SAS Data Enhancements to Drive Environmental Solutions

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SAS is a Leader in Government

134

Countries with SAS government customers

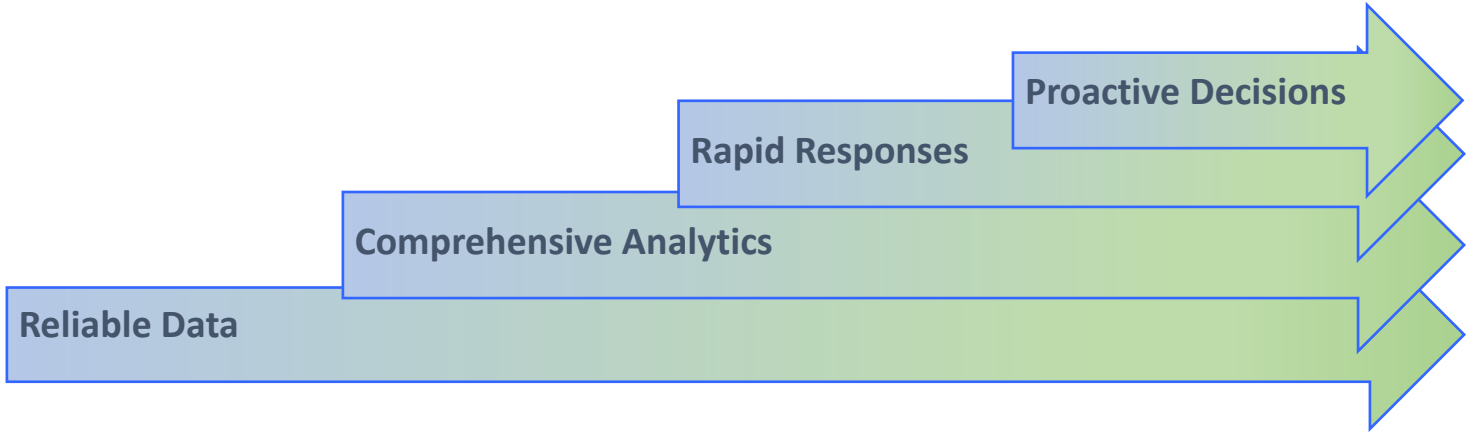
1,600+

Different departments, ministries and agencies

1976

Five decades of innovation, the first funded project was for government

Data	Reporting	Operational Analytics	Predictive Analytics
Water Usage Water Quality Discharges Drinking Water	Clean Water Act NPDES 303(d) TMDL Waste Clean Air Act	Identify pollution problems Enforce compliance	Forecast floods Predict river flow Estimate future water usage needs



Healthy Nevada Project

DNA Analysis Unlocks Better Health For Communities

Challenge

As one of the first community-based population studies in the US, the Healthy Nevada Project is focused on predicting, treating, and preventing disease by understanding how genetics, environment, social factors, and health care interact.

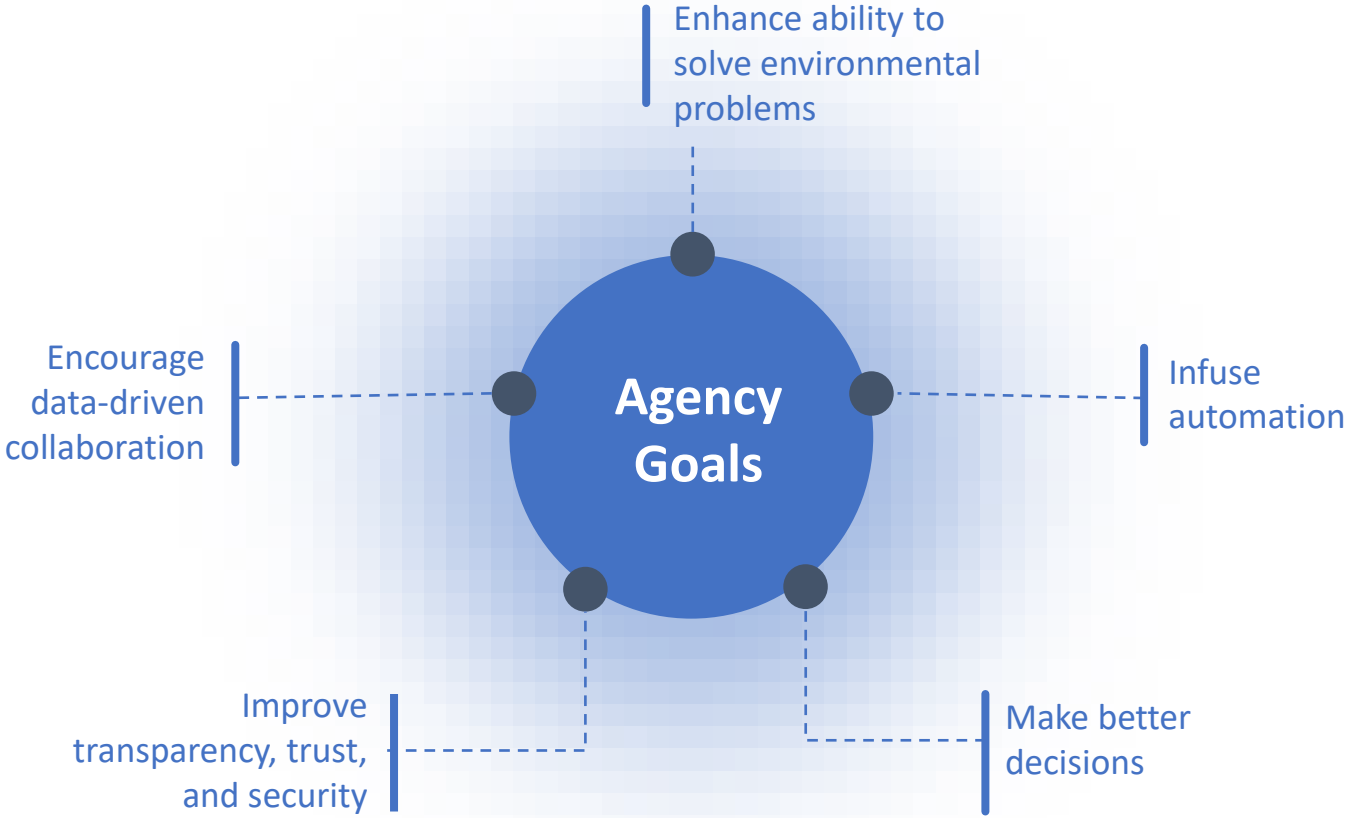
How SAS Helped

The SA Viya Platform, with its AI and machine learning capabilities, is the foundation bedrock of the Healthy Nevada Project. Researchers and physicians can combine genetic data, environmental data and individual health information and extract, transform, and study this data to gain insights into any health outcomes they want to focus on

Results

Now, users can comb through, manipulate, and extract 200 terabytes of genetics and health records data with speed and accuracy. Setting the right parameters, they can analyze a billion-record table of physician notes to generate new insights into population health and enable personalized health care, all while improving the health and well-being of entire communities in Nevada.

Using Data & Analytics to Drive Value



Enhance Problem Solving and Making Decisions

- Identifying sources of nutrients to improve water quality
- Performing water quality trend analysis
- Identifying data gaps in monitoring
- Conduct resource planning based on environmental stressor data
- Providing correlations between environmental stressors and water quality
- Identifying solutions for restoration strategies
- Associating flow paths with environmental stressors
- Estimating effects of converting septic tanks to sewer systems

Water Quantity Well Project

Evaluate Water Use:

- County
- Permit issuing agency
- Region of the state
- # of wells
- Trend analysis
- Predict future needs

Integrate Data – Optimize Collaboration

EPA ATTAINS - EPA ECHO - EPA GRTS - EPA WQ PORTAL

Infuse Automation in Reporting

Flood Prediction and Preparedness Solution

- Sensors collect and report real-time conditions
- Compare historical trends and perform forensic analysis
- Track the distribution of rainfall intensity over time and space
- Continuously update metrics associated with rain events to inform deteriorating conditions

- Flood Inundation model predicts location and depth of flooding
- Know where a flood will occur 6-hours in advance
- Can be used to measure effects of infrastructure changes and projects