Georgia Department of Transportation Ensures Safety and Incident Management with Emergency Response Technology

The state of Georgia is home to the world's busiest airport01, one of the country's top five busiest container terminals02 and an outstanding network of interstate highways and state roads. With substantial investments in the state's transportation infrastructure, the Georgia Department of Transportation (GDOT) was looking for a technology solution to reflect its vision, "Enhancing Georgia's competitiveness through leadership in transportation."

Specifically, GDOT saw the need for a technology solution to keep traffic moving through the state, especially in its densely-populated urban areas. GDOT wanted a solution that would streamline daily operations and strengthen emergency preparedness.

Today, GDOT uses WebEOC, Juvare's sophisticated information management solution. WebEOC enhances situational awareness with information visualization and real-time data sharing during day-to-day operations, special events and emergencies, including extreme weather events and accidents. WebEOC enabled GDOT to better track departmental missions, tasks and jobs and save time aggregating costs for required Federal Emergency Management Agency (FEMA) reimbursement and reporting.

The Challenge

GDOT plans, maintains and responds to incidents on the state of Georgia's roads, bridges, highways, waterways and other modes of transportation. With an increase in traffic, especially in densely populated urban areas, GDOT wanted a comprehensive information management solution to streamline daily operations and strengthen emergency preparedness.

The Solution

GDOT now uses WebEOC, Juvare's sophisticated information management solution, to visualize and share data in real time. In addition to supporting daily operations and emergency response, WebEOC is used to track missions, tasks and jobs throughout the department for improved transparency, manage and deploy resources and aggregate costs for FEMA reimbursement and reporting

39	**500**	**24/7**
Area offices	Immediate users	Access to cloud-based technology

Making the Move to WebEOC

As a leader in transportation, GDOT explored the idea of developing an emergency operations application internally. However, they ran into complications trying to manage both daily operations and emergency situations with one solution. Additionally, the time required to build the in-house solution appeared prohibitive and it looked like it would be expensive to enable communication with different technologies from various counties.

Shortly after starting development of their homegrown technology, the Chief Information Officer and Director of Information Technology at GDOT, Jeffrey Hill, had a meeting with Georgia Emergency Management Agency (GEMA) and saw them using WebEOC.

During that discussion, he turned to his staff and asked, **"Why aren't we using this?"**

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GDOT was looking for a technology solution to help them:

- Identify and respond to daily operations and large-scale events

- Prepare for and respond to weather emergencies

- Exchange information with the media and other responders at the state, local and federal levels

- Collect and analyze data to improve planning and decision making

- Aggregates costs for FEMA reimbursements and reports

- Generate HWA and EPA reports

- Provide 24/7 access to up-to-the-minute information from web browsers and mobile devices

- Generate GDOT highway reports and notifications

- Implement consistent response processes during disasters

- Integrate with critical legacy systems

Technology to Enhance Community Safety

Vehicular accidents, road closures, highway construction, maintenance activities and severe weather can lead to traffic gridlock, with serious potential for compromised safety and negative economic impacts. In an effort to address these and other concerns, GDOT entered into a discovery session with Juvare.

> "When we sat down with Juvare for the first time, **an all-in-one technology** was the direction we wanted to go. We did not want to have to manage a separate application during emergency events. The main reason was for day-to-day operations."
>
> - **Jeffrey Hill**, Chief Information Officer & Director or Information Technology
> Georgia Department of Transportation

Daily Operations

Due to the customizable nature of WebEOC, it looked like the platform would meet the GDOT's needs for daily operations. Inventory management, resource requests and the deployment of resources and personnel were a few of the daily items GDOT wanted to address. During discovery, it quickly became clear that WebEOC was the answer.

Managing missions, tasks and jobs throughout the department was another important process GDOT wanted to support with the new solution. In conjunction with GDOT's organizational chart, WebEOC utilized several methods for grouping employees by positions and job duties. User accounts, positions and groups were defined by GDOT leadership, and different levels of rights are assigned based on the position users select during the login process. Group, position and individual permissions can be changed, updated or deleted at any time.

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> "We needed the ability to change permissions and job duties **easily and quickly**, and integrate with our HR software, PeopleSoft. If an employee is here today, they have an account. When we hit the termination factor in PeopleSoft, the system automatically wipes them out of their account from both PeopleSoft and WebEOC."
>
> — **Jeffrey Hill**, GDOT

GDOT now uses data from their HR System to systematically create and disable user accounts in WebEOC. This feature simplifies their account management across multiple applications, making WebEOC their one-stop-shop for technology integration.

Emergency Operations

Although management of daily operations was a main focus for GDOT, the ability to quickly and accurately respond to emergency events was also important. This requirement was satisfied in part because WebEOC allows GDOT to shift, in a matter of minutes, from 30 daily users to 500 users during an emergency.

With WebEOC, the average user can be trained in 10-15 minutes at the scene of an emergency event. Since WebEOC is also used for day-to-day operations, such training could feasibly occur prior to events, so users are properly prepared for those dire situations.

> "For the first twenty-four hours of any event, agencies will spend time either creating an account, resetting passwords or showing people how to use their emergency operations technology. If an event lasts 90 hours, twenty four hours of that time is wasted. Most agencies don't pull up their emergency operations technology again until the next event happens. **With WebEOC, we no longer have this problem**."
>
> — **Jeffrey Hill**, GDOT

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REAL-TIME COMMUNICATION

WebEOC allows GDOT to request responder check-ins and get acknowledgments in real-time. With its IMX Connect app, WebEOC sends push notifications that are delivered like text messages to groups of users that fill out a form. For the first time in the state's history, construction and maintenance workers were able to submit daily status reports from the work site using their mobile devices.

MAPPING CAPABILITIES

In addition to asking responders to provide information, GDOT can display incidents on a map in WebEOC. Any WebEOC form can be map-enabled, allowing GDOT to geocode addresses, enter the latitude and longitude of incident locations and automatically add the latitude and longitude of locations based on the GPS in mobile devices. GDOT incidents viewed in WebEOC utilize the Esri-based map viewer called ArcGIS Online (available with the ArcGIS Extension) and other web-based map viewers such as Google Maps.

> "Anything from a tree down to a fatality, **we wanted the ability to enter this information from the field**. This is where IMX Connect, along with Esri's ArcGIS Online mapping, came into play. We were able to see our roads and highways! These solutions actually provide geolocations based on state routes, intersections and cross roads."
>
> - **Jeffrey Hill**, GDOT

Anyone in Georgia can dial 511 on their phone to report a serious accident, road closure or other incident with GDOT's Traffic Management Center. When these reports are received, GDOT dispatches a responder to the scene and WebEOC on the responder's smartphone automatically begins populating the geolocation information. Through WebEOC, this information is instantly available for the Traffic Management Center, GDOT's District Office EOCs, GDOT personnel with WebEOC access, the Georgia Emergency Management Agency/Department of Homeland Security (GEMA/HS) and others.

Incident locations are identified with a specific icon on the map, which can be viewed through WebEOC on a smartphone, tablet or desktop computer. Responders are responsible for updating the incident status as the situation changes. Clicking the incident icon on the map provides traffic managers and other users with the updated status reports.

Geolocation information, taken from the GPS in mobile devices is paired with data from GDOT's data warehouse, which includes road names and numbers, interstate highway numbers and, when possible, more precise measures based on documented highway mile points. In this way, responders are not distracted by having to manually enter information.

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When GDOT managers need to deploy resources from one part of the state to another, they are able to utilize WebEOC with its resource-management capabilities. For example, on a GIS map, response vehicles are represented by icons. Clicking an icon brings up information about the vehicle, with details about the personnel and supplies on board the vehicle, and as necessary, managers can watch in real-time as the vehicle travels across the state. Access to this essential information through WebEOC makes it easier for GDOT managers to more accurately plan logistics, including hotel accommodations, meals and supply restocking.

Further, GDOT is able to complete 80% of required forms based on geo-located information provided through WebEOC at the time of the incident. WebEOC auto-populates these forms based on options created by GDOT or found in the form history. These capabilities are used every day, but they are even more vital when GDOT can use them during the state's response to an emergency.

GDOT: Leading the Industry

Today, GDOT's use of WebEOC provides real-time information to support daily operations and enable fast and effective response to emergencies. The significance of GDOT's technology choices is difficult to quantify in terms of public safety and economic competitiveness statistics, but the information these solutions gather is broadly shared and, as a result, considered indispensable for coordinated and comprehensive response to any situation affecting Georgians' mobility.

> "We are comprised of seven district offices and 39 area offices. There is a routine maintenance headquarters in every county. The requirements in the past were that, every hour, an update had to be sent to the DOT Emergency Operations. The update was then prepared and sent over to the State Operations Center. **You spent a lot of time compiling this information** with updates."
>
> - **Jeffrey Hill**, GDOT

Efficient transportation networks and effective traffic management are essential for safety, as well as economic development. Innovative technology is at the center of GDOT's strategy to keep traffic moving smoothly throughout the state–especially in densely populated metropolitan areas–regardless of the situation.

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> "I think what separates us from a lot of other states and agencies is that they only use their technologies during a major events; they are not realizing the full functionality of their applications. We brought a lot of our roadway sensors, mapping features and ability to track vehicles in WebEOC. So **it ends up being THE portal to everything we do**: from day-to-day operations to emergency management. This is where everybody is going to get this information."
>
> - **Jeffrey Hill**, GDOT

WebEOC provides technology consolidation and situational awareness for GDOT, while at the same time reducing labor costs, through feature options that include:

- Enhanced resource management

- Improved intra- and inter-team and agency communication

- Accurate, real-time vehicle tracking

- Faster incident-response assistance

- More effective weather and emergency event planning

- Clear, concise information for drivers

- Effective exchange of information with the media

- Proactive collection and analysis of data to support decisions for improving daily operations and strategic planning for future enhancements

- Required aggregation of costs for FEMA reimbursement and reports

- 24/7 access to cloud-based technology through web and mobile devices

Before implementing WebEOC, GDOT had 30 workers assigned to maintain paper records and spreadsheets. Since WebEOC is more efficient at compiling and storing this critical information, those workers have been reassigned to other duties.

30 Workers   X $50,000 Annually   = $1.5m Annually Conservatively

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Not only has the workforce been maintained in quantity, but WebEOC's ability to automatically populate geolocation information and make it immediately available has also ensured that the workforce maintains its quality. WebEOC has not only enabled GDOT to function more efficiently without increasing its workforce, but also enhanced the personal safety of responders on scene at emergencies. With WebEOC, responders are not distracted by duties that require them to manually enter data. This allows them to focus on the situation at hand.

GDOT's Traffic Management Center and District Office EOCs can access and update information in WebEOC, effectively reducing the volume of phone calls and potential for errors in interagency communications. WebEOC ensures a high level of situational awareness that was previously unattainable. Further, WebEOC add-ons and integrations connect with other state information systems to facilitate communication, information sharing and response coordination across state, local and federal agencies.

Ultimately, GDOT's partnership with Juvare has made the state's transportation network safer and more efficient, supporting its residents and a dynamic, growing economy. With Juvare, GDOT has undoubtedly advanced in today's technology-driven world and they will continue to reap the benefits of partnering with an international organization whose reach is ever expanding..

Resources

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About Juvare

Juvare envisions a future where communities are resilient in the face of danger, joined together in networks of mutual assistance. Juvare stops trouble in its tracks with precise, vigilant and connected technology solutions. Having supported over 500,000 emergency response incidents around the world, Juvare is uniquely positioned to offer enterprise resiliency that enables clients to respond to disruptions and emergencies, and not only bounce back, but bounce forward.

Juvare's global presence is in 25 countries, 50 U.S. states and some U.S. territories. Juvare serves over 3,500 U.S. hospitals and 30,000 individual healthcare facilities, and more than 50 federal U.S. agencies, 600 emergency management agencies and 80 corporations.

Let's Secure A More Resilient Future