

School Transportation News

February 2004

Gwinnett's GPS Pilot Program Flies High

Alarmed by the increasing threat to homeland security in the form of bus hijackings and the lack of reliable accurate data from drivers about their routes, Grant Reppert, director of transportation for Gwinnett County Schools in Lawrenceville, Ga. took action.

"The absence of reliable accurate data was startling. It had led to significant under funding," Reppert said. "As I worked through my first year, there were numerous other operations we were doing poorly that this technology could improve, particularly in the safety arena. Ultimately it became clear to me that as a large system with large growth (6,000-



Keeping track of Gwinnett's 1,100-bus fleet

7,000 per year), that we would eventually collapse under our own weight if we didn't come up with bus tracking and data management technologies."

With a fleet of more than 1,100 school buses traveling 6,000 daily routes transporting 92,000 students daily, Reppert had his hands and buses full managing the day-to-day operations of the tenth largest school district in the nation.

Reppert wanted to improve safety, emergency response, pinpoint student location and have student medical information at his fingertips. With the combination of Everyday Wireless' bus transceiver hardware and Trapeze Software's MapNet AVL interface, Reppert got what he wanted.

"We have been using what we continue to use as we pilot and implement this GPS/AVL technology," Reppert explained. "It is the magic pencil,

closely supported by the verbal reports of 1,100 drivers. We have routing software, but it has really been a database that contains the routes that were manually created. Every quarter we have taken manual headcounts from drivers, and driver reports of route time. This technology changes all of that."

Now he can monitor the entire fleet of buses in real time. Can also have real world data they can use to analyze route mileage, speed, direction, stop status, emergency status, safety policy compliance, ridership trends and vehicle and driver deployment.

The implementation process consisted of designing a strategic plan, researching technology, contacting other intergovernmental agencies, writing a request for proposals, reviewing proposals, awarding a contract, installing hardware and software and testing and improving.

"The GPS mounting and tracking is very quick. The two lengthy pieces are detailed decisions about what information you want from the data, and the time it takes the software vendor to write the report," Reppert said. "Once we finish our pilots, those will not be lengthy for customers of Trapeze, because the reports will be done. I expect to have all the basic reports for vehicles completed this school year. As we implement more of the student tracking portions of this project, we will no doubt create more reports."

Reppert likened the GPS and AVL equipment to a DVD and its player.

"Everyday Wireless give you the picture, but MapNet allows you to see the picture. Everyday Wireless actually tracks the bus and all of the actions it performs, and transmits that data on every bus every 10 to 20 seconds. The transmission of that data is free," Reppert explained. "If the only reason someone wants this data is to play big

brother to their driver, they could stop here. That would be a waste. MapNet takes the data from Everyday Wireless, and does the data comparisons to give me information."

A simple example of how it works is Everyday Wireless tracks exactly when and where a driver stops as they run a route. MapNet takes that information and compares it to the route as the driver is supposed to drive it, and provides a report that identifies the differences.

Over the next year, various phases of implementation will take place.

"We have more than doubled the number of buses so we can evaluate both the efficiencies throughout one entire school cluster, and so we can identify and develop the report requirements that support these efficiencies," Reppert said. "We expect that to be completed by spring break, when we will double the equipped fleet once more time to develop the dispatch management requirements and reports within the system. We will then take the summer to implement student tracking components and move to full scale implementation as funding allows in the next school year."

While it is still early in the pilot, Reppert said Gwinnett is seeing a change in how routes are being run, how supervisors are able to see what is happening in their operations, how routes are being built and how the schools are able to know what is going on.

"The school and the bus are already being viewed by parents as a much more singular entity, because the school is able to accurately answer parent calls without having to pass parents on to transportation," Reppert said about parent reaction to the changes. "They are ecstatic. One of your principals had parents very upset last year because we didn't have this type of tracking information. Since I shared this program with them and the architecture behind it, these parents have become verbal advocates for us."



Grant Reppert