

WeGo Enhances Service with Vontas Intelligent Transportation Solutions

WeGo Enhances Service with Vontas Intelligent Transportation Solutions

Nashville Metropolitan Transit Authority (WeGo) serves Nashville and Davidson County in Tennessee, operating 180 fixed-route bus services, 90 paratransit vehicles and provides service to nearly 30,000 passengers daily.



In 2014, WeGo began the search for a centralized system to help boost productivity while maintaining its fleet more efficiently and effectively. The ultimate goal, as with any project by the agency, was increased livability and accessible transportation for a rapidly growing city population. Since adopting the services of Vontas nearly a decade ago, WeGo has been successfully utilizing the company's CAD/AVL solution to do just that.

However, in recent years, WeGo was looking for ways to take its fleet efficiency even further. In 2022, WeGo's Deputy Chief Operating Officer of Operations Systems, Dan Freudberg, approached the Vontas team in hopes of addressing some of the congestion-related travel delays slowing several of the agency's routes.

"Because of the frequent construction within the city, there are significant variations in travel speeds and travel times on a day-today basis, making it very difficult to manage vehicle schedules," Freudberg said. "We were looking at other ways that we could still deliver customers a reliable service that doesn't necessarily rely so heavily on a strict schedule."

"The unique thing about what WeGo wanted to do was to expand our system beyond the yard," said Andrea Costa, Vontas product manager. "They wanted to bring this product to their passenger transit center, which was an entirely new use case for the product." Prior to adopting the newest iteration of Vontas' OnSite platform, WeGo had deployed the legacy yard management solution at its central station and downtown transit facility, but had never rolled the s infra platf "Or arou cove urba We accu in or and prec facil mak The level bloc vehi "W steel satel proc

the system out through the main bus garage due to the challenging infrastructure and complications involved with installing the platform in a heavily concrete building.

"One of the issues with tracking vehicles very accurately in and around our main transfer facility is that it doesn't have great GPS coverage because it is multi-level with a lot of concrete creating this urban canyon effect," Freudberg said.

WeGo wanted to ensure that it could, with a high degree of accuracy, track exactly when its vehicles were departing the facility in order to provide riders with a definite timetable reliable service and accurate bus arrival predictions. However, without knowing precisely when the vehicles were starting or ending trips from that facility, the agency was unable to accurately monitor services or make necessary adjustments.

The challenge with WeGo's passenger transit center lies in its multilevel concrete architecture. With multiple layers of steel and cement blocking any GPS signal, predicting the arrival and departure times of vehicles becomes nearly impossible.

"When our CAD/AVL's GPS is blocked by all the cement and the steel, it can't see the sky anymore, it can't communicate with the satellites and that location is no longer accurate," said Andrea Costa, product manager of OnSite. "Dan Freudberg's idea was to take the technology, the antennas and the tags, install them in the passenger transit facility because they can go beneath the cement and the steel on the ceiling and read the buses that are already tagged." \Im



Expanding the system beyond the yard would mean undergoing an extensive planning and evaluation process in order to accurately survey the facility and gauge how and where the technology would be installed.

"The first step is a very complex process of planning where everything is going to be installed based on that mapping and architectural layout," Costa said. "That helps us come up with an initial concept of how many antennas we will need to achieve the maximum amount of coverage. We also need to make sure that there is a clear line of sight between all antennas and all tags. It's a very comprehensive process."

Once the surveying and mapping phase is complete, Vontas creates a detailed installation guide for experienced third-party installers who ensure that the technology is correctly installed.

Throughout the project, WeGo's ultimate goal has been to accurately monitor the location of all vehicles from both the transfer facility and bus garage while simultaneously tracking when they arrive and depart from the main transit center in downtown Nashville.

"What interested us about the new solution was that it was a true vehicle tracking solution where we could see where vehicles were at all times on a map as well as see whether they were occupying a particular parking spot or a particular bus bay," Freudberg said. "And so, for us, having that level of information we felt would really allow us to achieve what we needed to in terms of pinpointing when vehicles were entering and exiting the transit center."

Once the antennas and tags were successfully installed, Vontas was able to begin integrating the new software into WeGo's existing CAD/ AVL solution.

"Vontas had already done a couple of projects before, implementations of OnSite specifically for tracking vehicles at garage facilities, transit operational facilities," Freudberg said. "But for tracking vehicle adherence to schedule and tracking their progression along a route and tying that into the CAD/AVL system, that was a little bit different." According to Costa, integrating the software requires multiple levels of customer training.

The first phase begins during the project's initial kickoff, by introducing the customer to the technology that has been purchased, how it works and what is needed to maintain it. Then, during the installation phase, rather than installing the technology to the entire fleet simultaneously, Vontas designates a small number of vehicles to utilize as a training tool for key members of the project team.

"Not the entire staff, but just a few key members are getting introduced to the product," Costa said. "Then we expand and install more antennas and tag more buses as we go on, and as the fleet grows and the coverage in the facility grows, so does that person's knowledge of the system." Once the agency's key team members are comfortable with the product and have completed their acceptance testing, a larger scale roll out can begin.

"We can train the trainers where these people who have become experts in the system can train their own staff," Costa said." Or we can go in-person and give our own training to their staff."

With the new application of the Vontas OnSite solution to the WeGo system, the company is prioritizing a slow and steady rollout to ensure every element of the software is running as efficiently as possible.

"We are definitely getting there," Freudberg said. "There is still some work to make sure that the development on the mobile side as well as the back-office, CAD/AVL software end is handling the messages that are coming from the OnSite system as expected and that the OnSite system is generating and sending those messages appropriately."

According to Freudberg, WeGo has continued to work closely with the Vontas team throughout the entire delivery and implementation of the system, assisting with any questions or potential troubleshooting.

"Because of the somewhat experimental nature of the project we have had to collaborate very closely with Vontas and we have worked through things that I don't think any of us were anticipating at the outset of the project," Freudberg said. "Ultimately they are always there to answer our questions or work through to a solution with us."

Vontas and WeGo both anticipate that OnSite will accommodate future ridership growth and satisfaction. The system will help WeGo make decisions more efficiently based on the real-time information and data the agency has at its disposal. Managers receive real-time information regarding vehicle status, vehicle position, delays, and rerouting that dispatch and operational staff can utilize without delays. More than ever before, this allows WeGo to react quickly to changing conditions and continue to provide the best service for its riders. "That is why we love the WeGo team so much," Costa said. "They are so innovative and so committed to their ridership and they come up with really great challenges that give us the opportunity to experiment with our software and find new ways to integrate what we do into these agencies."

