

CLEVELAND REGIONAL TRANSIT AUTHORITY (RTA) EXECUTIVE SUMMARY

The ATCMTD program awarded the Cleveland RTA a grant in fiscal year 2017. Cleveland RTA is the first ATCMTD grantee to complete its deployment.

Project Goals

With this project, Cleveland RTA upgraded its communication and computer-aided dispatch and automatic vehicle location (CAD and AVL) system to improve GPS and radio communication reliability. System updates also enhanced riders' amenities. The ATCMTD grant enabled Cleveland RTA to accelerate completion of the project.

The Fixing America's Surface Transportation (FAST) Act (Public Law 114-94) set goals for the ATCMTD program. Cleveland RTA's goals included:



Improved safety



Improved system performance



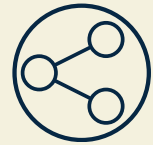
Reduced emissions



Reduced costs



Improved real-time information

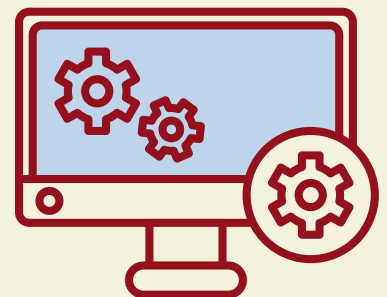


Improved administrative processes

Onboard Upgrades

Buses were equipped with a new computer, mobile data terminal, mobile router, mobile radio, and vehicle intelligence technology.

Onboard touch screens allow paperless pretrip inspections, saving time and improving service reliability, data reporting, and maintenance tracking. Operators may also access turn-by-turn directions.



Onboard computers power the **vehicle intelligence system**, which monitors vehicle components, such as air pressure and engine temperature. **Device management software** tracks the health of onboard intelligent transportation systems (ITSs), enabling real-time monitoring throughout service hours. ITS software updates can now be installed remotely, which keeps vehicles in service, and both systems notify RTA staff when corrective action may be needed.

Improving Real-Time Information

Prior to upgrades, RTA could only use 50 to 60 percent of its ontime performance data. An outdated radio system and poor coverage caused data loss, which prevented operators and planners from adjusting the system. Cleveland RTA was unable to meet its riders' top request: **real-time information**.

With upgraded CAD and AVL systems, Cleveland RTA receives updated vehicle locations every 15 seconds (an improvement from every 60 seconds), allowing Cleveland RTA to provide real-time updates on vehicle arrivals with greater than 90-percent accuracy. System improvements also enable:



Real-time service alerts



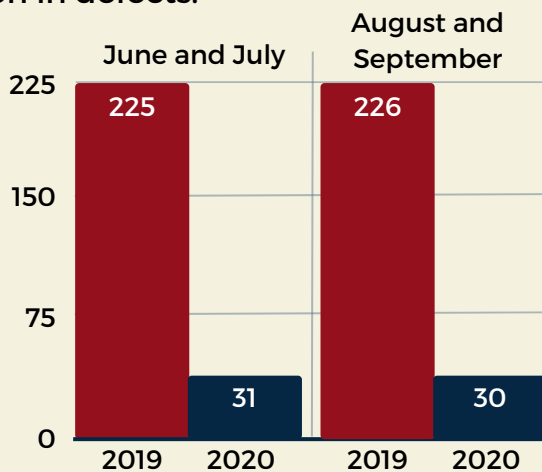
Improved scheduling and trip planning



Real-time passenger counts

Improved Radio Defect Rate

Prior to radio upgrades, Cleveland RTA operators and dispatchers experienced dead zones in which “no audio” could be passed between them. From June to July and from August to September 2019, operators reported 225 and 226 radio defects, respectively. Following upgrades in 2020, operators reported about 30 defects in the same periods. Expanded coverage led to an 86-percent reduction in defects.



Passenger Wi-Fi

In Cuyahoga County, where Cleveland RTA operates, 20 percent of homes do not have Wi-Fi. As part of other project upgrades, the project installed Wi-Fi on Cleveland RTA vehicles. Now, all RTA fixed-route and rail vehicles offer free Wi-Fi for riders, assisting the community in bridging the digital divide. On average, riders use 16 terabytes of data per month.



To read Cleveland RTA's full final report, please go to: https://ops.fhwa.dot.gov/fastact/atcmttd/2017/awards/ATCMTD_Grant-RTA_Radio_Project_final.pdf