Case Study

Water

User
Atascadero Mutual Water Company

Challenge
Collect data to meet NPDES permit requirements

Solution
Use Survey123 for ArcGIS® to provide a mobile solution for data collection

Results
Save time and increase data quality for NPDES permit reporting

Meeting NPDES Requirements with Survey123 for ArcGIS®

Atascadero Mutual Water Company (AMWC) is located in San Luis Obispo County, California. It was incorporated on August 13, 1913, and is the oldest continuously operating company in Atascadero. AMWC serves the entire City of Atascadero and properties in adjacent unincorporated areas. It is one of the largest mutual water companies in the state and is responsible for supplying water to more than 30,000 people for domestic and fire suppression purposes. AMWC's water system comprises approximately 250 miles of pipeline, 9 storage tanks, 17 active wells, and around 10,500 service connections.

The Challenge

The National Pollutant Discharge Elimination System (NPDES) permit program is authorized by the Clean Water Act (CWA) to control water pollution by regulating sources that discharge pollutants into the waters of the United States. Beginning in 2016, the California State Water Resources Control Board required all water systems that were not covered by a municipal separate storm sewer system (MS4) permit to apply for a newly implemented, statewide NPDES permit for drinking water system discharges. To comply with the NPDES permit requirements, AMWC needed an efficient way to collect information about each discharge.

"For a computer-challenged guy like myself, I find it very easy to use."

Colt Cruzat
Senior Operator
Atascadero Mutual Water Company

"The app is nice in the fact that all of the data and pictures are stored in one place."

Mike Stephen
Chief Operator
Atascadero Mutual Water Company

"The features of the Survey123 app, with its conditional logic and ability to store relational data, far exceeded my expectations."

Lorraine Halderman
GIS/IM Administrator
Atascadero Mutual Water Company

With these newly implemented permit requirements, AMWC struggled to create a form that would meet the documentation criteria but not be too cumbersome for field staff to use. Depending on the type of discharge and number of variables, field staff could be required to complete several forms. Paper forms would need to be created with every possible scenario in mind, which would not be very intuitive for field staff. Managers realized that this could lead to confusion, result in incomplete paperwork, and cause management difficulty. In addition, the paper forms would need to be collected and could be misplaced, damaged, or lost.

There would also be no easy way to attach pictures (when applicable), and once the forms were turned in, the data would still need to be manually entered into a computerized spreadsheet for data summary and reporting. The challenge for management was finding a mobile solution that would support relational data, have prepopulated drop-down lists and conditional logic, and work in a disconnected environment.

The Solution

Using Survey123 for ArcGIS, AMWC was able to move away from paper forms and enable field staff to capture data using their mobile devices. Using the Survey123 Connect for ArcGIS tool, AMWC crafted Survey123 forms following strict NPDES guidelines. To make these smart forms intuitive for field staff, particular attention was put into leveraging features such as question grouping and skipping (conditional logic) and user-input validation rules. Field data collection was enabled through tablets and smartphones running the Survey123 mobile application, even when disconnected from the network. Hosted in the ArcGIS℠ Online infrastructure, the solution delivers 24/7 availability and scalability.

The Results

Field staff are now able to collect data for NPDES reporting with more confidence, benefiting from automatic validation rules and intuitive smart forms. "Because NPDES regulations and requirements had been covered with field staff previously, the actual training time on the mobile application itself was very minimal," said Lorraine Halderman: GIS/IM Adminstrator, AMWC. Due to the conditional logic, field data collection is more accurate and simplified. Field crews only see what they need to see, based on their previous response, and there is no question as to which fields need to be completed. Additionally, data collection with Survey123 enables data captured in the field to be immediately available for analysis and reporting.

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