EXCHANGE NETWORK TRIBAL CASE-STUDY

Entering the Digital Age: Streamlining the Bishop Paiute Tribe's Environmental Laboratory Operations through Paperless Solutions

Bishop Creek, CA

CHALLENGE

The Bishop Paiute Tribe's Water Quality Control Program (WQCP) has been responsible for receiving and examining drinking water samples across the Owens Valley since 2001. Operating as an EPA certified drinking water lab, the Bishop Paiute Tribe's Environmental Laboratory (BPTEL) conducts analyses for bacteria, total coliform, and E. coli, alongside offering services for total nitrogen and total phosphorus assessment. However, the BPTEL has utilized paper forms for sample collection and analysis since its inception in 2001. This reliance on paper documentation has led to challenges regarding space utilization, susceptibility to loss, damage, or unauthorized access, potentially compromising sensitive data. Moreover, the manual process has made it difficult to anticipate sample arrivals, causing issues when staff are absent or in the field.

OBJECTIVES

The WQCP's goals were to transition to a streamlined system for receiving drinking water samples. BPTEL aims to better cater to client needs, improve quality assurance and quality control processes, and overcome logistical challenges that come with paper documents.

SOLUTION

Through the Exchange Network (EN) Grant, the Water Quality Control Program (WQCP) successfully procured a contractor, identified essential software requirements, and initiated the development phase towards establishing a digital form infrastructure for the BPTEL (Bishop Paiute Tribe's Environmental Laboratory). The selected contractor was Angela M. Reed, Water Resource Planner for the Penobscot Indian Nation, and Tribal Exchange Network Group (TXG) member. The identified software, ESRI's ArcGIS Survey123, serves the purpose of data management, visualization, and analysis, facilitating the generation of feature reports. Additionally, Make, a no-code automation tool, was selected to interconnect applications and construct automated workflows. The objective involved leveraging Survey123 to establish the BPTEL Drinking Water Digital Form and utilizing Make to link Survey123 outcomes with email and other pertinent applications. The illustration below shows the process by which the BPTEL Digital Forms has been implemented.

Assistance from TXG offers reassurance that if any issues or queries emerge with this project, the WQCP team retains the option to seek assistance to address issues and learn in the process. **TXG's support for tribal environmental programs in data management enables tribes to uphold their data sovereignty, preserving their independence in performing in-house data collection and analysis.**

BENEFITS

Accuracy and Data Quality
Manual data entry is prone to errors, such as typos or illegible handwriting. Digital forms can enforce data validation rules and provide real-time error alerts, ensuring that submitted information is accurate and complete.

Faster Processing and Workflow
Digital forms can be integrated with automated workflows, routing submitted information to the appropriate individuals or departments for review and approval. This accelerates decision-making processes.

Efficiency & Time Savings
Digital forms eliminate the need for manual data entry and processing, reducing the time it takes to collect and organize information. Responses are automatically captured and stored, saving valuable time for both users and administrators.

User-Friendly Experience
Digital forms can include user-friendly features such as auto-fill, dropdown menus, and interactive elements, making it easier for users to complete forms accurately.

Scalability
Digital forms can be easily scaled to accommodate a growing number of users, submissions, and processes. Changes or updates to forms can be made quickly and distributed to users instantly.

Archiving & Retrieval
Digital forms are easier to archive, and retrieve compared to physical paper forms. Archived data can be indexed, searched, and retrieved quickly when needed.

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TIMEFRAME

2019: EN Proposal submited & approved.

2020: Angie Reed, enlisted as contractor. Software applications crucial for project initiation were identified.

2021: Project commenced with expected completion by September 2022.

2022 (April): Project progress hindered due to staffing changes; An extension on the EN grant was requested for project completion.

2022 (October): Hiring of replacement staff enabled project to resume.

2023: Project concluded, anticipated rollout to BPTEL Clients is scheduled for early 2024.

A Paperless Solution

Step 1: Clients use their smartphone to fill out the Survey123 BPTEL Drinking Water Digital Form accessible both online and offline. Once the field survey is finished, Make facilitates communication with BPTEL analysts, notifying them that a sample has been collected and is in route to the lab. This enables staff to efficiently coordinate and assign tasks for sample reception.

Step 2: Client relinquishes the sample to the analyst, completing the Chain of Custody (COC) form using Survey123. The analyst then assigns a unique lab ID, generated through Survey123.

Step 3 and 4: The analyst initiates and concludes the analysis process using Survey123. Simultaneously, Make operates in the background, sending calendar reminders for necessary temperature checks and indicating when the sample is ready for analysis. This ensures that BPTEL maintains rigorous quality assurance and control over laboratory procedures.

Step 5 and 6: Survey123 generates a report that Make subsequently distributes to the analyst and other essential BPTEL personnel. This allows for a final review before the report is emailed to the client.

Step 7: The report is sent to the client and other pertinent personnel, concluding the process.
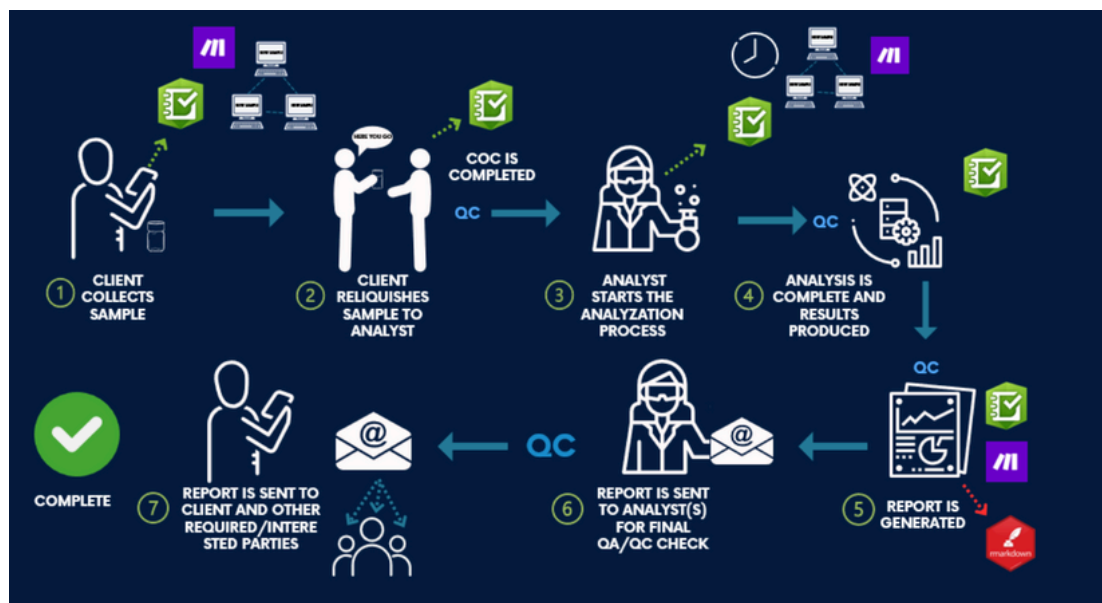
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