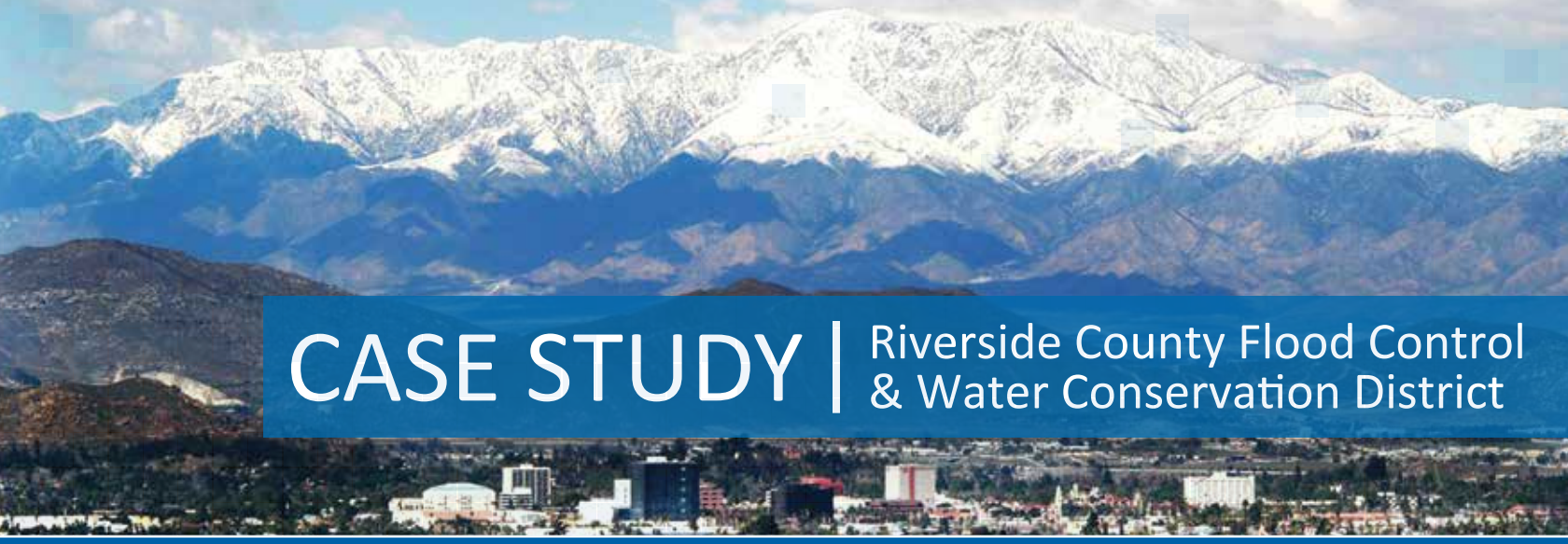


CASE STUDY | Riverside County Flood Control & Water Conservation District

Stormwater Quality Compliance Reporting

ABOUT KISTERS

KISTERS is a global software solutions and IT firm dedicated to long-term management of water resources. Clients achieve compliance and sustainability goals through powerful and flexible software.

Water Information Systems by KISTERS (WISKI) provides unlimited storage and advanced capabilities to manage, audit, and analyze water data over both time and terrain.

Water Quality and Ecology modules overcome meta data management and quality control challenges, centralizing physico-chemical lab results as well as biological assessments, for holistic analysis.

With WISKI, efficiently handle variety and volume of data, calculate impacts of urban development, or enable web portal visitors to view and download reports with ease.

Fast Growing County Streamlines MS4 Complexity

Located in Southern California in the western portion of the county of the same name, Riverside County Flood Control and Water Conservation District was formed in 1945. The regional drainage authority is responsible for keeping residents safe from damaging or destructive flood and storm waters. The District operates drainage services within a 2,700 square mile jurisdiction. It also performs floodplain management and development review, flood warning and early detection, and National Pollution Discharge Elimination System (NPDES) compliance. Riverside County ranked #3 in population growth among large counties nationwide.[1] Learn more at www.RCflood.org.

Challenge

The MS4 regulatory program manages storm water quality from urban runoff to prevent impacts to receiving waters within respective jurisdictions. Meeting stringent Quality Assurance (QA) requirements and compliance reporting are the most time-consuming and most critical aspects of the program.

Strict adherence to QA project plans mandates an excessive collection and storage of meta data – from discrete grab sampling events at specific locations and times to thorough review of lab analyses for particular constituents.

Additional complexities include:

- Managing a large inventory of monitoring locations specially selected to address different objectives of watershed-specific monitoring program components
- Mixed frequency of and approach to each monitoring event at each site, from 1 to 6 times per year, in order to address the prescribed components of each permit
- During each field visit, staff may collect information for up to 80 different data fields
- Collecting thousands of water quality data points during wet and dry weather monitoring in one year
- Maintaining auditable chain of custody (COC) documents and lab results

CASE STUDY

Riverside County Flood Control & Water Conservation District

NPDES Permit Compliance Reporting

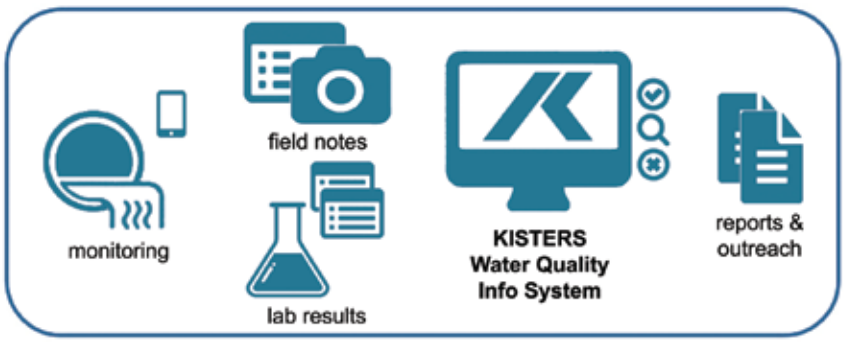
www.kisters.net

Solution

First, to ensure field staff collect all mandatory and relevant data during each field visit, the District equipped personnel with mobile devices and data collection app, Survey 123 for ArcGIS by Esri. Employees are guided through a customized form using logic and standardized responses. They have options to attach images and videos. The app confirms sampling locations, reduces transcription errors and saves time as staff return to the office and readily import data into KISTERS' Water Quality data management system.

Then, KISTERS' water quality platform tracks a wide array of parameters, ensuring data completeness and achieving appropriate objectives, and automates a significant part of the data workflow:

- Download of lab EDD files from ftp, email, web, and other sources
- Verification of actual lab results and ordered lab analysis and usage of approved vocabulary
- Analysis of reporting limits, objectives and NPDES permit requirements
- Maintain strict control over data quality using audit trails



Extensive storage of meta data required by the District's Municipal Separate Storm Sewer System (MS4) Regulatory Program can also track changes over time to sampling conditions at particular sites, collection and field processing methods, analytical and observational methods, and more.

Staff have the ability to add new constituents and results for each monitoring site, station, characteristic, or method as necessary. They can further reconfigure validation and verification rules in the system as NPDES compliance requirements may change over time. Subsequently, Riverside County Flood Control and Water Conservation District can achieve true defensibility of data collection to meet its quality assurance plans.

Results

Time Savings. Accuracy. Confidence. District personnel will be able to reallocate their time and attention to more pressing needs and responsibilities.

Automated data validation and verification rules will process water quality data for format, vocabulary, and reporting of errors and warnings to regulatory program staff members.

The suite of streamlined tools will give District professionals new capabilities to generate more comprehensive reports, increasing confidence that decision-makers have the highest quality information.

Significant time savings over the manual validation process is expected, especially as Riverside County Flood Control and Water Conservation District serves a growing number of residents and businesses.

References

D. Downey, N. Johnson & I. Wheeler. "How & Why Southern California's Population Grew So Much in One Year." *The Press-Enterprise*, 3/21/2018. Retrieved from https://patch.com/california/banning-beaumont/riverside-county-3rd-highest-population-growth-nationwide

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