



CompassCom

Case Study

Organization: Florida Keys Mosquito Control District

Location: Key West Florida

GIS and Telematics Are the Foundation of Florida Keys Mosquito Control Technology

For over a century, Florida has been battling infestations of disease-carrying insects. The Florida Keys Mosquito Control District, which has offices in Key Largo, Key West and Marathon, is one of dozens established to control the mosquito populations in the state. The District is working to ensure public health and welfare of residents and visitors in the Florida Keys archipelago stretching more than 100 miles off the state's southern coast.

The District deploys a fleet of land vehicles, boats, helicopters and airplanes to apply insecticides on the numerous islands comprising the Keys. Their main targets are the handful of species, including *Aedes aegypti*, known for spreading disease such as the Zika and West Nile Viruses, Dengue Fever and Chikungunya. As spray applications became more complicated due to protection of environmentally sensitive areas, the District turned to the CompassCom Mobile Resource Management (MRM) as one solution to assist in ensuring adulticides and larvicides are applied correctly.

Faster Response to Citizen Inquiries

More than 61 land vehicles with GPS enabled modems are involved in inspection and chemical application activities. The trucks driven by inspectors, who are responsible for finding mosquito hotspots on private properties as well as deep in the wooded marshlands, are tracked for speed, location, heading and status. The 15 spray trucks are additionally equipped with sensors keeping track of the status when and where the chemical pump and spray mechanism (called a Grizzly) are each activated.

The operations desk at the Central Command Center in Key West can monitor the movement of all vehicles on dedicated CompassTrac map displays. Spray vehicles typically follow pre-assigned routes, but the supervisor may relay special dispatch instructions to a driver responding to resident request or changes in mosquito hotspots. CompassTrac enables supervisor to find the spray truck closest to the hotspot saving time and money to reach the scene.

CompassCom MRM empowers dispatchers to provide response to citizen calls asking if specific properties have been sprayed. Dispatchers, while callers are on the line, can view real-time spraying and bread crumbs of past spray activities seeing if the Grizzly was activated when in the area.

Benefits

- Spray routes optimized for maximum fuel and insecticide efficiency
- Vehicles can be located instantly in the event of a driver emergency improving safety
- Accurate estimate of spraying at an address gives homeowners opportunity to leave the property or stay inside to reduce exposure
- District can provide accurate proof to government regulators that protected zones were not sprayed protecting our environment

If the inquiry comes a day or two after the caller's neighborhood was sprayed, the supervisor simply taps into the Replay mode to pull historical data from the CompassCom solution to See if and when the property received the chemical application. Mapping empowered by Esri ArcGIS is tightly integrated with CompassTrac to provide background maps tailor to the Keys Mosquito work flow supporting improved citizen service.

Improve Loan Worker Safety

Improved driver safety is also an important benefit of the MRM. "If there is an emergency, we can find the vehicle," said Josh Clemente, Network IT Specialist in the Information Technology Department, explaining that Central Command has had to dispatch public safety personnel more than once to rescue inspectors in the back country after they failed to check in at their assigned times.

Protecting Sensitive Habitats

Even during the offseason, the CompassCom solutions is used by personnel in Replay mode to show past application schedules. After action plans modify routes to ensure hotspots known for dense mosquito populations are visited regularly and efficiently to enhance the next seasons response. District personnel constantly review the Optimized routes not only to eradicate more mosquitoes but can save thousands of dollars in fuel and chemicals.

But the MRM solution may provide its biggest return on investment in helping the District plan where not to apply chemicals, according to Clemente. "[Our personnel] meet at least twice a year with government regulatory personnel to reinforce which environmentally protected areas should not be sprayed."

In addition, some environmentally sensitive areas can be sprayed but only with certain green-certified chemicals. Homeowners also have the right to flag their properties as no-spray zones. Using ArcGIS, the District creates geofences of these restricted areas and plans routes that enable CompassTrac to provide immediate feedback of driver performance in proximity to these sensitive areas. Upon inquiry from either a concerned citizen or state regulatory agent, the District must provide proof that an off-limits property or area was not treated.



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