

# Report at a glance

## Semiannual Audit Analytics Update – July 2023 through December 2023

FEBRUARY 2024

**ABOUT** | “Audit analytics” means using automation and new technologies to assess entire datasets and thousands of pieces of information in less time and in more reliable ways than through traditional techniques like random sampling.

We apply these advanced statistics and data science tools to help identify inefficiencies, fraud, data-quality problems, and the causes and effects of issues. Since 2017, we have analyzed the city’s financial and process data on a continuous basis and report our findings every six months. Continuous auditing allows us to analyze potential risks by looking at large sets of financial and process data throughout the year.

Audit analytics is increasingly important and expected in both internal and external audit functions at private and public audit firms. As organizations move toward fully digitized financial and business processes, auditors must follow.



## In the report

### **RISKS: Purchase cards, travel cards, and expense reports**

- We analyzed 383,563 purchase card transactions of which 132, or 0.03%, had three or more risk flags. We consider risk flags to be purchases tied to, for example: pass-through vendors, even-dollar amounts, recurring transactions, and split transactions. A split transaction is where someone makes a purchase that exceeds a purchase card limit, so the cost is split over two or more transactions to get around the limit.
- For travel card transactions, we found 98% are low risk, and the number of transactions we consider medium or high risk has stayed consistently low over the past four years. Meanwhile, for expense reports, only 523 transactions, or 0.7% of all transactions, triggered all three of our risk flags in this area.

### **RISK: Purchase orders**

- The two main risks we look for with purchase orders are unauthorized purchases and shipping addresses.

#### **UNAUTHORIZED PURCHASES**

- A purchase is considered unauthorized when it violates the city’s procurement process. This could include submitting a purchase order after the purchase has already been made, violating the city’s fiscal rule concerning transactions under \$10,000, or committing a code violation for transactions over \$10,000.

### **WHY THIS MATTERS**

Using comprehensive data analysis we can spot higher risk areas, which in turn point us to what we should prioritize in an audit. By examining an entire dataset, instead of just a sample, we can clearly show areas of concern and high risk — and we can do it with a more efficient use of resources.

Innovative audit analytics tools allow us to identify potential issues sooner. While a traditional audit could take months longer, audit analytics and continuous auditing can help speed up the work and support efforts to focus only on the highest risks.

The results of innovative audit analytics work provide stronger conclusions based on rigorous and comprehensive assessments of city agencies’ digitized information in line with the auditing standards the Denver Charter requires us to follow. Agencies can then use our audit recommendations to make improvements. Findings and recommendations based on strong evidence and analysis are more likely to be implemented and create positive, lasting change for the city.

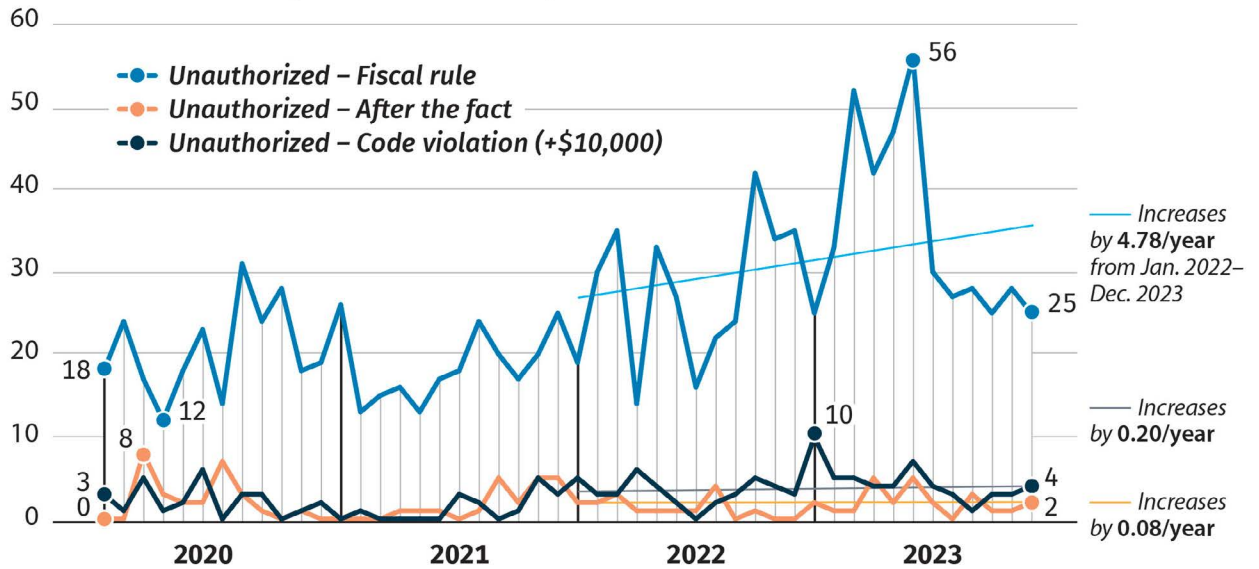
**TURN  
OVER  
FOR  
MORE** →

**Timothy M. O’Brien, CPA** | Denver Auditor

For a copy of this report, visit [denverauditor.org](https://denverauditor.org) or call the Auditor’s Office at **(720) 913-5000**.



## Unauthorized purchases, by month



**Source:** Graphic created by the audit analytics team using data from Workday.

**Note:** These results are used only for risk assessment purposes and may require additional audit work to validate.

- Overall, unauthorized purchases have steadily increased since 2020, driven by city fiscal rule violations, while after-the-fact purchase order submissions and code violations have remained flat.

### SHIPPING ADDRESSES

- When a purchase order is submitted, an address is listed for where that order should be shipped to.
- We reviewed all the addresses associated with the entire population of purchase orders and identified a group of shipping addresses that do not correspond with verified city addresses

or vendors.

- Overall, we found the risk has decreased from previous reporting periods and found one risky address listed matched the address of a city employee.

### RISK: Audit Support

- As well as continuous auditing, the audit analytics team provides invaluable assistance to audit teams working on various projects, from data analysis and sampling to technical support. In 2023, the team worked on nine separate audits.

## 2023 audit assistance

	Data analysis	Sampling	Technical support
AFFORDABLE HOUSING	×	×	
RESIDENTIAL PERMITTING	×	×	×
CITY COUNCIL OPERATIONS	×	×	
SELF-FUNDED HEALTH PLAN	×	×	×
CONSTRUCTION CONTRACTOR PREQUALIFICATION PROCESS		×	
EMPLOYEE SEPARATION	×		
PARAMEDIC RESPONSE TIME	×		
MUSEUM OF NATURE AND SCIENCE	×	×	
FLEET MANAGEMENT	×		

Timothy M. O'Brien, CPA | Denver Auditor

For a copy of this report, visit [denverauditor.org](https://denverauditor.org) or call the Auditor's Office at (720) 913-5000.

