

Chief Financial Office – Innovative Toolset for Budget and Finance in State Government

How the Budget & Finance Office has utilized Business Intelligence to build a toolset that has improved business processes, and provide a Cloud based self-service model for accessing financial information.



Texas Department of Information Resources

Transforming How
Texas Government
Serves Texans

dir.texas.gov | [@TexasDIR](https://twitter.com/TexasDIR) | [#DIRisIT](https://twitter.com/DIRisIT)

Lots of Options...

THE 2024 MAD (MACHINE LEARNING, ARTIFICIAL INTELLIGENCE & DATA) LANDSCAPE

The landscape is organized into several key sections:

- INFRASTRUCTURE:** Includes Storage (EMC, IBM, Veeva), Data Lakes/Warehouses (Snowflake, Databricks, AWS), Streaming (Kafka, Kinesis), and various database engines (Oracle, PostgreSQL, MongoDB).
- ANALYTICS:** Covers Data Science Notebooks (Jupyter, Databricks), Visualization (Tableau, PowerBI), and Data Analyst Platforms (Alteryx, Microsoft).
- MACHINE LEARNING & ARTIFICIAL INTELLIGENCE:** Features MLaaS (AWS, Azure, GCP), Enterprise ML Platforms (Databricks, SAS), and specialized AI/ML tools like OpenAI, Anthropic, and NVIDIA.
- APPLICATIONS — ENTERPRISE:** Divided into Customer Experience, Human Capital, Automation & Operations, and Regional Optimization.
- APPLICATIONS — HORIZONTAL:** Includes Code & Documentation, Text, Audio & Voice, Image, Presentation & Video, and Video Editing.
- APPLICATIONS — INDUSTRY:** Tailored for Finance & Insurance, Healthcare, Life Sciences, Transportation, Agriculture, and Industrial & Logistics.
- OPEN SOURCE INFRASTRUCTURE:** Lists frameworks like PyTorch, TensorFlow, and tools like Apache Spark, Hadoop, and Kubernetes.
- DATA SOURCES & APIs:** Focuses on data marketplaces (Alibaba, Databricks), financial data (Bloomberg), and various industry-specific data sources.
- DATA & AI CONSULTING:** Lists major consulting firms such as Deloitte, IBM, Accenture, and PwC.

Version 1.0 - March 2024 | © Matt Turck (@mattturck), Aman Kabeer (@Amankabeer11) & FirstMark (@firstmarkcap) | Blog post: mattrurck.com/MAD2024 | Interactive version: MAD.firstmarkcap.com | Comments? Email MAD2024@firstmarkcap.com

FIRSTMARK
EARLY STAGE VENTURE CAPITAL





Follow Your Procurement Guidelines



**Be Sure to Include
Your Information
Technology Team**

How Did It Start?

What Did We Do?



**Established
Logic**



**Bridged
the gap**



**Applied
Innovation**

Why Did We Choose This Path?



**Improves
Consistency**



**Improves
Efficiency**



**Extremely
Accurate**



Let's Dive In

Established the Logic



Utilizing the Logic



Utilized Native Functionality

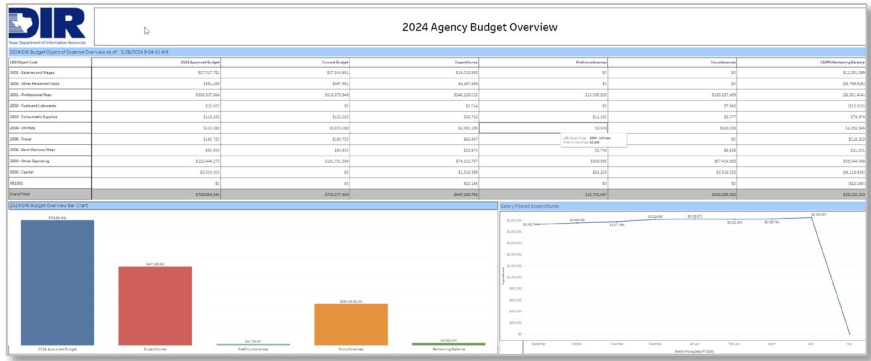


To Create Dashboards, Reports & Apply Innovative Processes

Utilizing the Logic



Utilized Native Functionality



IOB - 3A Entry Sheets

Strategy: (LAD)

| LBB Object - Good | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|------------------------------|----------------------|----------------------|----------------------|
| 1001 - Salaries and Wages | \$19,039,136 | \$20,798,636 | \$27,417,781 |
| 1002 - Other Personnel Costs | \$777,196 | \$391,289 | \$391,289 |
| 2001 - Professional Fees | \$437,865,402 | \$556,137,654 | \$556,137,654 |
| 2002 - Fuels and Lubricants | \$8,965 | \$7,593 | \$10,000 |
| 2003 - Consumable Supplies | \$30,467 | \$46,253 | \$112,225 |
| 2004 - Utilities | \$8,965,232 | \$112,791 | \$110,088 |
| 2005 - Travel | \$21,524 | \$143,526 | \$130,720 |
| 2006 - Rent Building | \$21,524 | \$25,533 | \$50,500 |
| 2007 - Rent Machine Other | \$2,793 | \$7,893 | \$0 |
| 2009 - Other Operating | \$1,254 | \$150,524,501 | \$122,444,273 |
| 5000 - Capital | \$1,254 | \$99,499 | \$2,000,000 |
| Grand Total | \$595,826,826 | \$675,969,751 | \$708,854,541 |

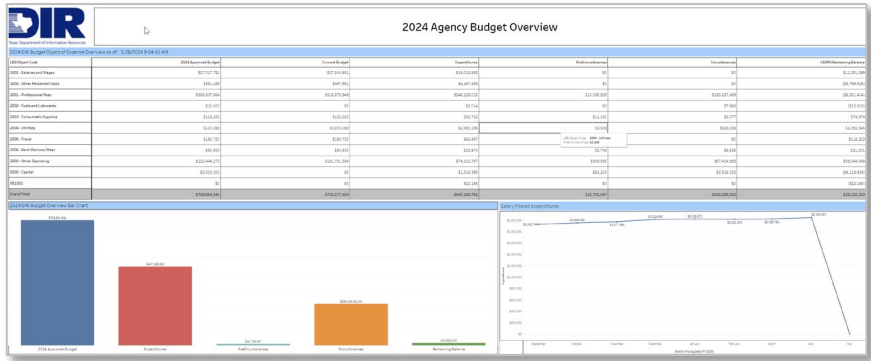
| LBB Fund Grouping | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|--|----------------------|----------------------|----------------------|
| 0001 - General Revenue | \$541,129 | \$10,450,583 | \$47,261,676 |
| 0555 - Federal Funds | \$418,326 | \$449,601 | \$328,074 |
| 0990 - Other Special State Funds | \$0 | \$0 | \$1,098,839 |
| 8122 - DIR Clearing Fund Account - AR | \$22,274,329 | \$22,097,284 | \$19,952,507 |
| 8123 - Telecommunications Revolving - AR | \$31,077,352 | \$85,880,719 | \$119,279,146 |
| 8125 - Telecommunications Revolving - IAC | \$89,023,076 | \$28,775,505 | \$861,110 |
| 8126 - Statewide Technology Account - IAC | \$411,547,050 | \$476,273,750 | \$471,913,888 |
| 8127 - State Technology Acct - Appt Receipts | \$0 | \$3,513,823 | \$0 |
| 8143 - Statewide Network Apps Acct - AR | \$40,955,515 | \$46,409,632 | \$49,019,292 |
| 8144 - Statewide Network Apps Acct - IAC | \$0 | \$2,120,856 | \$0 |
| Grand Total | \$595,826,826 | \$675,969,751 | \$708,854,541 |



To Create Dashboards, Reports & Apply Innovative Processes

Utilizing the Logic

Utilized Native Functionality

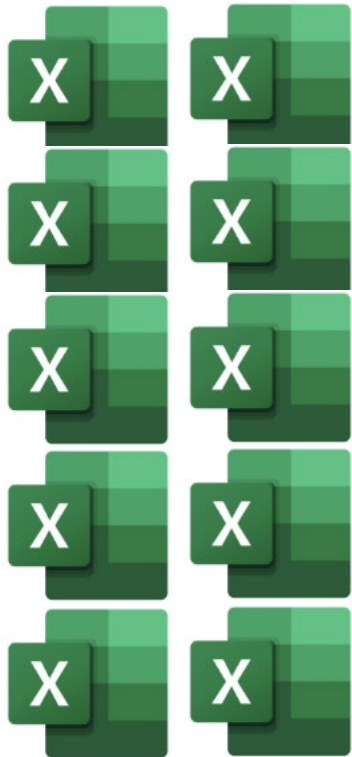


| LBB Object - Good | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|------------------------------|----------------------|----------------------|----------------------|
| 1001 - Salaries and Wages | \$19,039,136 | \$20,798,636 | \$27,417,781 |
| 1002 - Other Personnel Costs | \$777,196 | \$391,289 | \$391,289 |
| 2001 - Professional Fees | \$437,865,402 | \$556,137,654 | \$556,137,654 |
| 2002 - Fuels and Lubricants | \$8,965 | \$7,593 | \$10,000 |
| 2003 - Consumable Supplies | \$30,467 | \$46,253 | \$112,225 |
| 2004 - Utilities | \$8,819,127 | \$112,791 | \$110,088 |
| 2005 - Travel | \$85,232 | \$143,526 | \$130,720 |
| 2006 - Rent Building | \$21 | \$25,533 | \$50,500 |
| 2007 - Rent Machine Other | \$2,731 | \$7,893 | \$0 |
| 2009 - Other Operating | \$1,254,254 | \$150,524,501 | \$122,444,273 |
| 5000 - Capital | \$0 | \$99,499 | \$2,000,000 |
| Grand Total | \$595,826,826 | \$675,969,751 | \$708,854,541 |

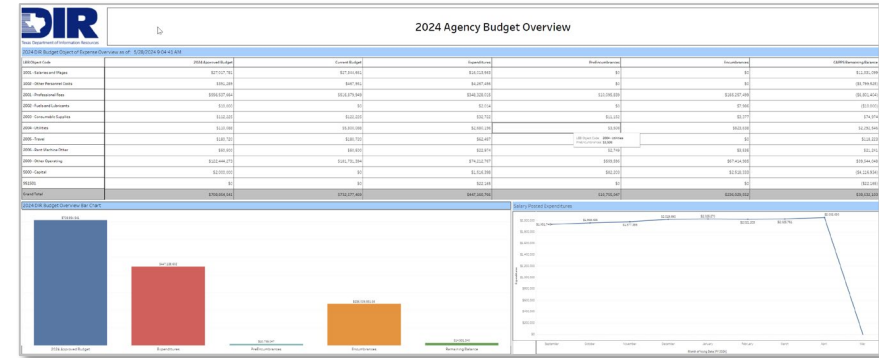


To Create Dashboards, Reports & Apply Innovative Processes

Utilizing the Logic



Utilized Native Functionality



IOB - 3A Entry Sheets

Strategy: (LAD)

| LB Object - Good | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|------------------------------|----------------------|----------------------|----------------------|
| 1001 - Salaries and Wages | \$19,039,136 | \$20,798,636 | \$27,417,781 |
| 1002 - Other Personnel Costs | \$777,196 | | \$391,289 |
| 2001 - Professional Fees | \$437,865,402 | | \$556,137,654 |
| 2002 - Fuels and Lubricants | \$8,965 | \$7,593 | \$10,000 |
| 2003 - Consumable Supplies | \$30,467 | \$46,253 | \$112,225 |
| 2004 - Utilities | \$9,875,917 | \$112,791 | \$110,088 |
| 2005 - Travel | \$95,232 | \$143,526 | \$130,720 |
| 2006 - Rent Building | \$21 | \$25,533 | \$50,500 |
| 2007 - Rent Machine Other | \$2,737 | \$7,893 | \$0 |
| 2009 - Other Operating | \$1,122,444,273 | \$150,524,501 | \$122,444,273 |
| 5000 - Capital | \$1,254 | \$99,499 | \$2,000,000 |
| Grand Total | \$555,826,826 | \$675,969,751 | \$708,854,541 |

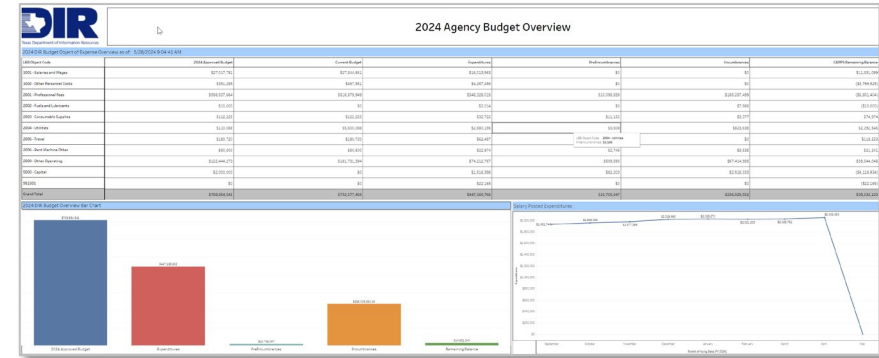
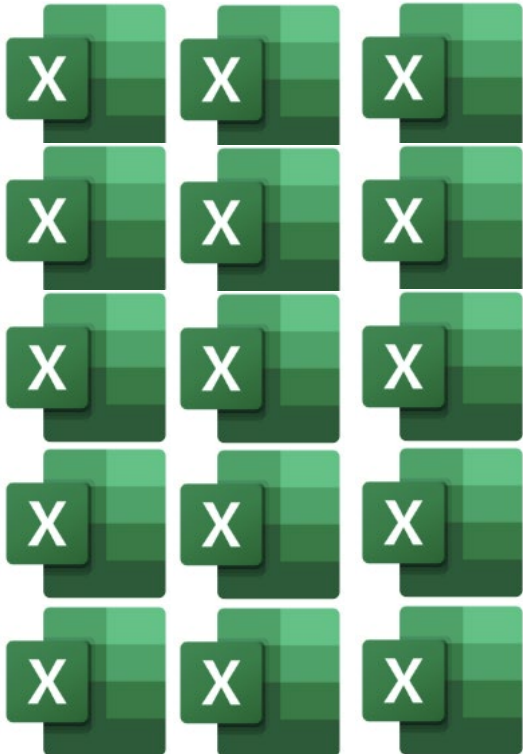
| LB Fund Grouping | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|--|----------------------|----------------------|----------------------|
| 0001 - General Revenue | \$541,129 | \$10,450,583 | \$47,261,676 |
| 0555 - Federal Funds | \$418,326 | \$449,601 | \$328,074 |
| 0990 - Other Special State Funds | \$0 | \$0 | \$1,098,839 |
| 8122 - DIR Clearing Fund Account - AR | \$22,274,329 | \$22,097,284 | \$19,952,507 |
| 8123 - Telecommunications Revolving - AR | \$31,077,352 | \$85,880,719 | \$119,279,146 |
| 8125 - Telecommunications Revolving - IAC | \$89,023,076 | \$28,775,505 | \$861,110 |
| 8126 - Statewide Technology Account - IAC | \$411,547,050 | \$476,273,750 | \$471,913,888 |
| 8127 - State Technology Acct - Appt Receipts | \$0 | \$3,511,821 | \$0 |
| 8143 - Statewide Network Apps Acct - AR | \$40,955,515 | \$46,409,632 | \$49,019,292 |
| 8144 - Statewide Network Apps Acct - IAC | \$0 | \$2,120,656 | \$0 |
| Grand Total | \$555,826,826 | \$675,969,751 | \$708,854,541 |

DRAFT

To Create Dashboards, Reports & Apply Innovative Processes

Utilizing the Logic

Utilized Native Functionality



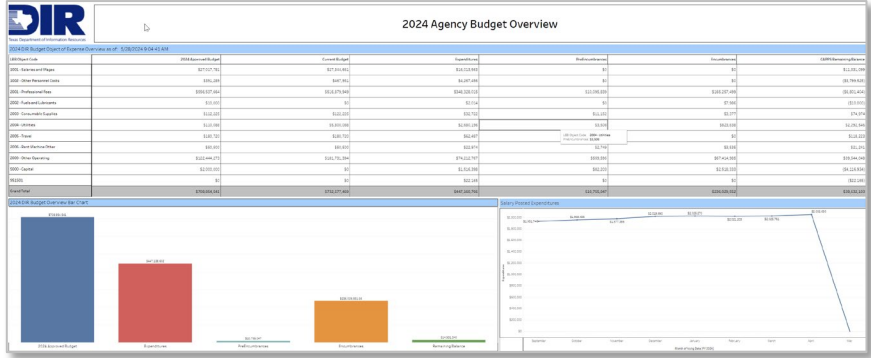
| Category | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|------------------------------|----------------------|----------------------|----------------------|
| 1001 - Salaries and Wages | \$19,039,136 | \$20,798,636 | \$27,417,781 |
| 1002 - Other Personnel Costs | \$777,196 | | \$391,289 |
| 2001 - Professional Fees | \$437,865,402 | | \$556,137,654 |
| 2002 - Fuels and Lubricants | \$8,965 | \$7,593 | \$10,000 |
| 2003 - Consumable Supplies | \$30,467 | \$46,253 | \$112,225 |
| 2004 - Utilities | \$9,800,000 | \$112,791 | \$110,088 |
| 2005 - Travel | \$95,232 | \$143,526 | \$130,720 |
| 2006 - Rent Building | \$21 | \$25,533 | \$50,500 |
| 2007 - Rent Machine Other | \$2,700 | \$7,893 | \$0 |
| 2009 - Other Operating | \$1,000,000 | \$150,524,501 | \$122,444,273 |
| 5000 - Capital | \$1,254 | \$99,499 | \$2,000,000 |
| Grand Total | \$555,826,826 | \$675,969,751 | \$708,854,541 |



To Create Dashboards, Reports & Apply Innovative Processes

Utilizing the Logic

Utilized Native Functionality



IOB - 3A Entry Sheets

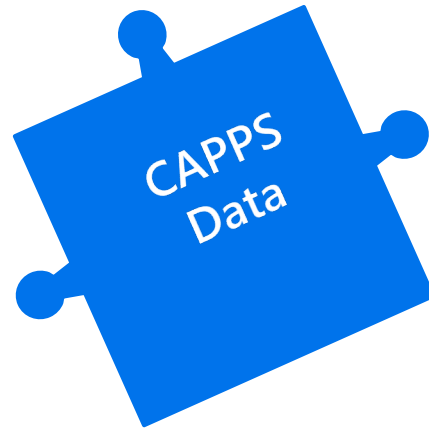
Strategy: (All)

| LB8 Object - Good | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|------------------------------|---------------|---------------|----------------------|
| 1001 - Salaries and Wages | \$19,039,136 | \$20,798,636 | \$27,417,781 |
| 1002 - Other Personnel Costs | \$777,196 | | \$391,289 |
| 2001 - Professional Fees | \$437,865,402 | | \$556,137,654 |
| 2002 - Fuels and Lubricants | \$8,965 | \$7,593 | \$10,000 |
| 2003 - Consumable Supplies | \$30,467 | \$46,253 | \$112,225 |
| 2004 - Utilities | \$9,879,717 | \$112,791 | \$110,088 |
| 2005 - Travel | \$95,232 | \$143,526 | \$130,720 |
| 2006 - Rent Building | \$21 | \$25,533 | \$50,500 |
| 2007 - Rent Machine Other | \$2,737 | \$7,893 | \$0 |
| 2009 - Other Operating | \$1,200,000 | \$150,524,501 | \$122,444,273 |
| 5000 - Capital | \$1,254 | \$99,499 | \$2,000,000 |
| Grand Total | \$595,826,826 | \$675,969,751 | \$708,854,541 |

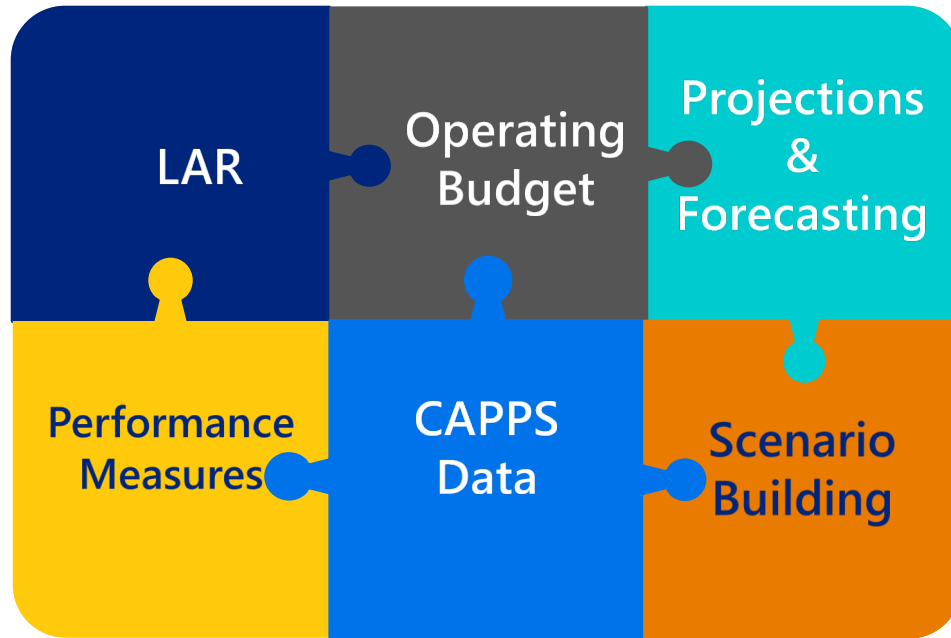
| LB8 Fund Grouping | 2022 EXP | 2023 Expected | 2024 Approved Budget |
|--|---------------|---------------|----------------------|
| 0001 - General Revenue | \$541,129 | \$10,450,583 | \$47,261,676 |
| 0555 - Federal Funds | \$418,326 | \$449,601 | \$328,074 |
| 0990 - Other Special State Funds | \$0 | \$0 | \$1,098,839 |
| 8122 - DIR Clearing Fund Account - AR | \$22,274,329 | \$22,097,284 | \$19,952,507 |
| 8123 - Telecommunications Revolving - AR | \$31,077,352 | \$85,880,719 | \$119,279,146 |
| 8125 - Telecommunications Revolving - IAC | \$89,023,076 | \$28,775,505 | \$861,110 |
| 8126 - Statewide Technology Account - IAC | \$411,547,058 | \$476,273,750 | \$471,913,888 |
| 8127 - State Technology Acct - Appt Receipts | \$0 | \$3,513,823 | \$0 |
| 8143 - Statewide Network Apps Acct - AR | \$40,955,515 | \$46,409,632 | \$49,019,292 |
| 8144 - Statewide Network Apps Acct - IAC | \$0 | \$2,120,856 | \$0 |
| Grand Total | \$595,826,826 | \$675,969,751 | \$708,854,541 |



What Business Processes Are Being (or Have Been) Completed Using These Tools?



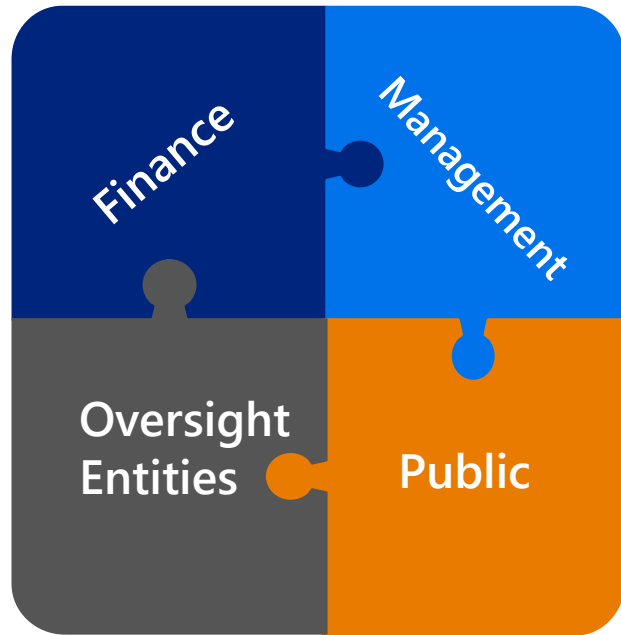
Bringing Many Aspects of Our Workload Together



Know the Audience and...



...How They May Be Connected.



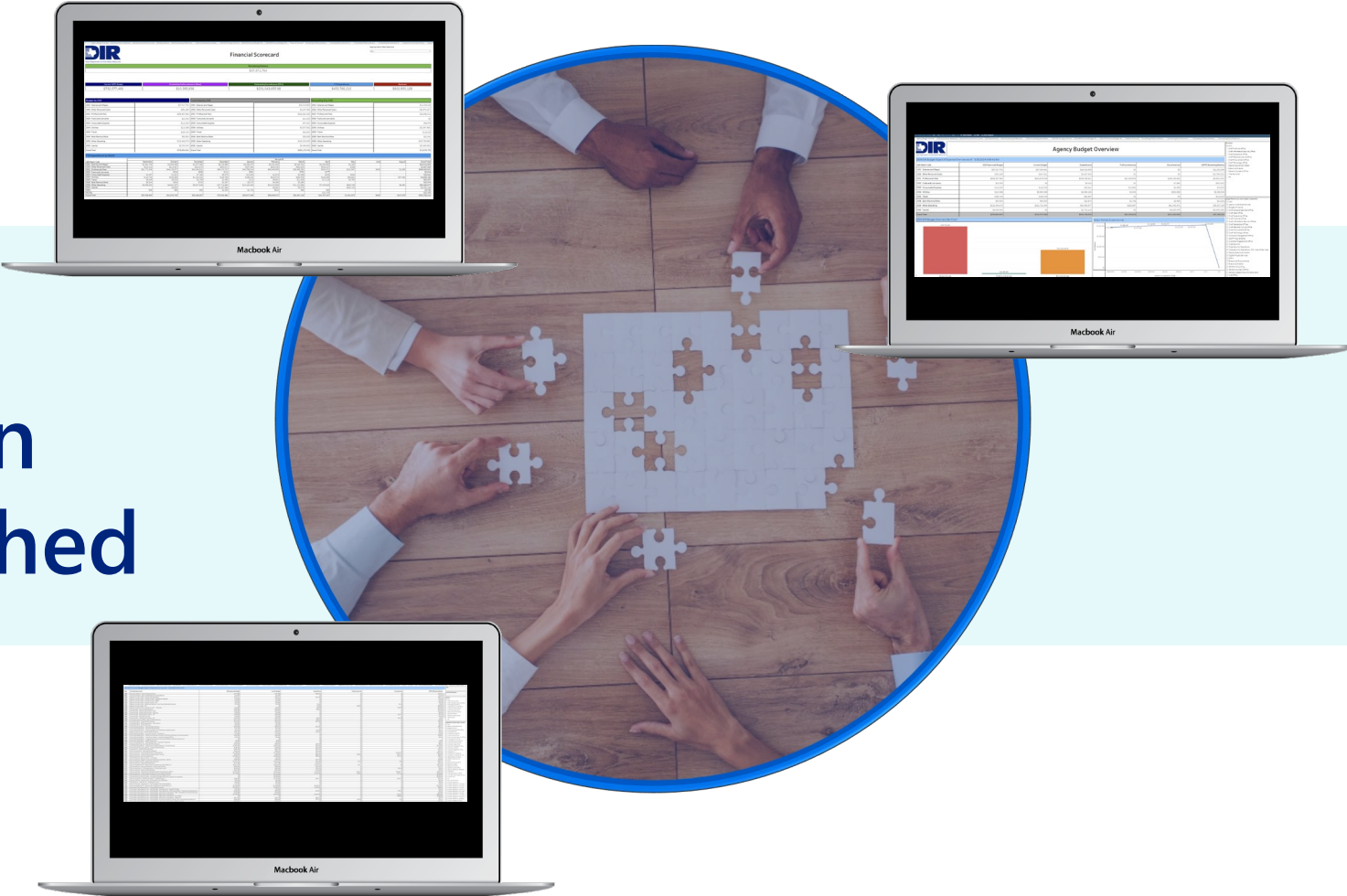
**You Will Gain Insight
Into How People Interact
with Your Information**



Assist In Your Development



Provide Insights Into What Information Can and Should Be Published



Help Guide Your Team Throughout the Journey





Suggestions for Success

Get Organized

Make sure you have a plan in place.



Be Prepared

There will be hurdles. There will also be challengers.



Be Collaborative

Work with your team. Work with your stakeholders.



Have Good Data!

Ensure you are working with good data.
This can be a deal breaker.



Implementation Schedule

Be realistic with your schedule and be sure to communicate it to the stakeholders.



Targeted Reports

Quick wins are key to the success.



Adaptability

Once the journey begins, know that people will want more. Be adaptable to the needs of the customers.



**These Will Assist
in Your Success**



Tableau Cloud

What Does Our Tableau Cloud Look Like?

The screenshot displays the Tableau Cloud interface for a workspace named "1 - Chief Financial Office". On the left is a navigation sidebar with the DIR logo and menu items: Home, Favorites, Recents, Shared with Me, Recommendations, Personal Space, Collections, Explore (highlighted), and Tableau Pulse. The main area shows the workspace name, owner (James Joseph), and a "New" button. Below are three report thumbnails: "1 - Leadership Reports" (EXECUTIVE LEADERSHIP TEAM – REPORTS / DASHBOARDS), "2 - DIR Budget Reports" (BUDGET REPORTS), and "Procurement Reports" (PROCUREMENT ITEMS). Each thumbnail includes an information icon, a star, and a menu icon.

Whether You Want to Do Deep Dives Into Custom Reports on the Fly


The screenshot displays a Tableau workspace for 'DIR Tableau Daily Budget Status Reports'. The interface includes a left-hand navigation pane with options like Home, Favorites, Recents, Shared with Me, Recommendations, Personal Space, Collections, Explore, Tableau Pulse, External Assets, Users, Groups, Jobs, Tasks, Data Labels, Site Status, and Settings. The main workspace is filled with a grid of 55 different views, each representing a different report or dashboard. These views include:

- Agency Budget Overview
- 2024 Expenditure Dashbo...
- Expenditures by Partner b...
- 2024 Expenditures
- 2024 Outstanding PreEnc...
- 2024 Outstanding Encum...
- 2024 DIR Strategy Overv...
- 2024 DIR Divisional Budg...
- 2024 DIR Divisional Budg...
- Financial Scorecard
- Outstanding PreEncumbr...
- Outstanding Encumbranc...
- Outstanding PreEncumbr...
- Outstanding Encumbranc...
- Expenditure Line Chart All...
- Salary Posted Expenditures
- Expenditure Line Chart All...
- 2024 DIR Budget Object o...
- TDIS MFA
- TDIS MFA (2)
- EDR
- 2024 DIR Budget Overvie...
- 2024 Capital Budget Rep...
- Texas Gov COS Budget Ov...
- Projection Output
- DIR Staff Augmentation R...
- DIR Market Research Bud...
- 2024 DIR Budget Method...
- Staff Aug Budgets
- ALL Payments to Vendors ...
- ALL CAPPS Transactions t...
- ALL CAPPS Payments to ...
- YTD Expenditures by Mon...
- Budget by OOE
- Committed by OOE
- Remaining \$ by OOE
- Prior Year Financial Score...
- DIR CAPPS Verification of...
- GASB 96
- Board Approved Budget f...
- EDR, MFA, RSOC Budget...
- Open PO Balances
- 2024 PO Balances
- Historical Spend by OOE ...
- EXP by OOE
- EXP by MOF
- Budget Clean Up
- DIR Cyber Security Dashb...
- Department of Informatio...
- Department of Informatio...
- DIR 2024
- DIR 2025
- Purchase Orders Listing
- 2024 Expenditures Map
- 2024 Expenditure List

The dashboard also features a search bar at the top right for views, workbooks, and more, and a 'Sort By' dropdown menu at the top right of the grid.



High-Level Overviews



Agency Budget Overview

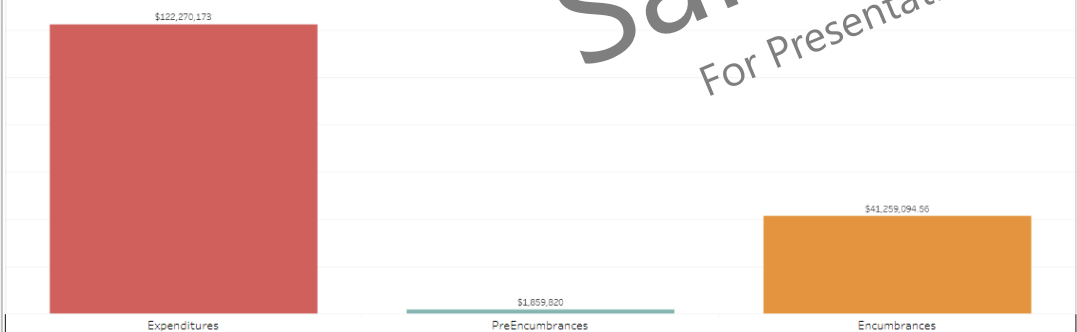
Division

- (All)
- Chief Financial Office
- Chief Information Security Office
- Chief Operations Office
- Chief People & Culture Office
- Chief Procurement Office
- Chief Technology Office
- Deputy Executive Director
- Executive Director
- General Counsel's Office
- Internal Audit
- NA

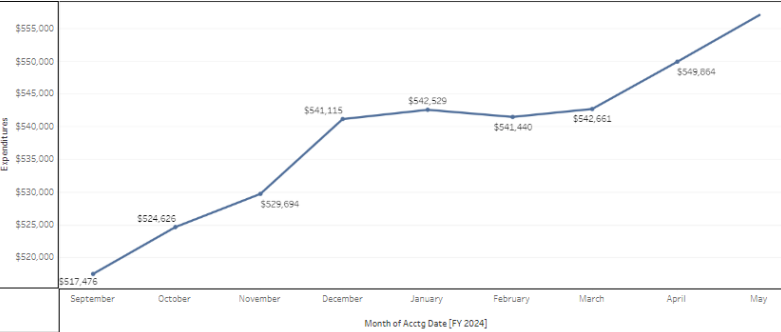
2024 DIR Budget Object of Expense Overview as of: 6/4/2024 4:47:05 PM

| LBB Object Code | 2024 Approved Budget | Current Budget | Expenditures | PreEncumbrances | Encumbrances | CAPPS Remaining Balance |
|------------------------------|----------------------|---------------------|----------------------|--------------------|---------------------|-------------------------|
| 1001 - Salaries and Wages | \$27,017,781 | \$23,901,969 | \$4,846,409 | \$0 | \$0 | \$19,055,560 |
| 1002 - Other Personnel Costs | \$391,289 | \$409,019 | \$1,288,859 | \$0 | \$0 | (\$879,840) |
| 2001 - Professional Fees | \$556,537,664 | \$449,881,743 | \$93,345,611 | \$906,146 | \$29,474,806 | \$325,255,180 |
| 2002 - Fuels and Lubricants | \$10,000 | \$0 | \$540 | \$0 | \$1,425 | (\$1,965) |
| 2003 - Consumable Supplies | \$112,225 | \$106,837 | \$8,824 | \$1,942 | \$617 | \$95,454 |
| 2004 - Utilities | \$110,088 | \$5,069,857 | \$7,272 | \$632 | \$146,188 | \$4,203,765 |
| 2005 - Travel | \$180,720 | \$157,967 | \$17,275 | \$0 | \$0 | \$140,492 |
| 2006 - Rent Machine Other | \$50,500 | \$44,142 | \$6,208 | \$492 | \$595 | \$36,847 |
| 2009 - Other Operating | \$122,444,273 | \$140,038,220 | \$21,567,886 | \$50,608 | \$10,992,063 | \$107,427,663 |
| 5000 - Capital | \$2,000,000 | \$469,088 | \$469,088 | \$0 | \$643,399 | (\$1,112,488) |
| Grand Total | \$708,854,541 | \$619,09,754 | \$122,270,175 | \$1,859,820 | \$41,259,095 | \$454,220,667 |

2024 DIR Budget Overview Bar Chart



| Category | Value |
|-----------------|---------------|
| Expenditures | \$122,270,173 |
| PreEncumbrances | \$1,859,820 |
| Encumbrances | \$41,259,095 |

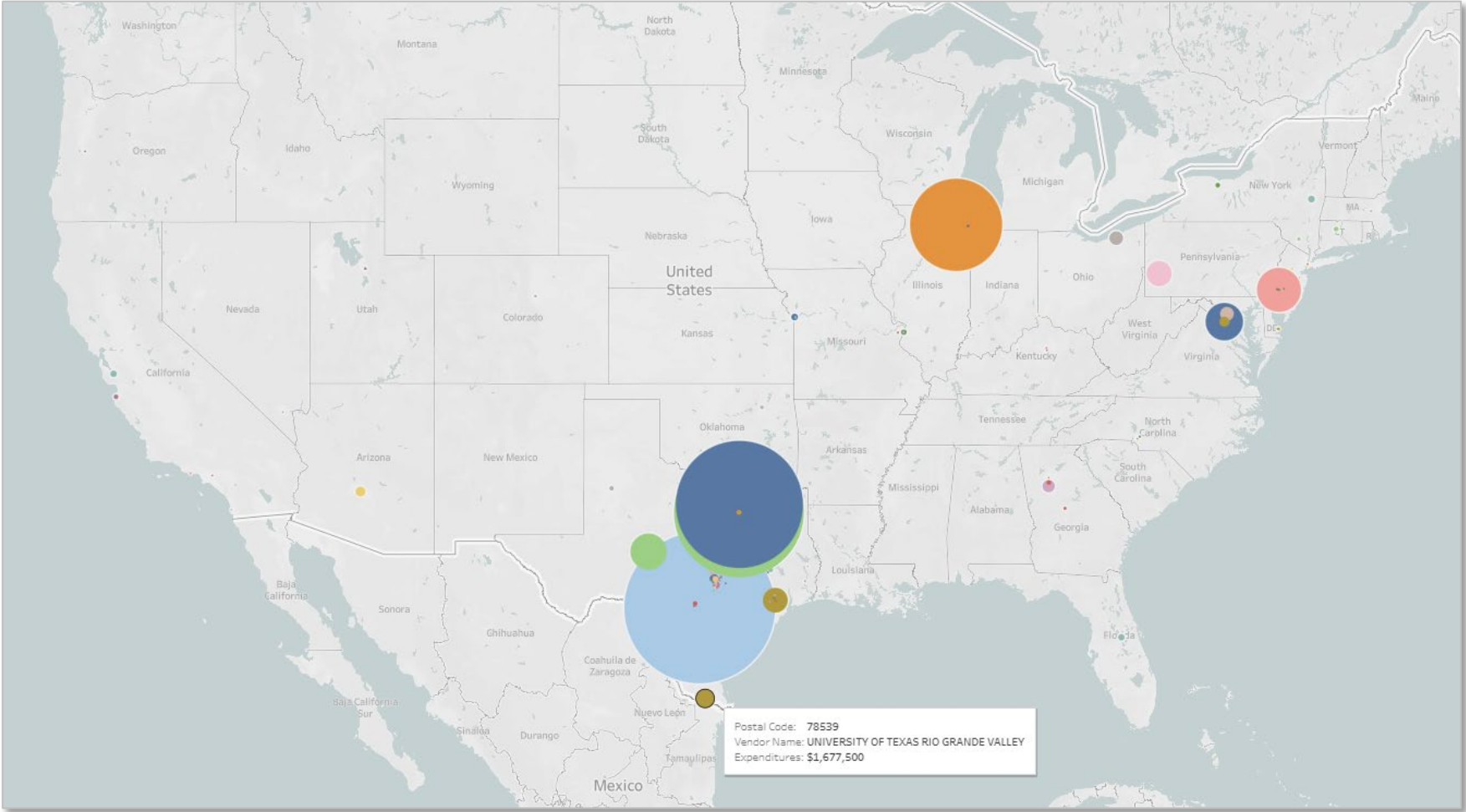


| Month of Acctg Date [FY 2024] | Expenditures |
|-------------------------------|--------------|
| September | \$517,476 |
| October | \$524,626 |
| November | \$529,694 |
| December | \$541,115 |
| January | \$542,529 |
| February | \$541,440 |
| March | \$542,661 |
| April | \$549,864 |
| May | \$549,864 |

Department (Division Dept Crosswalk)

- (All)
- Agency-Wide Expenditures
- Budget & Finance
- Chief Compliance & Risk Office
- Chief Data Office
- Chief Experience Office
- Chief Financial Officer
- Chief Information Security Officer
- Chief Operations Officer
- Chief People & Culture Office
- Chief Procurement Officer
- Chief Technology Officer
- Contracts Management Office
- COOP Procurements
- Customer Engagement Office
- Cybersecurity
- Cybersecurity Operations
- Cybersecurity Operations - CTS - Cost Of Services
- Deputy Executive Director
- Digital Project Services
- DIR-A
- Enterprise Procurements
- Executive Director
- General Accounting
- General Counsel's Office
- General Ledger/Accounts Receivable
- HUB Office

The Opportunities Are Endless





What is Next?...AI?

AI is Everywhere...

The screenshot displays a Tableau workspace interface. On the left is a sidebar with navigation options: Home, Favorites, Recents, Shared with Me, Recommendations, Personal Space, Collections, Explore, and Tableau Pulse. A red arrow points to the 'Tableau Pulse' option. The main area shows a folder titled '1 - Chief Financial Office' owned by James Joseph. Below the folder are three report thumbnails:

- 1 - Leadership Reports**: EXECUTIVE LEADERSHIP TEAM – REPORTS / DASHBOARDS
- 2 - DIR Budget Reports**: BUDGET REPORTS
- Procurement Reports**: PROCUREMENT ITEMS

We are Carefully Dipping Our Toes In

Tableau Pulse

You're about to use Tableau AI: Generative AI can produce inaccurate or harmful responses. Review output for accuracy and safety. You assume responsibility for how the outcomes of Tableau AI are applied to your organization.

Today's Tableau Pulse

Last refreshed 20 hours ago

⚠ We couldn't craft an insight summary from followed metrics with Null values. ⓘ

Following Browse Metrics

Fiscal Year to Date - 2024, null +14

2024 Expenditures

\$453.8M

Can't compare data when the value is null.

| Month | Expenditures |
|-------|--------------|
| Sep | \$4.4M |
| May | \$453.8M |

The trend for **2024 Expenditures** changed 6 months ago and is now **increasing at a slower rate**.

Fiscal Year to Date

of Requisitioners

20

+25.0% (+4) vs. prior period

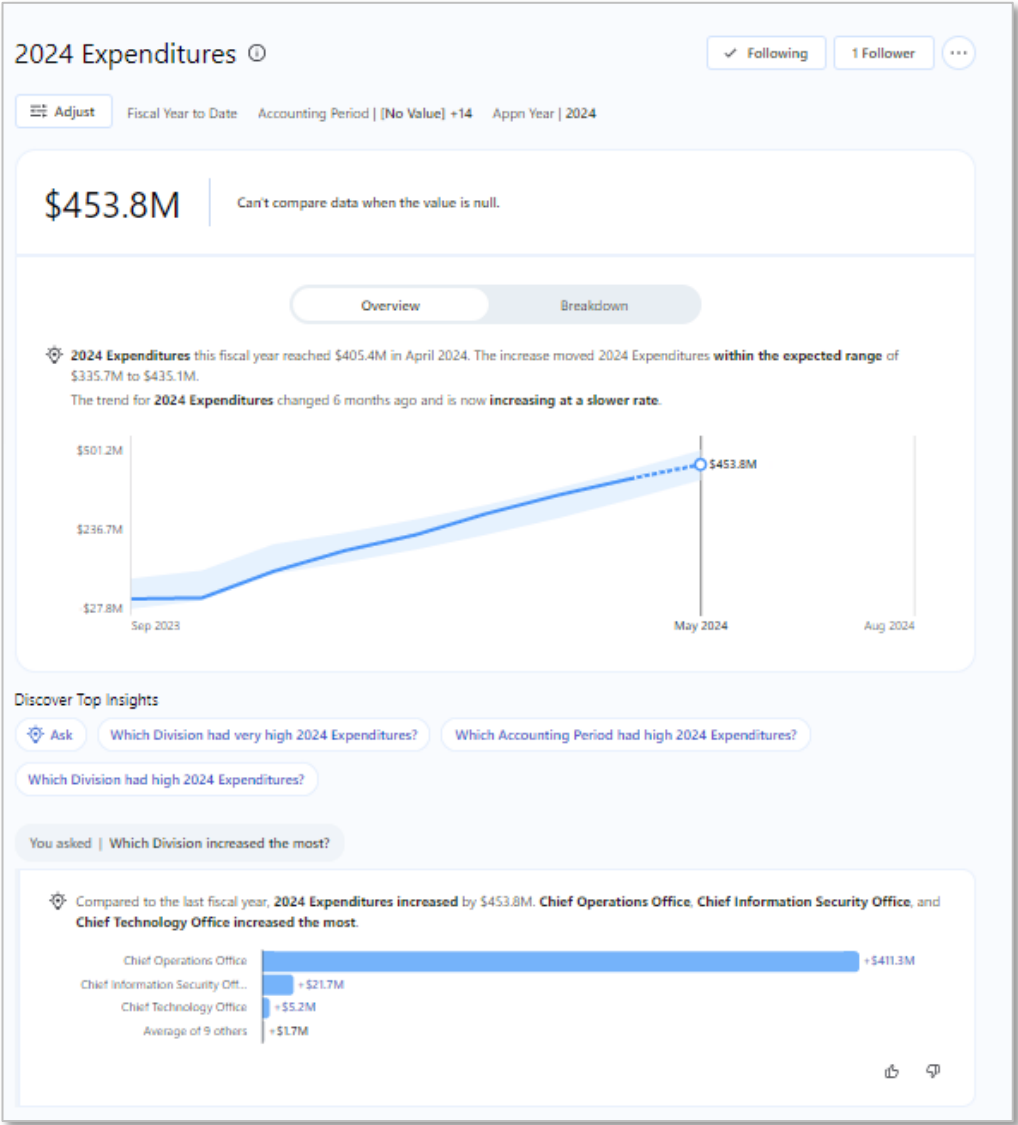
| Month | # of Requisitioners |
|-------|---------------------|
| Sep | 11 |
| May | 11 |

Compared to the last fiscal year, **# of Requisitioners increased by 4. Chief Technology Office, Chief Information Security Office, and...**

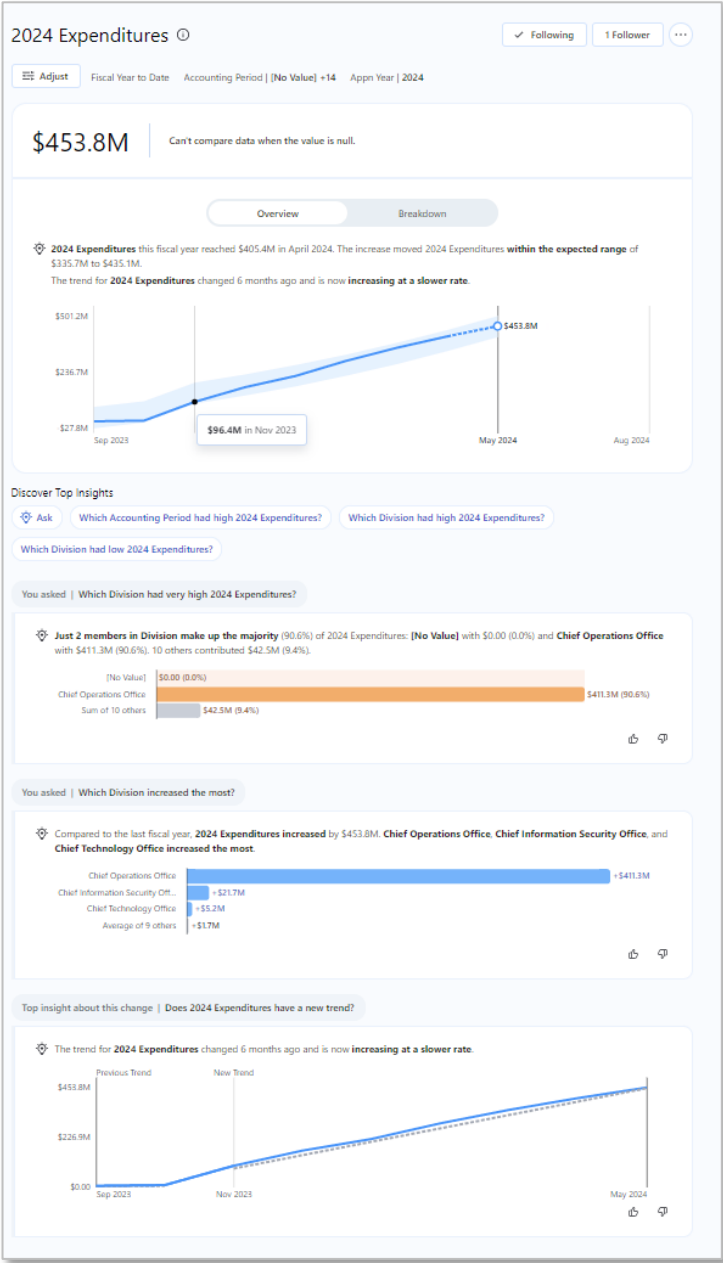
Utilizing Tableau Pulse Metrics



Which Allows for Easy Metric Use



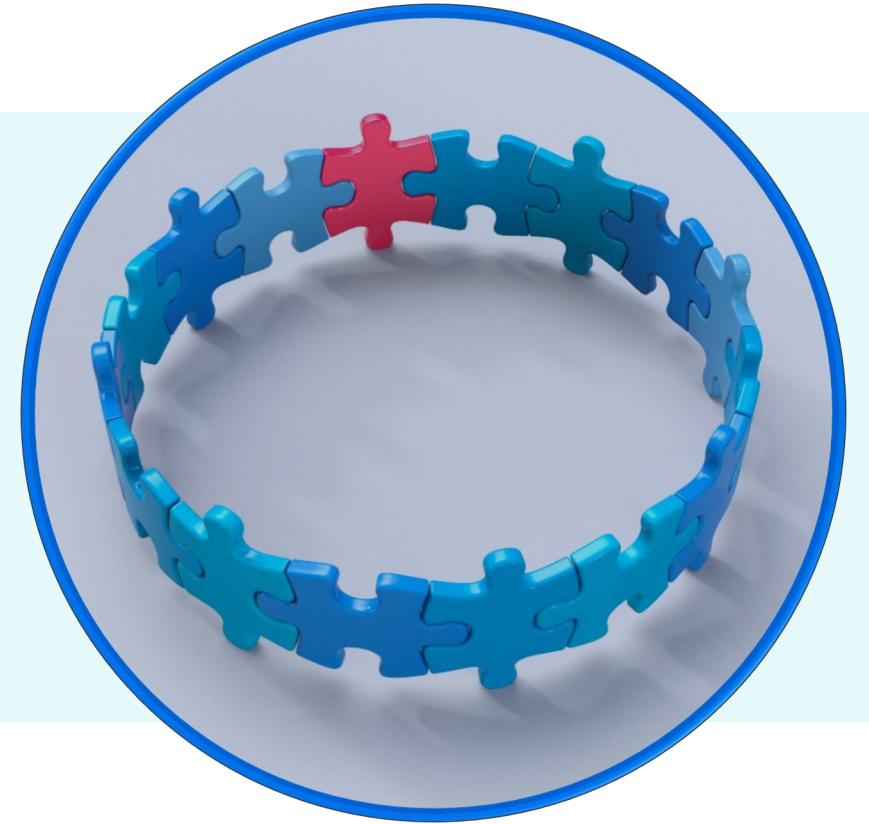
At the Tip of Your Fingers





Let's See It In Action

Coming Full Circle





Questions?

Thank You



James Joseph (JJ)

Director of Budget and Finance

Texas Department of Information Resources (DIR)

james.joseph@dir.texas.gov



Transforming How
Texas Government
Serves Texans

Texas Department of Information Resources

dir.texas.gov | [@TexasDIR](https://twitter.com/TexasDIR) | [#DIRisIT](https://twitter.com/DIRisIT)