Southern California public works department optimizes the management of water quality, permits, incidents, and inspections with Locus software.

CUSTOMER CASE STUDY

This municipality is in a mountainous region of Southern California, several miles from the coastline. Its mediterranean climate, nature preserves and wetlands, and corporate business parks have helped it attract close to 130,000 full-time residents. A buying committee spanning environmental compliance analysts and specialists, water quality managers, and GIS analysts sought a cloud-based solution to simplify data collection, tracking, and compliance work related to the city's drinking water, stormwater, reservoir data, and wastewater.

Challenge

The Environmental Division of this city's Public Works Department is a lean operation with diverse responsibilities. The state's water supply is at risk due to drought and climate change, and the water they do have is vulnerable to urban/stormwater runoff and wastewater. The team must track water quality and demonstrate compliance with the U.S. Environmental Protection Agency (EPA), the State Water Resources Control Board (SWRCB), and the California Department of Health Services (DHS). With scientists working in the field and compliance personnel in the office, they needed a better way to collect and manage data pertaining to their work.

- **Dated Microsoft Access® Database**: The department was limping along with a database that was no longer supported yet contained current and legacy data.
- **Sampling Burden**: The team collects daily and weekly drinking water samples at reservoirs and other sites in their jurisdiction. They also sample and monitor wastewater, Fats, Oil & Grease (FOG) interceptors, and other outfalls from businesses within the community. The field inspectors had been submitting sample bottles to the lab, recording data on paper-based forms, and then delivering the forms to the office for manual entry into Access.
- **Scattered Incidents and Investigations**: The team responds to all reports of illicit discharges city-wide, and as residents have become more water-aware, the volume of complaints has significantly escalated. The complaints range from contractors washing paint down the storm drain, to drinking water odors, and to businesses discharging substances that appear to be toxic. The small team investigates all incidents to capture data pertaining to its composition, mode of entry, and connections, and to attempt to identify generating sites. As with water sampling events, the inspectors would record their findings on paper for eventual entry into Access. This process made it difficult for the team to quickly discover possible connections between incidents.

- **Field Data**: The department needed to optimize its human resources by capturing field data for samples, inspections, and incidents on mobile devices.
- **Reporting Challenges**: With data strewn across multiple clipboards and data tables, generating the required reports was onerous and far too time-consuming for a team that was already overtaxed.
- **Inefficient Operations**: Sample planning, scheduling tasks, setting reminders, managing permit requirements, and tracking the status of corrective actions became overwhelming. Some notes were on paper, while other data was in Access, and important contextual information was with each staff member. If one team member was unavailable, there was very little clarity about which samples had been collected, which notices or warnings had been sent, and what enforcement steps had been taken.
- **Previous Investments**: The team had spent years refining processes, templates, and GIS maps for the department. While paper and spreadsheets had reached the end of their shelf-life, it was important to preserve the collective business logic within those resources. Finding software that could mold to their thinking would be critical.

In addition to the challenges outlined above, the city wanted to find a product that could easily adapt to changing regulations and expand to support the broader EHS compliance needs of its Sustainability Division.

Solution

After extensive market research, Locus Technologies and two other software companies were shortlisted and invited to participate in a formal RFP process. One product was immediately ruled out because it only excelled with one niche requirement. The city conducted reference checks and deeper analysis of product functionality. This research revealed that the third product had limited practical experience and configurability. In contrast, the city valued Locus' dual solution for environmental information management and EHS compliance, plus the company's proven experience with water utilities and incident management. Locus successfully completed a pilot implementation for the city in 2022, followed by a complete roll-out in 2023.

> *"Locus really listened and understood that we are small operation. They had a great proposal, and they happened to have great pricing. We hope to expand the Locus platform for other needs in the city."* - *Water Quality Supervisor*

Results

- **A single platform for scientists and business users**: Locus delivered its integrated solution spanning mobile data collection, environmental data management, and compliance software for tasks, incidents, inspections, audits, and reporting. By using Roles and Permissions, staff members only interact with the parts of the Locus system they need to complete their work.
- **Centralized data**: Locus stores all relevant information pertaining to the city's regulatory agencies, inspectors, facilities, incidents, permits, and requirements, as well as data related to distribution monitoring, drinking water quality, and discharge tracking.

- **Customized inspection forms**: Locus helped the client configure inspection forms to leverage its existing business logic. For example, the FOG inspection forms enable the team to gather data regarding grease interceptors and traps. Other inspection forms and workflows were configured to include a series of questions, checklists, responses, observations, and corrective actions related to stormwater and illicit discharges.

- **Mobile data collection**: Inspectors can travel to any location, open Locus on their tablets, and capture data at the site. The app immediately notifies inspectors if data seems out of an acceptable range so that corrections can be made on the spot. Tablet photos of outfalls, collection sites, storm drains, and substances can be added to the record, and everything is automatically stored in the central Locus system for review by any authorized user. Staff can print PDF inspection reports in the field using the native email features of the mobile operating system.

- **Tasking and calendaring of inspections, audits, and corrective actions**: Locus includes simple but powerful tools to help the team create and execute tasks, automatically issue reminders for sampling and reporting, and inform managers of impending deadlines. Locus enables the city to customize each task with pre-determined due dates, frequencies, and responsible parties, and then associate assigned tasks with staff members' calendars. New, monthly sampling calendars are now built into the system. The city uses Locus Task and Compliance Module to trigger corrective actions, log notes and conversations about sites and incidents, and schedule follow-ups when illicit discharges occur. When they issue notices of violations, Locus generates a report inclusive of the data and photos captured at the scene. All activity is tracked, and with just a few clicks, authorized team members can audit any field or entity in the system.

- **Data visualization**: Locus includes GIS with sampling-, incident-, and inspection- location overlays on Google® maps, which helps the city gain deeper insights from their data. Users can quickly visualize co-located incidents, efficiently schedule inspections, and pinpoint likely contamination sources or connections. Locus also includes configurable dashboards so users can instantly review bar charts, line graphs, heat maps, and hydrographs pertaining to their work.

- **Simple reports**: Locus provides report templates that can be customized with city branding and then populated with the latest data prior to being emailed to regulators, businesses, residents, facility operators, or internal staff. When sampling is complete, the Locus system automatically generates a report and alerts system operators so they can review the data and see if there are any issues. The team also uses Locus to generate a wide range of daily, monthly, and annual reports, including:

  - *Formatted inspection reports*
  - *Distribution monitoring*
  - *Flushing reports*
  - *Average chlorine levels*
  - *Nitrification*
  - *Reservoir monitoring*
  - *Water quality complaints*
  - *Automotive Related Facilities – pretreatment*
  - *Restaurant – pretreatment*
  - *Electrical conductivity and pH*
  - *Automotive Related Facilities – stormwater*
  - *Illicit discharges*
  - *And various stormwater reports for restaurants, industrial, and nursery establishments in the city.*

This relatively small municipality needed a software product that was both robust to handle its critical water data and compliance, and flexible to meet the varied needs of compliance personnel, managers, GIS analysts, policy makers, and the public. They also required a partner that had relevant experience, a solid track record, the ability to scale to support broader sustainability initiatives, and experts ready to listen and problem solve. Locus proved to be the only company that could meet all requirements, and ultimately help the city's environmental department become more efficient and better managed.