT and ARC to present their process as a best practice further emphasizes the Program’s commitment to transparency and collective progress.