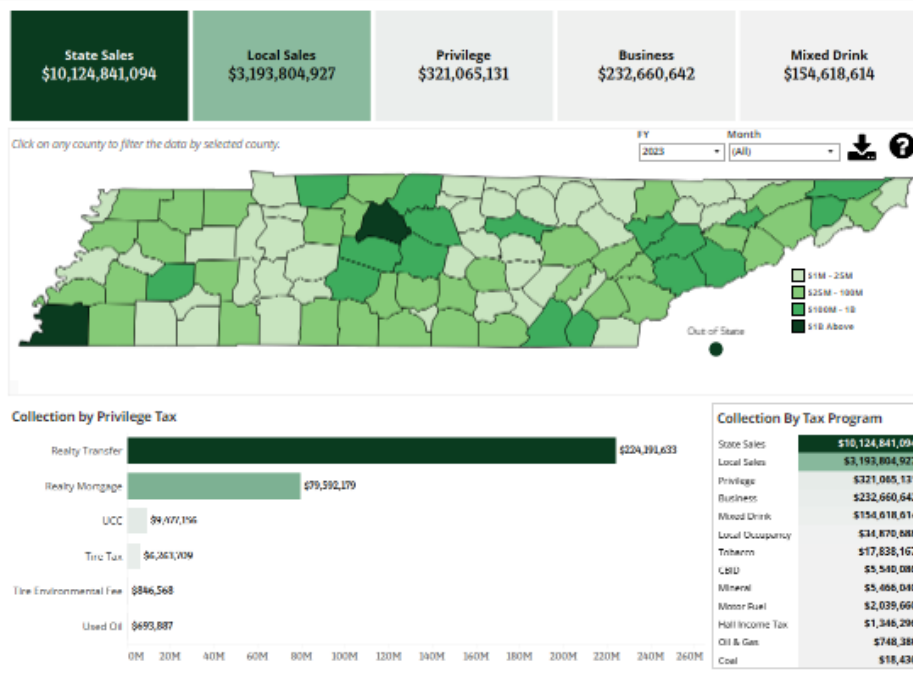


Monthly Tax Collection by County

This visualization reflects state taxes the Department of Revenue collects that have a local collection component attached to them. For that reason, it does not include tax types such as the franchise & excise tax.



Collections reported by cash basis fiscal years running from July through June. For example, fiscal year 2021 starts in July 2020 and ends in June 2021.

Revenue Tax Collection Dashboards: Shifting from Manual to Automatic Visualization

July 2021 - May 2023

NASCIO Award Category: Data Management, Analytics & Visualization

Submitting State: State of Tennessee, Department of Finance and Administration, STS

Contacts: Addy Newsom, Project Coordinator State CIO Office &
John Guethlein, Director, Business & Community Development Business Domain



Executive Summary

The Tennessee Department of Revenue (TDOR) is the primary revenue-collecting agency for the state of Tennessee. Their mission is to fund public services. The department is responsible for administering state tax laws established by the legislature and collecting taxes and fees associated with those laws. Modern tax administration technology is integral to revenue collection, disbursement, and excellent customer service. TDOR collects approximately 87 percent of state revenue and taxes for local, county, and municipal governments. The department also apportions revenue collections for distribution to various state funds and local governments. In addition to electronic filing needs, there are high expectations from taxpayers, tax professionals, and employees for real-time access to tax information and other data.

Traditionally, Revenue posted monthly tax collection records in an online booklet as a pdf or Excel spreadsheet. The collection books were 30-plus pages and cumbersome to navigate, and the public would have to comb through all those pages of data to find what they were looking for, making it difficult and time-consuming to find what they needed.

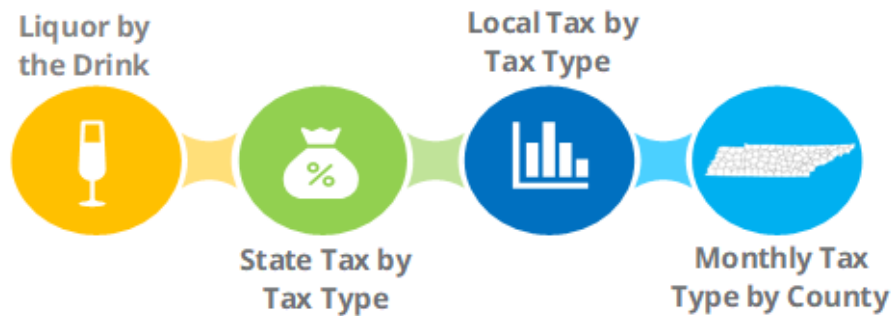
Because the traditional documents were difficult to navigate, there were many tax information inquiries from citizens, members of the Tennessee General Assembly, and reporters. The department previously posted tax information for Liquor by the Drink, State Tax by Tax Type, Local Tax by Tax Type, and Monthly Tax Type by County on their website in pdf and Excel spreadsheets for users to download and identify tax information needed. As public data requests came into the department, an individual was assigned to gather the data and fulfill the request. The manual nature of the process was time-consuming and took bandwidth away from important day-to-day operational responsibilities of that individual.

The Department of Revenue saw an opportunity to take something difficult to understand and digest to a more user-friendly format and, in some areas, expand what was available. The project's objective was to make it easier for the public to understand what collections look like where they lived. Therefore, technology was critical to support complex computations, data blending, and dashboarding to create visualizations to deliver more meaningful insights.

Idea

The Tennessee Department of Revenue is the state's primary tax collection agency, administering more than 25 different taxes and fees. The department's vision is to maximize voluntary compliance through transparency, innovation, and engagement.

The Department of Revenue senior staff, with support from STS, identified Tableau to be the perfect platform to illustrate Liquor by the Drink, State Tax by Tax Type, Local Tax by Tax Type, and Monthly Tax Type by County tax information.



The Department of Revenue Manual Process

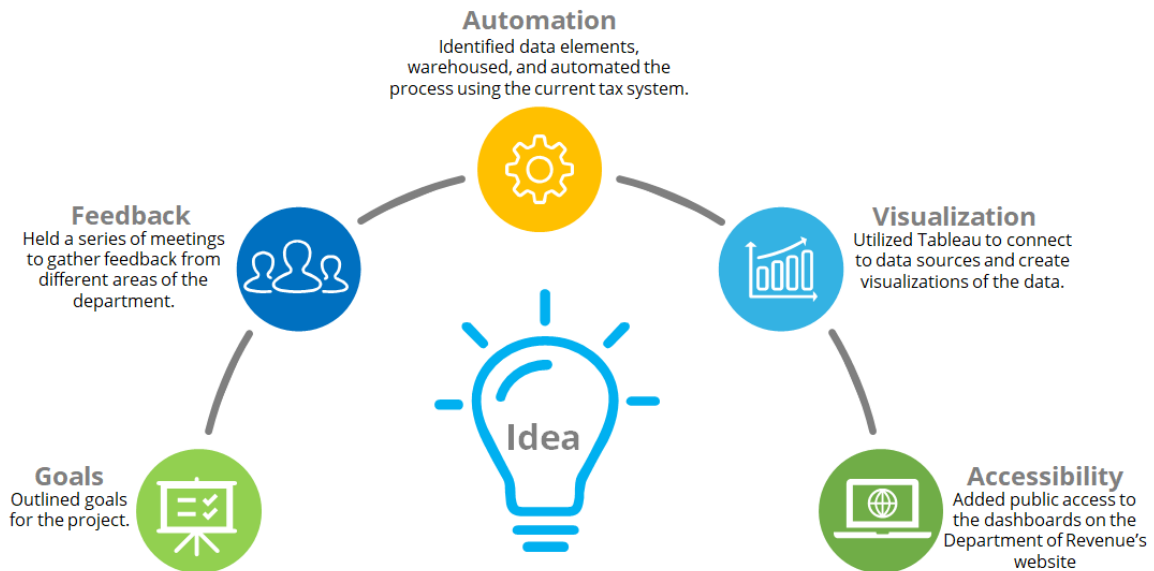
The department posted revenue collection books monthly in a spreadsheet or pdf form, and the information in the spreadsheets and pdf forms was challenging to drill down, understand, and find information specific to local communities. As a result, the department was overwhelmed with questions from citizens, legislators, reporters, and local government officials.

Public data requests came in regularly, and a staff member was assigned to each one to gather and fulfill the data. The manual process took 12 to 15 hours each month from the day-to-day operations of multiple resources, including Legal, Research Office, and Communications.



Implementation

The Department of Revenue leaders collaborated with Strategic Technology Solutions to outline goals for the project and held a series of meetings to gather feedback from the different divisions within TDOR. The project team worked with Revenue's TR3 division, which ensures the department's tax system meets business and information technology needs. Data elements were identified and warehoused so the data could be automatically updated monthly from the TR3 tax system. Tableau was utilized to connect to the data sources and create data visualizations. Tableau has an excellent reporting feature that allows you to customize and combine data sources, add filters, and drill down into specific information. The platform connects multiple live or extracted data sources, resulting in interactive visualizations offering faster and more meaningful insights.



The Department of Revenue Tax Collection Dashboards Team

Successful execution of the project required close collaboration between STS and TDOR. The project team outlined goals to create a more visual process, remove the human element, and automatically generate visualizations from the data to present on Revenue's website. The project's goal was to make something complicated much simpler. The project team wanted to simplify the dashboards so people could quickly locate the needed data. This project took several months of collaboration between STS and TDOR to gather and automate the monthly data flow process that populates and refreshes these dashboards.



Impact

The dashboards provide enhanced transparency and are more accessible and efficient for the citizens, the legislature, and reporters. In addition, Revenue employees spend far less time pulling separate, customized reports for requestors. It has become clear that having several dashboards accessible on TN.gov makes it more convenient for Revenue staff and customers. Visualizations make static data more user-friendly, useful for citizens, reporters, and legislators and create transparency. The dashboard aligns with Governor Bill Lee's goal of a Transparent & Efficient Government.

The tax collection dashboards make tax data more accessible and efficiently available to the public. Tennessee citizens may now download this data for personal use and view the data over time for trends, key performance indicators, county-level information, and fiscal years. The dashboards also connect to the TR3 system, automatically updating every month. Since the dashboards launched in autumn 2022, they have received more page visits than the department's traditional pdf and Excel tax collection records.

Department of Revenue Tax Collection Dashboards

The public can access four interactive dashboards on the Department of Revenue's home page on TN.gov. The dashboards have been promoted on Revenue's social media channels, and the Revenue Commissioner has spoken about the dashboards to the state legislature.



Liquor by the Drink

Liquor by the Drink is one of the most popular data requests the Department of Revenue receives. Citizens now have on demand functionality to view high-level KPI's, county level data, county ranking, historical trends, and a downloadable CSV file of this data.



State Tax by Tax Type

The State Tax by Tax Type breakdown by tax gives citizens the ability to view the data as a bar chart or pie chart, along with high-level KPI's of overall dollar amounts, and a breakdown of source taxes.



Local Tax Collection by Tax Type

Local Tax Collection by Tax Type shows high-level KPI's of total local tax collection and provides local tax type as a visualized bar graph.

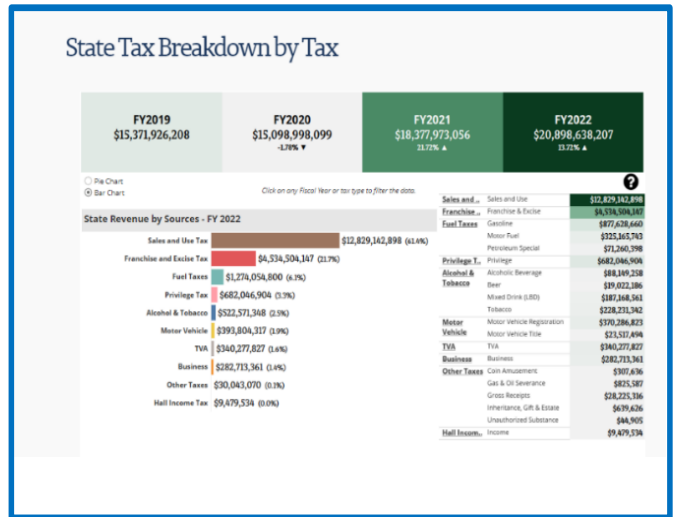
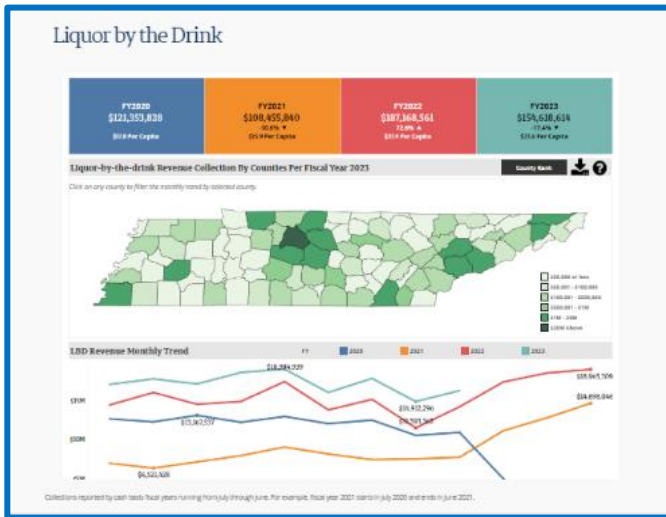
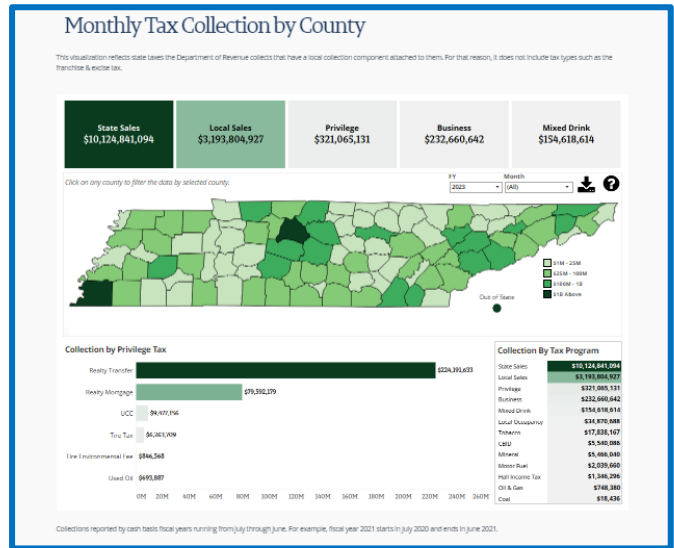
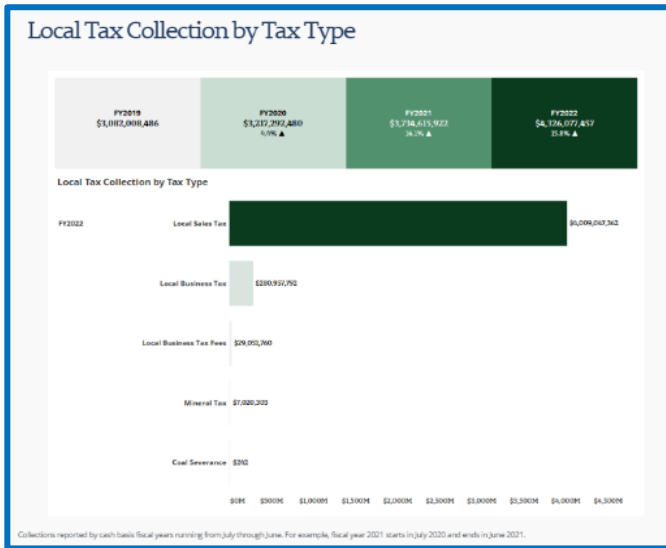


Monthly Tax Collection by County

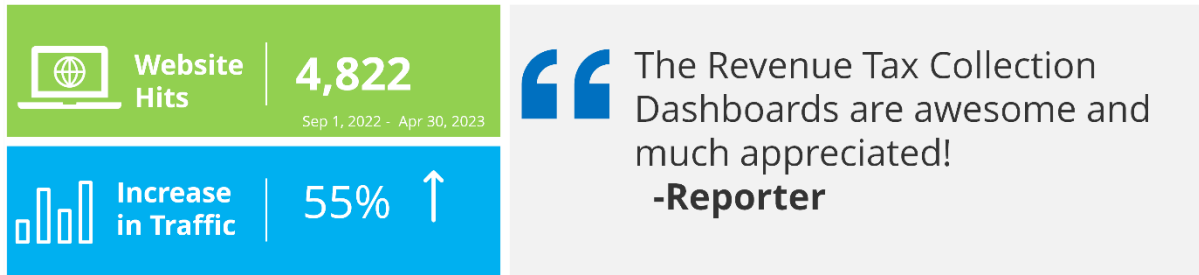
Monthly Tax Collection by County provides county level data, high-level KPI's, breakdown of privilege tax and those sources, fiscal year data, and a downloadable CSV file of this data.

Revenue Tax Collection Dashboards

The images below represent the Local Tax by Tax Type, and Monthly Tax Type by County, Liquor by the Drink, State Tax by Tax Type dashboards.



Dashboard Feedback



“The Revenue Tax Collection Dashboards are awesome and much appreciated!
-Reporter

“The data from the Tennessee Department of Revenue is instrumental to our department’s monitoring and measurement efforts for the Leisure & Hospitality industry. Tennessee is a sales tax state, and nearly every element of our industry qualifies for state sales taxes, occupancy taxes, liquor by the drink, or some combination thereof. The data the Department of Revenue provides to us directly, and publishes in their dashboards, helps our department keep a near real-time pulse on the state of our industry. The real value of this partnership is the validity the Department of Revenue data provides in the minds of elected officials. There is often a perception of inflated numbers in economic impact models, which makes it easy to dismiss those metrics. It is a lot harder to argue when we can say, “the Department of Revenue has received \$1.8B in sales tax collections from food/dining, attractions, and lodging last calendar year. That’s \$500M more than those categories brought in during CY2018.” Those are real dollars, and the Department of Revenue dashboards and data help us show that tourism is “real money” for Tennesseans.

On a more granular level, the Department of Revenue’s dashboard for county occupancy tax rates is a massive time saver for my daily work. Lodging is almost entirely driven by visitors and tourism, and thus occupancy taxes are almost entirely related to our industry’s efforts. Tennessee has 95 counties and over 300 cities. If the Department of Revenue did not host and maintain an occupancy tax dashboard, I would have to assemble those rates to accurately project the occupancy tax impact across Tennessee.”

-Josh Gibson, Research Director, Department of Tourism

Looking Forward

The team will be collecting feedback from customers and implementing adjustments accordingly. The team is also looking at additional ways to utilize Tableau to make static data in Excel documents, and PDFs come alive. Two recent examples include dashboards illustrating local sales tax rate data and local occupancy tax rate information.