
City of Yakima, Washington

Sierra Wireless Connects Yakima with Robust Cellular Solution



The City of Yakima serves an urban population of more than 125,000 residents. For many years, Yakima has been leveraging technology to improve the community and increase the safety of its citizens and public works employees. One such example of the City's innovative technology application is their implementation of Geographic Information Systems (GIS) software for computer mapping, which enables location data for mobile city services - such as fire responders, law enforcement, waste management, and public transit - to easily be shared citywide among staff and the public.

BUSINESS CHALLENGE

When the City of Yakima began implementing its GIS program almost 25 years ago, it was dependent on radio service for mobile communication and had limited GPS capability. The GIS solution was implemented in police vehicles to accommodate AVL and dispatch communication.

More than two decades of wireless technology advancements have enabled the City to move to a cellular-based solution that has improved their mobile positioning readings from 100 meters to within five meters accuracy. The city was also able to consolidate dispatch for police and fire and began rolling GIS services to ambulances.

"Cellular goes everywhere; when we were on our radio system, we were confined," said Tom Sellsted, supervising senior (GIS) analyst for the City of Yakima. "The fact that we can monitor these service fleets more accurately is huge from both a management and safety aspect. If an ambulance has to travel as far as Seattle, we can track the entire route and ensure there are no issues or respond quickly if there are."

With the move to a cellular solution, the City of Yakima wanted to expand their AVL

and dispatch services to additional departments. The City needed to find mobile, broadband devices that could meet the requirements specific to multiple departments, including ruggedness for waste management trucks and portability for public transit vehicles that were taken in and out of service. The City of Yakima was using Sierra Wireless AirLink® gateways provide the robust capabilities for police and fire, and the City's GIS team knew they could trust the AirLink product line to provide the functionality and durability required for expanded services.

SIERRA WIRELESS AIRLINK® SOLUTION

The City of Yakima currently has more than 200 Sierra Wireless AirLink gateways enable AVL and dispatch capabilities throughout city serviced departments deployed in police cruisers, fire trucks, ambulances, refuse trucks, and buses to enable two-way communication and vehicle location in order to provide efficient response, service management, and public access to real-time public transit schedules.

“Being able to remotely configure the devices over the Internet and manage an entire fleet from a web browser is invaluable,” explained Sellsted. “We especially like the rugged quality of the gateways. You should see what these things go through in our refuse trucks, but they are absolutely bullet-proof.”

Simple Integration, Solid Support

The City of Yakima has been working with Sierra Wireless partner Astral Communications for many years. As a long-time and trusted value-added reseller of AirLink equipment, Astral supports Yakima in procurement, configuration, and installation of the Sierra Wireless devices. “Our reps at Astral are very technical; they understand our issues as well as we do and are willing to do the groundwork and work closely with Sierra Wireless to get our problems solved,” said Sellsted.

“Yakima has always been ahead of the curve in terms of integrating technology into public infrastructure,” said Chip George, title at Astral Communications. “Between the City, Sierra Wireless, and Astral Communications, we’ve developed a great team and process to help Yakima implement, maintain, and update their solutions based on their evolving priorities.”

Sellsted also described the many in-vehicle device installations as “clean” and “seamless.” “Every time we end up with integration issues, it’s never the AirLink gateway.”

Scalable Solution

Based on the success that Yakima has experienced with the Sierra Wireless AirLink gateways, the City has continued to expand their use of the technology. The latest project is for their public transit system, where they have equipped 28 buses on 11 routes with AirLink gateways. The highly rugged devices are integrated with mapping software that allows riders to track buses along individual routes for accurate bus stop arrival times and calculated time between stops.

With buses on time-sensitive schedules, the real-time location information allows riders to better plan trips while enabling the City to closely monitor the planned versus actual schedules. In addition, easy installation, rapid deployment, and a highly rugged design enables easy portability of the devices between vehicles, with minimal potential for damage.

Due to urban expansion and increased congestion, the average trip for riders has become longer. To enhance the public transit experience, the City has begun utilizing the AirLink gateway to offer free Wi-Fi so that passengers can be productive or simply entertained by using laptops and smartphones while in-transit.

“We want to increase ridership and improve the public transit experience in any way we can,” explained Sellsted. “By having the Wi-Fi technology readily available, we are hoping to entice new riders, and have existing riders use our services more often.”

RESULTS

The City of Yakima is looking to expand AirLink communications capabilities to additional public transit vehicles, such as specialized vans and minibuses. In addition, the City would like to implement a Dial-a-Ride dispatch service that would allow residents to request personalized transportation through the public transit system.

“Right now, the cellular coverage provided in Yakima is insufficient,” explained Sellsted. “We have plans for video streaming from buses to monitor situations and use in an evidentiary manner, but that’s not really feasible until we have 4G capability here.”

For now we can map and dispatch based on event location, vehicle location, drive-time to incident, and provide the public with valuable, time-sensitive information.

We can take care of issues in seconds, and administer everything from anywhere," he continued. "The Sierra Wireless solutions have been rock solid, and I look forward to using their new LTE gateway when cellular providers deploy 4G in Yakima."

APPLICATION: AUTOMATIC VEHICLE TRACKING AND DISPATCH

CUSTOMER CRITICAL CHALLENGE:

- Mobile communications solution for critical city services, including police, fire, ambulance, waste management, and public transportation
- Requires strong, persistent wireless communications for vehicle tracking and dispatch and ruggedness for uninterrupted use in harsh environments

SOLUTION:

- AirLink® rugged, intelligent gateways provide real-time vehicle tracking data to dispatch and accurate location information to the public for a comprehensive GIS

BENEFITS:

- Secure, reliable cellular and Wi-Fi connectivity for critical city services
- Seamless installation, easy configuration, and on-going remote management
- Durable form factor to provide consistent performance despite harsh environments
- Portability for continued use when vehicles are taken out of service

