



# FTA Awards Nomination/Entry Form

## Person who led this effort or project

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## About your program, idea, or project

**Name your program, idea, or project:** Data analytics automated oil and gas compliance tracker

### What is the problem that you wanted to solve?

New Mexico's tax revenues are heavily-reliant on oil and natural gas extraction. The data reported by the industry is also used to forecast future revenues. Having reliable data and quick reporting tools are essential to ensuring that taxes paid are compliant and that revenue estimates are as accurate as possible.

Additionally, past oil and gas production data is used to set future tax rates. Data integrity is key to ensuring that tax rates are set accurately, and tax distributions are done fairly. Due to the volatility of well ownership, tracking compliance can be challenging.

### Who was involved in addressing the problem?

The following New Mexico Taxation and Revenue Department employees were instrumental in the project– Efrain Ibarra, Economist Supervisor; Santiago Chavez, Audit & Compliance Division Director; Aysha Mora, Deputy Cabinet Secretary; Matthew Pillars, Operations Research Analyst; Larry Brotman, Geospatial Specialist; Resilient Solutions 21 (RS21).

### How did they go about finding a solution?

The Department received inquiries about data accuracy during the onset of the Covid-19 pandemic and found that oil and gas data reported via tax returns was not always accurate. This inaccuracy affected the data used for revenue estimation and for tax rate setting. After researching the problem, it was discovered that erroneous tax filings were the culprit of the issue. However, to discover what the root cause was, the Department spent several days manually analyzing data, cleaning and reconfiguring data sets. This prompted the idea to create an autonomous tool that sends alerts to taxpayers when there are errors in tax filings. Parameters are set to alert taxpayers when the data reported crosses certain thresholds.

### Describe the outcome. What is the new idea, approach, program, or activity?

The automated tracker enables the agency to track self-filed returns to identify compliance trends without having to initiate audits, a tremendous cost savings. By partnering with RS21, the Department developed a tool using RStudio and ArcGIS that combines production data with lease data from two other New Mexico State agencies. The data is combined and reported on a user-friendly dashboard that displays production data at a glance across the state. This tool is fully automated. As a result, Department analysts are not spending time downloading reports or combing through large datasets to identify the important information needed to ensure compliance and accurate tax rate setting. This new automated tool pulls data from external sources weekly in the background using an R Script that uses a web scraping tool.

**What has changed since this was implemented? How have your operations improved? Include any data, analytics or metrics that would show the value of your program. Don't forget management advantages such as improved morale.**

Since this was implemented, analysts spend zero time downloading reports, compiling data, and creating dashboards. Analysts and stakeholders now have real time access to the same information that enables them to make informed decisions. Now, instead of being reactive to requests by external parties, the Department is proactive, having developed an automated tool that delivers insights in real time. If anomalies are detected in the data, the system generates an alert that gets emailed to analysts and upper management. Tax rates will be set correctly, ensuring the State receives the correct amount of revenue from taxpayers. Revenue estimates will be informed by accurate data, allowing the State budget to be informed by the most accurate information possible.

**Is there any component of your program that makes it workable only in your state or city?**

Another agency with a similar tax type or this kind of problem could adapt or adopt this idea.

**Is this an in-house project, or did you partner with an outside vendor or service-provider?**

It's complicated. See details below.

**Additional information or comments about your usage of outside vendors or service providers.**

The collaboration with this vendor opened the door to bring automation to other procedures. This is important because it cuts back on the time spent on the data scrubbing and configuration stage and more time performing data analytics. Our partnership expanded our horizon in terms of what we could do with our data and take us to a place where we could ask better questions, rather than being stuck with manual review of the data.

**What comes next – will you be adding to your program, rolling it out more widely, trying additional approaches?**

The next step is to apply the lessons learned in this project, in particular the automation piece, to other areas in the Audit and Compliance Division. This project was a good starting point because it has a geospatial component. Rather than just creating tables and charts, we wanted to make it more visual for the average consumer. We are also looking towards more potential data models and dashboards for Audit and Compliance tracking

## **Additional Optional Materials**

**Website/Documentation URL (Must be publicly accessible)** <https://nmtrd.maps.arcgis.com/apps/dashboards/f48e7b2b639845cbbd5fa7f2a85b7c17>