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Zonar Data Integration Helps City of Sacramento Fleet Ops Achieve Dramatic Shop Productivity Improvements

*Zonar and AssetWorks integration
automates remote diagnostics to shop
work order process*

“The implementation of Zonar’s applications and the integration with our fleet maintenance system play an integral part in helping our fleet operations save money while being more efficient and responsive to our clients. It’s also helped us in meeting the greater regulatory challenges we face with stricter emission regulations and federal DOT requirements.”

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Fleet Manager
City of Sacramento*



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When a City of Sacramento refuse truck develops a mechanical issue while out on its route, fleet manager Keith Leech knows with a much greater degree of certainty that his department's mechanics will know about it even if the driver doesn't report it. In fact, in many cases, they'll know about the issue long before the truck has returned to the shop.

It's a far cry from the days when the city's mechanics relied solely on drivers' verbal and written reports to identify mechanical issues that needed repair. These were reports that drivers sometimes forgot, misplaced or left undone at the beginning or end of their shifts, even though U.S. Department of Transportation regulations and the City of Sacramento's operating procedures required them. Or they got buried in a shuffle of papers at the city's three bustling maintenance shops for heavy-duty vehicles.

Leech has responsibility for managing three maintenance shops that provide services for the city's fleet of 2,300 heavy-duty vehicles, including equipment in the city's fire, solid waste and recycling, transportation and parks and recreation departments. He also manages two maintenance shops that provide maintenance services for the city's police department. The city replaced the traditional paper process with a real-time integration of Zonar's Electronic Verified Inspection Reporting (EVIR®), and it's fleet management system into the city's maintenance software. As a result, mechanics can now see results from the refuse truck drivers' pre- and post-trip inspection reports as drivers are completing them. Just as important, they can view fault codes directly from the onboard computers on the refuse trucks as the truck is on the job using Zonar's telematics platform. That's because Zonar delivers information about any defects identified by the vehicle's computer or by the drivers to FleetFocus M5, a fleet maintenance system developed by AssetWorks.

FleetFocus tracks all functions related to the maintenance of the city's vehicles including processing of repair and preventive maintenance work orders, capturing operating expenses and tracking equipment usage. The integration with Zonar automatically generates service requests based on remote diagnostic and electronic trip inspection data.

Once repairs are performed and marked complete in FleetFocus, they are automatically uploaded to Zonar's Ground Traffic Control®



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The City of Sacramento Solid Waste and Recycling Division provides garbage, recycling, yard waste and street sweeping to 124,000 residential customers.

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data management application, indicating that the vehicle is in full compliance for operation. That allows dispatchers in the different city departments to know which vehicles are ready for in-service.

“After implementing the integration, we started seeing dramatic improvements in workflow coordination with more streamlined diagnostics and fewer downed vehicles in the daytime,” Leech said. “That was a critical improvement for our maintenance shop because we like to do other work during the day. Our nighttime mechanics usually do maintenance on the refuse trucks at night when they aren’t running. And our daytime mechanics usually do work on the city’s fire department apparatus during the day.”

“It helped us educate the solid waste management folks on the importance of thorough driver inspections so that we can meet their needs on a daily basis,” Leech added. “What I see from this integration is a tremendous benefit not only to our maintenance and fleet operations, but also to other city department operations that rely on us.”

“This integration was part of a concerted effort by the City of Sacramento to improve pre- and post- trip inspections, find operational efficiencies and realize some fuel economy savings for its fleet of 2,300 vehicles and equipment,” Leech said. That effort began with the implementation and testing several years ago of Zonar’s electronic fleet management solution for pre- and post-trip inspections.

Here’s how EVIR helps the city’s fleet operations accomplish better pre- and post-trip inspections: Zonar’s radio-frequency identification (RFID) tags are placed on the city’s heavyduty vehicles in critical inspection zones. These weather tough tags contain information about their location on the vehicle, the components to be inspected and the identity of the vehicle. Using Zonar’s 2010™ inspection tool with EVIR, the city’s drivers conduct their inspections by placing the reader within inches of each tag and indicating the condition of the components within the zone with one-handed, push-button responses. When a defect is discovered, the driver selects a description from a pre-defined list and indicates if the vehicle is safe to operate.

When the inspection is complete, drivers place the Zonar 2010 into the vehicle mount. The information is then transmitted to FleetFocus, the city’s fleet management software. This provides Leech a real-time picture of fleet operations. Zonar’s onboard



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telematics platform also captures data including vehicle location, fuel consumption, rate of travel, idle time and fault codes.

“We looked at several different solutions for pre- and post-trip inspections and chose to implement a test of Zonar’s systems,” Leech said. “Before we began that test, we conservatively projected a 10 percent improvement in fuel economy in our report to the City Council. During the two-month test, we monitored driver performance and idle time from 184 different vehicles in 14 different class.”

By conducting a thorough analysis of data collected both before and after the EVIR and GPS systems were implemented, an independent third-party analyst, Avion Solutions, found the 10 percent estimate was way off the mark. The analysis found that the fuel savings actually averaged nearly 25 percent. The savings came from idle reduction, route optimization and driver performance improvements.

“The implementation of Zonar to monitor idling and driver behavior to reduce petroleum consumption greatly contributes to the City of Sacramento’s strong commitment to sustainable fleet operations, which support our Climate Action Plan,” Leech added.

The City of Sacramento is developing a Climate Action Plan (<http://www.sacgp.org/cap/html>) that will identify how the city and the broader community can reduce greenhouse gas emissions (GHG). The action plan will also identify strategies to adapt to the effects of climate change.

Even though Zonar’s solutions helped deliver significant fuel economy improvements and contributed to the city’s efforts to reduce its carbon footprint, Leech said what really sold the city on choosing Zonar was the interoperability the EVIR and Ground Traffic Control® data management applications offered with the city’s fleet maintenance system.

“We could see other opportunities for gaining efficiencies when fully utilizing that interoperability,” he said. “We saw Zonar as a more comprehensive solution and the improvements we’ve seen in workflow in our maintenance shop certainly bears that out.” That interoperability has also resulted in efficiencies realized at non-automated fuel refilling tanks at several of the city’s fire stations. Ordinarily, the city’s vehicles are refueled at automated refueling stations, which automatically track fuel usage and odometer readings. But a few of the city’s fire stations require their





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own supply of fuel in order to be fully standby-ready because of their location or because of the type of equipment they use. Leech said equipping these stations with fully automated fueling tanks would have been cost-prohibitive due to the relative low volume of fuel dispensed.

“Because these stations are not automated, we had fire departments using clipboards and hand written entries to track fuel usage, odometer readings and corresponding vehicle numbers, which all has to be read and entered into a computer database,” Leech added.

“That all resulted in incomplete records that were difficult to reconcile.”

Leech turned to Zonar to figure out a solution that takes full advantage of the data already being collected. Zonar, working with AssetWorks, which also provides the city a real-time fuel management system, came up with a fuel tracking solution that’s being implemented.

“We think that once this solution is fully implemented, it will eliminate most if not all of the data entry errors and make our fire department’s fuel consumption records much more accurate,” he added.

About 600 of the city’s 2,300 heavy-duty vehicles have so far been equipped with Zonar’s telematics and inspection system. Leech said he plans to eventually equip the city’s entire fleet of heavy-duty vehicles, particularly as older vehicles are replaced. Despite its many attributes, implementation of the new system was not without some concerns on the part of the city’s drivers.

“When we first introduced the idea of implementing vehicle monitoring systems, employees were worried that they could be used in some punitive ways,” Leech said. “But we came to an agreement that this is really all about operating some very expensive equipment as efficiently and as safely as possible. We’re not using these systems to drill down into what everybody’s doing on a daily basis. That’s not how they’re being used at all. We’re trying to use them as a positive influence and to build awareness of the positive and economic impacts associated with driver behavior.

“It’s also nice that we’ve been able to actually use this to defend or to educate our drivers,” Leech added. “When we get complaints about city drivers, we’re able to use the system



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to show exactly where and when city trucks are and how fast they're going."

City drivers, particularly those who work in the solid waste department, also appreciate the fact that the integration of Zonar's platform with the AssetWorks fleet maintenance software allows the maintenance shops to efficiently deal with maintenance issues before they lead to disruptive downtime, Leech added.

Leech said he believes that Zonar's fleet management platform offers many other opportunities for realizing operational efficiencies and providing Sacramento's citizens and businesses enhanced services. As just one example, he sees an opportunity for solid waste department dispatchers to be able to see real-time locations of refuse vehicles and to reroute those trucks as needed.

"We can look at past records of where the street sweepers have been and respond when we get questions from citizens who haven't seen a street sweeper visit their streets," he added. "We can see exactly where the street sweepers have gone and when."

"The implementation of Zonar's applications and the integration with our fleet maintenance system play an integral part in helping our fleet operations save money while being more efficient and responsive to our clients (other city departments)," Leech said. "It's also helped us in meeting the greater regulatory challenges we face with stricter emission regulations and federal DOT requirements."

ZONAR: IT PAYS TO HAVE THE RIGHT FLEET MANAGEMENT PARTNER

Zonar provides electronic fleet inspection, tracking and operations solutions for public and private fleets. Our products are effective, driven by customer satisfaction and affordable by design. We've made it our business to do right by our customers. You will notice the difference.

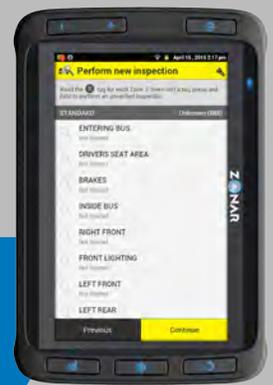


Increase safety

Zonar's V3™ provides real-time fleet tracking.

Verified Inspections

Zonar's 2010 and Android Tablets offer the highest level of safety with our patented EVIR® Electronic Verified Inspection Reporting. DOT mandated pre- and post-trip inspections are automated and verified using Zonar's technology.



www.zonarsystems.com
info@zonarsystems.com
877-843-3847