



AUDIT COMMITTEE



AUDIT ANALYTICS TEAM

SEMIANNUAL AUDIT ANALYTICS UPDATE

AUGUST 2024

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AGENDA



- Continuous audit and risk analytics update.
- Audit support.
- Outreach to the audit community and internal training.



BACKGROUND

Continuous auditing is a method to identify and analyze risks through automated, scheduled analysis of the city's financial and process data.

Using this approach, we:

- Connect to and analyze information.
- Share results with Auditor's Office leaders.

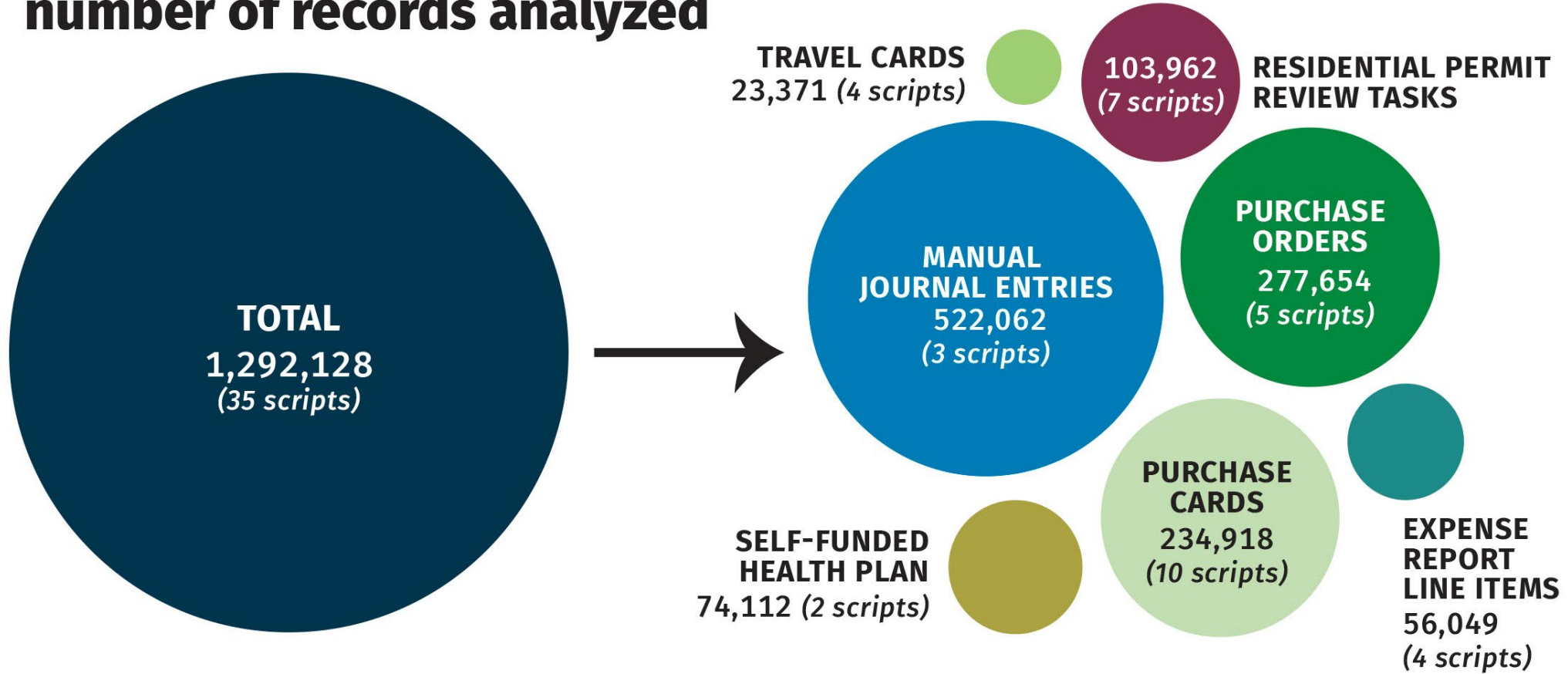
NEW AREAS FOR CONTINUOUS MONITORING



- Residential Permitting.
 - Audit report published in January 2024.
- Self-funded Health Plan.
 - Audit report published in February 2024.



2024 continuous audit and risk analytics number of records analyzed



Source: Auditor's Office illustration using information from the city's financial system of record, Workday, and the city's permitting system, Accela.

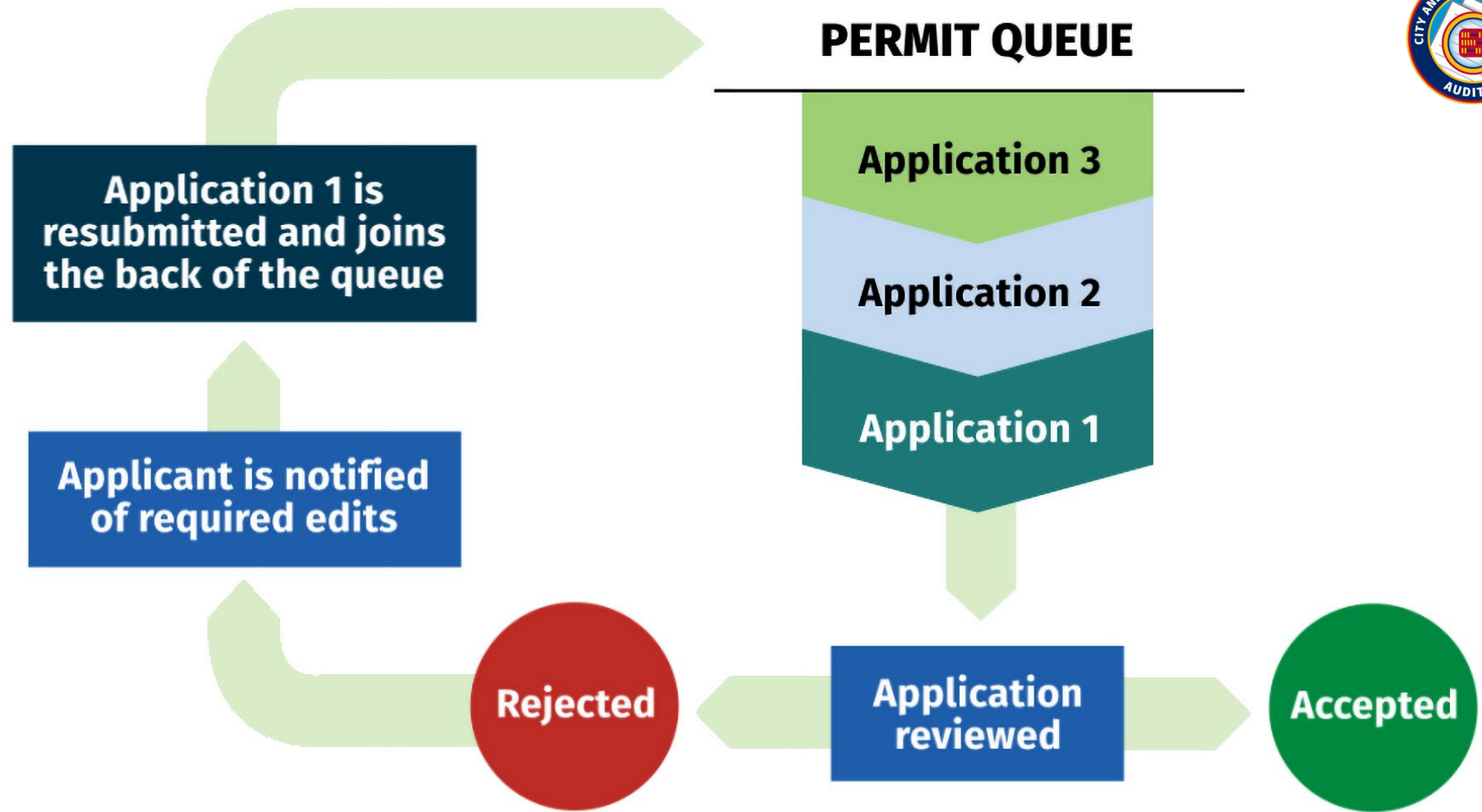
CONTINUOUS AUDIT: RESIDENTIAL PERMIT REVIEW



Residential permit review trends

- We monitor the average number of days it takes city staff to complete their reviews.
- We also monitor the percent of review tasks completed within Community Planning and Development's internal goals.

Permit process



...if application contains a mistake or is incomplete

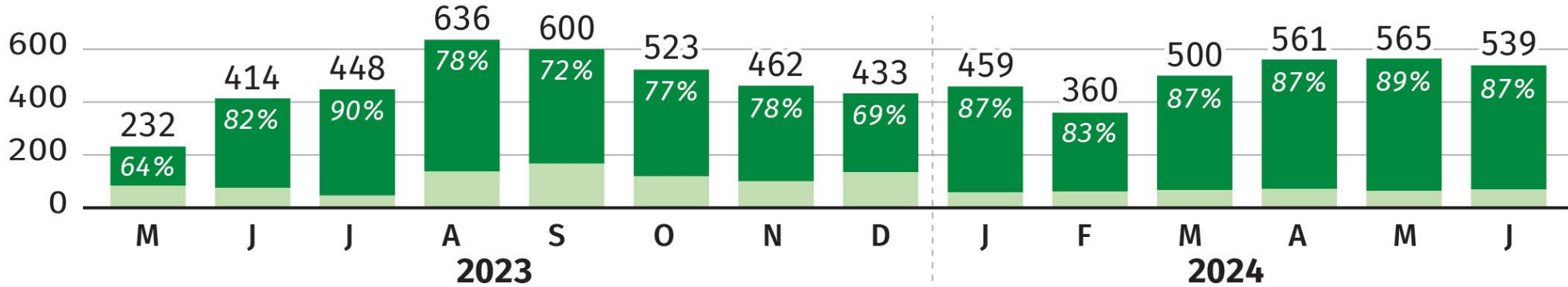
Note: Plan reviews are pulled from the queue where the oldest plan review is typically processed first.

Source: Denver Auditor's Office.

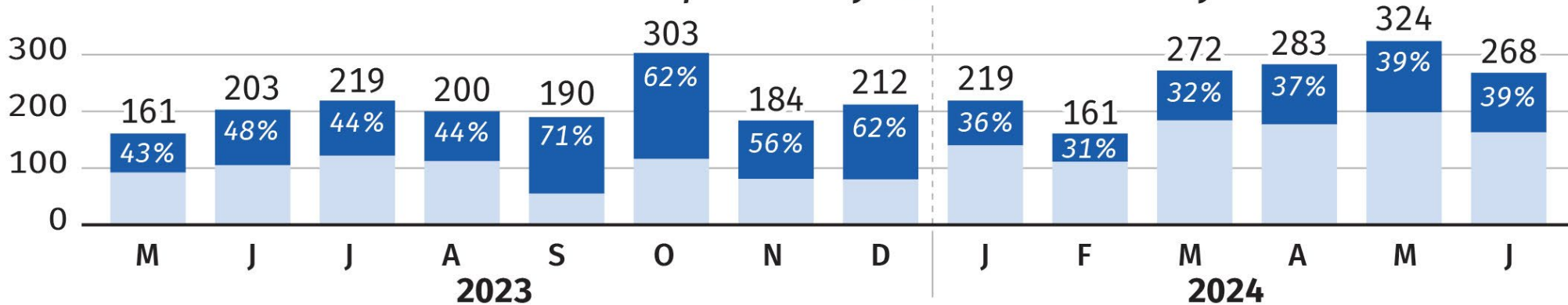


Walkthrough review tasks, by month

RESIDENTIAL GROUP ■ Less than or equal to 2 days ■ Greater than 2 days



ALL OTHER DISCIPLINES ■ Less than or equal to 2 days ■ Greater than 2 days



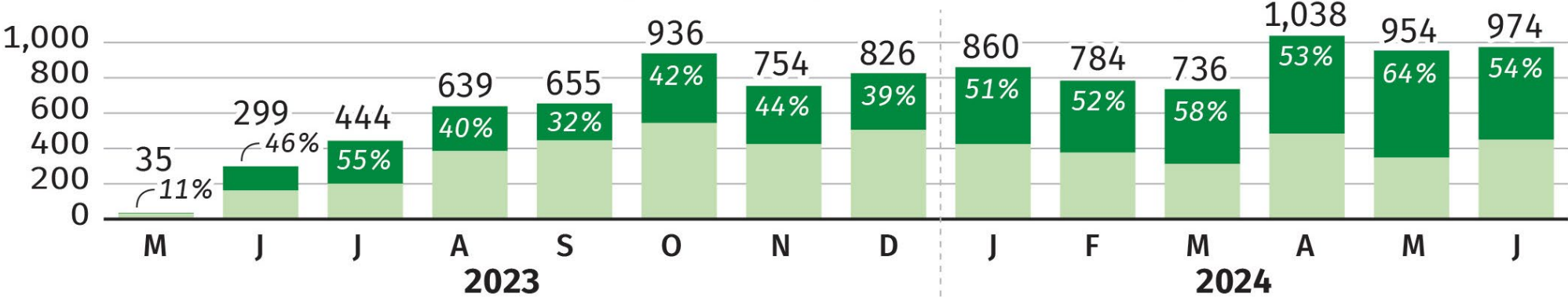
Source: Graphic created by the audit analytics team using data from Accela.

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

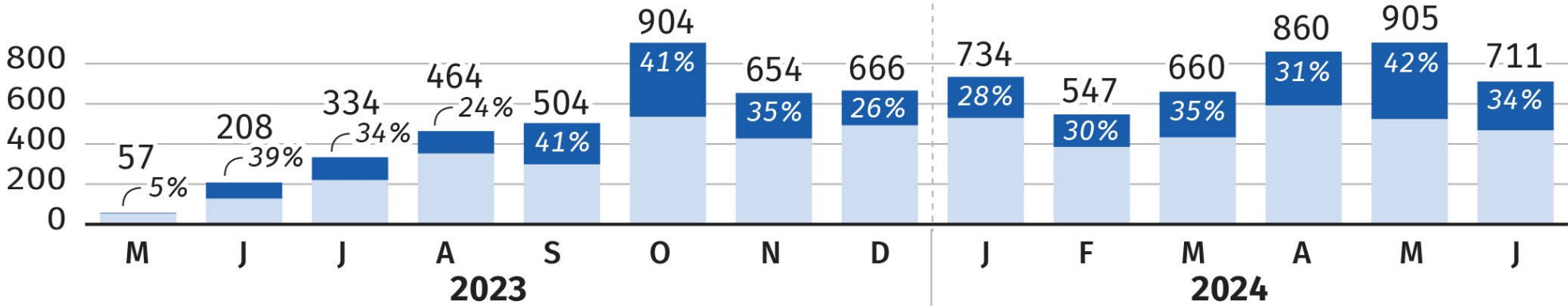


Non-walkthrough review tasks, by month

RESIDENTIAL GROUP ■ Less than or equal to 10 days ■ Greater than 10 days



ALL OTHER DISCIPLINES ■ Less than or equal to 10 days ■ Greater than 10 days

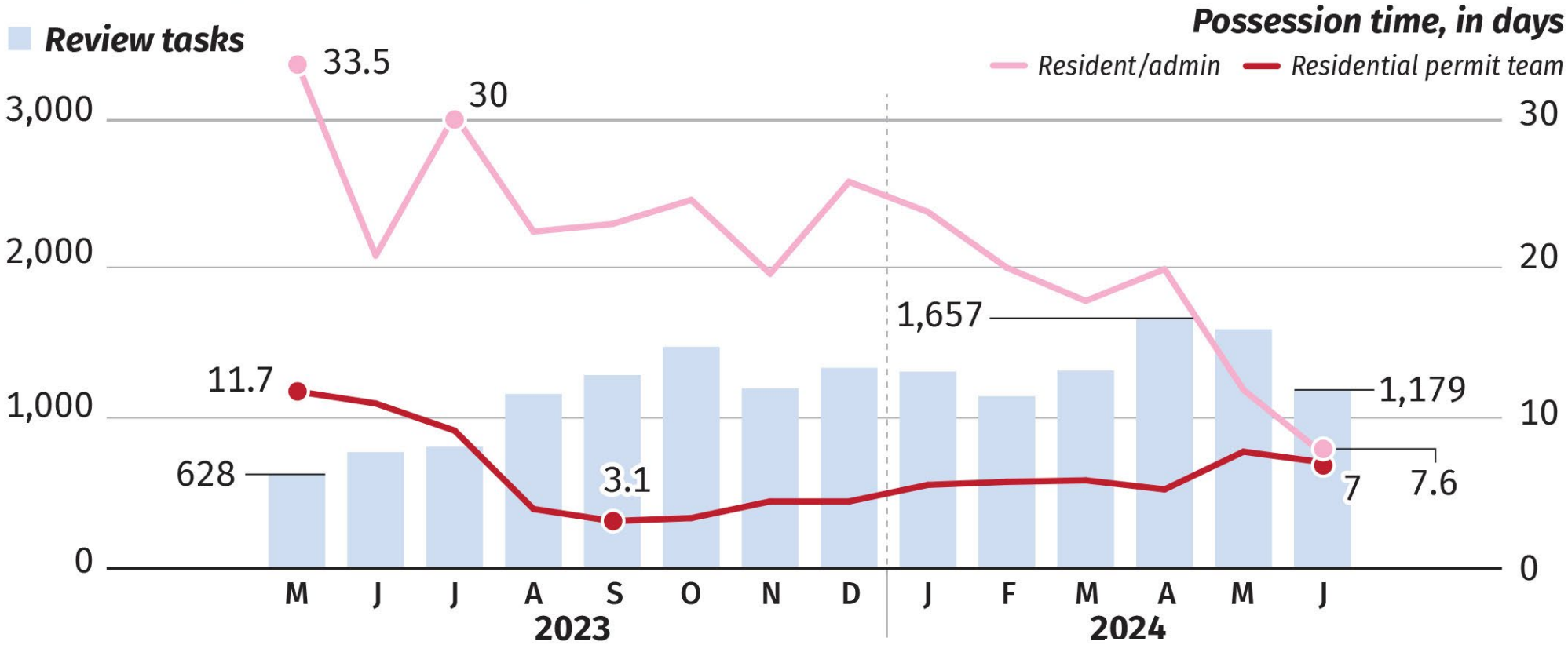


Source: Graphic created by the audit analytics team using data from Accela.

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Average possession time for walkthrough permit applications, by month

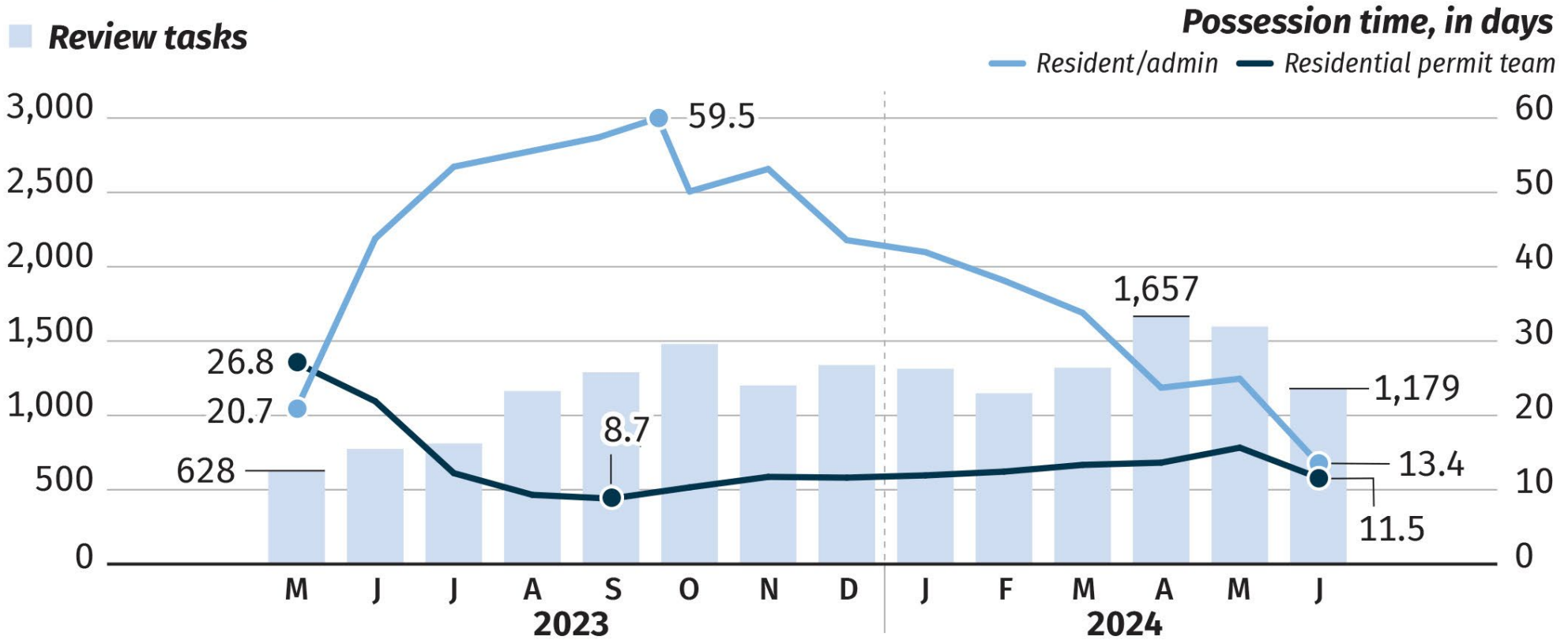


Source: Graphic created by the audit analytics team using data from Accela.

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Average possession time for non-walkthrough permit applications, by month



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

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CONTINUOUS AUDIT: SELF-FUNDED HEALTH PLAN



Health plan risk analytics

- We analyzed whether city employees are covered as both an employee and a dependent at the same time.
- We flagged dependents over the age of 26 and verified their eligibility.

CONTINUOUS AUDIT: TECHNOLOGY PURCHASES

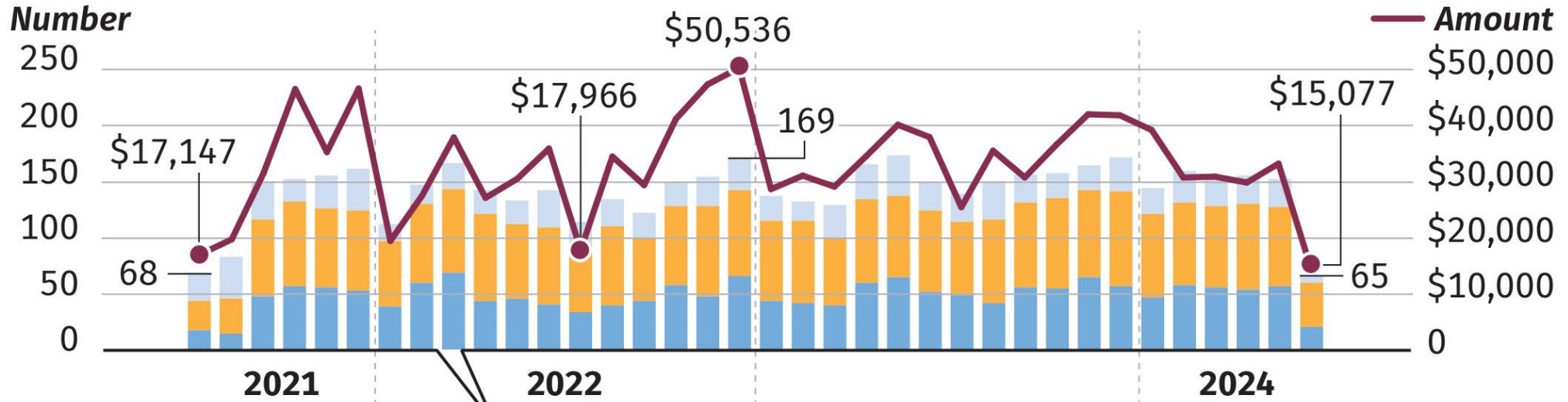


- We identified high-risk purchase card transactions using a combination of five risk flags.
- We analyzed all purchase card transactions from July 2021 through June 2024.

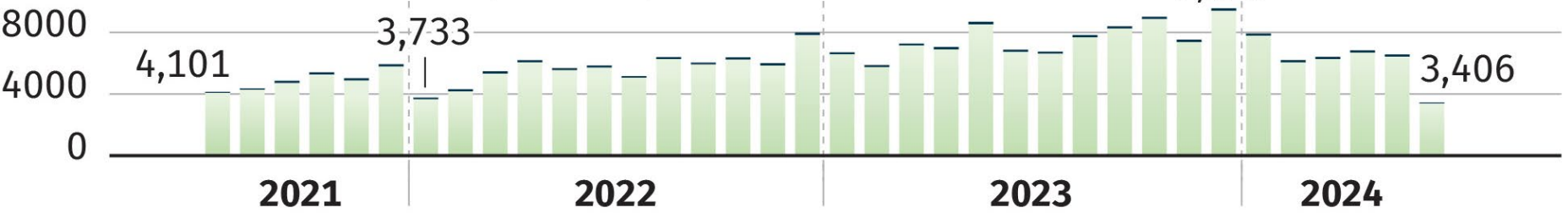


Risky transactions for citywide technology purchases, by month

RISKY TRANSACTIONS ■ Independent ■ Subscription ■ Other



TRANSACTIONS ■ Non-risky ■ Risky (Average 2.3%)



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

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CONTINUOUS AUDIT: PURCHASE CARDS

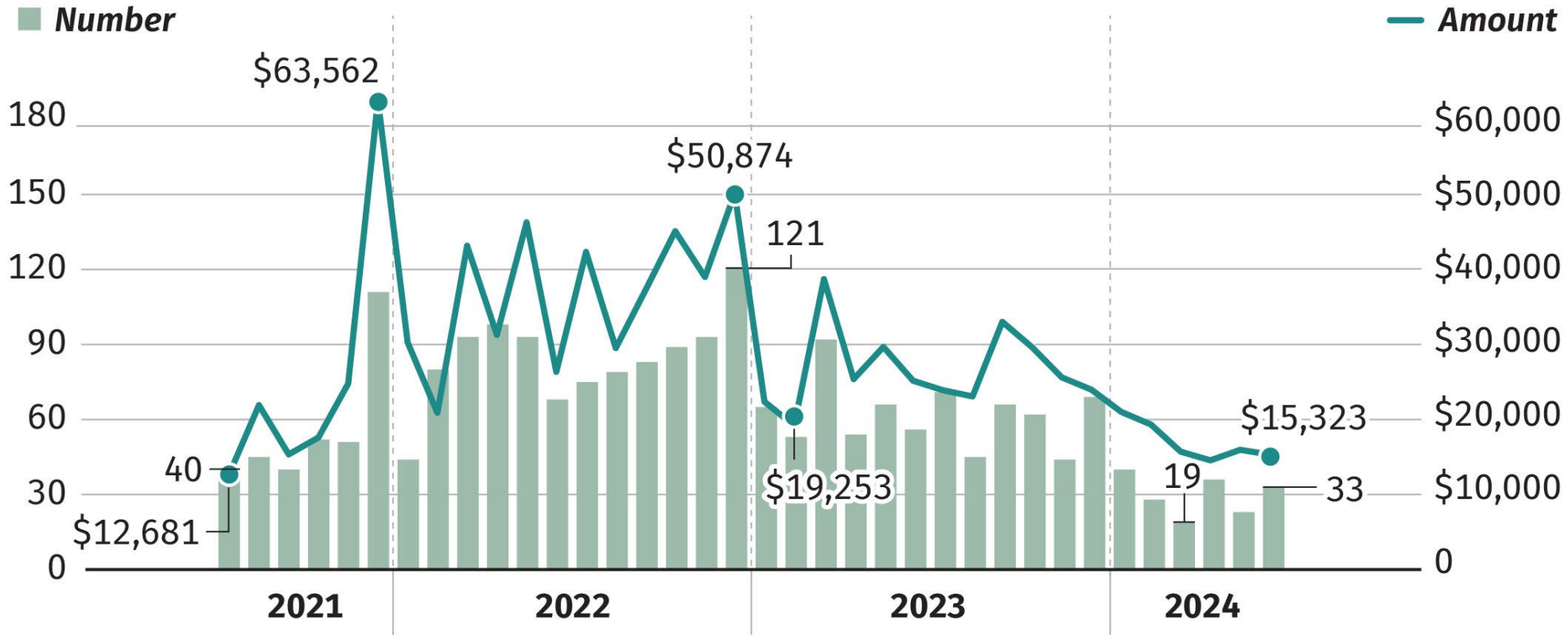


Purchase card composite model

- We flag purchases tied to pass-through vendors, even-dollar amounts, split transactions, and purchases without supporting documentation.
- Of the 234,918 transactions, 31 (or 0.01%) had three or more risk flags.



Purchase card transactions with two or more risk flags, by month



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

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

CONTINUOUS AUDIT: PURCHASE CARDS (continued)



New analytic

- Looks at whether the city received sales tax refunds for Etsy transactions.
- Out of 36 transactions, we flagged 21 for further review.

CONTINUOUS AUDIT: TRAVEL CARDS



- 98% of travel card transactions are categorized as low risk.
- The number of transactions categorized as medium or high risk has stayed consistently low over the past three years.

CONTINUOUS AUDIT: TRAVEL CARDS

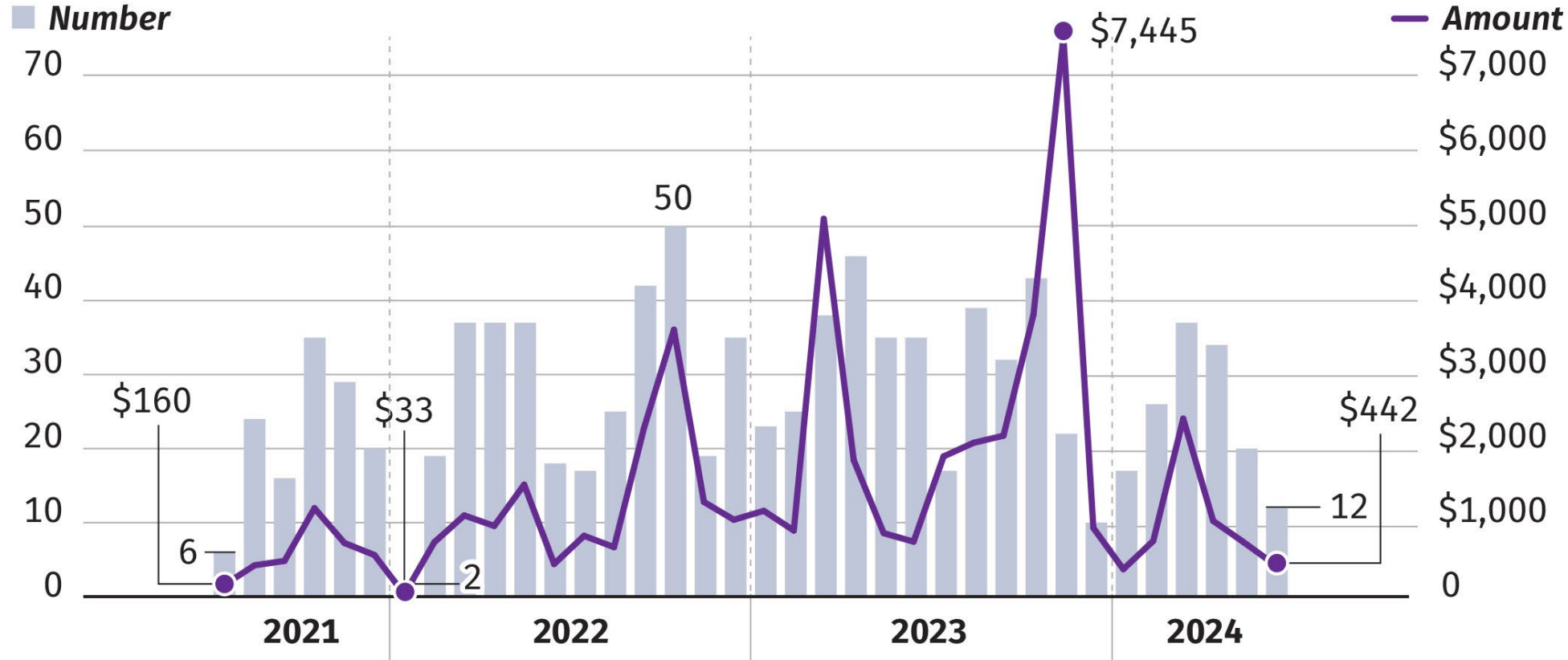


New analytic

- Flags travel card purchases potentially related to flight upgrades and in-flight purchases.
- Of the 23,371 travel card transactions, we flagged 979 (or 4%).



Travel card in-flight purchases and potential flight upgrades, by month



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

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CONTINUOUS AUDIT: PURCHASE ORDERS



Risk analytics

- Unauthorized purchases.
- Shipping addresses.

CONTINUOUS AUDIT: PURCHASE ORDERS

continued



- All 1,226 violations (100%) had supporting documentation.
- 125 violations (10%) lacked the required justification form.
- We are designing a new analytic to find patterns in who is submitting multiple violations.

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2024 audit assistance

| | Data analysis | Sampling |
|---|---------------|----------|
| DENVER MUSEUM OF NATURE AND SCIENCE | × | × |
| COLORADO YOUTH DETENTION CONTINUUM PROGRAM GRANT COMPLIANCE | × | × |
| CITY SHELTERS (IN-PROGRESS) | × | × |
| FLEET MANAGEMENT (IN-PROGRESS) | × | |
| EMERGENCY MEDICAL RESPONSE TIME (IN-PROGRESS) | × | |
| EMPLOYEE SEPARATION (IN-PROGRESS) | × | × |
| CITYWIDE TECHNOLOGY PURCHASES FOLLOW-UP (IN-PROGRESS) | × | × |



TRAININGS

Internal:

- Data reliability – March 2024.
- Statistical analysis – June 2024.



External:

- Developing analytics to assess permit review data.
- Assessing data reliability using Microsoft Excel and Python, a computer programming language.



NEXT STEPS

- Workday timekeeping continuous audit project.
- Expense report business processes.
- Provide training to staff on Python.



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