Audit Committee

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Audit Analytics Team

2019 Year-End Data Analytics Update
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Background

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

- Connect to and analyze information
- Report results through an internal dashboard and memos
Results Used in Two Ways

- **Automate previous audit work**
  Inform follow-up audits

- **Identify areas of risks for future audit work**
  Initiate audits, as needed
Agenda

• Automated Analyses and Reporting
• Risk-Finding Activities
• Audit Support
• Community Engagement
In 2019, we monitored and improved previously implemented continuous audit scripts in four areas:

- Contract information
- Tax return processing and tax write-offs
- Short-term rental license data
- Purchase card purchases
Alfresco metadata contains limited information about city contracts including amounts, vendor names, and agency names. We analyzed data from January 2014. We analyzed approximately 13,000 contracts.
**Risk:** Inconsistent data makes analysis and retrieval of contracts difficult, which hinders the city’s ability to monitor contract compliance.

**Result:** Our analysis shows, while there is some variation from month to month, contract amounts are still entered inconsistently.
Alfresco – Contract Splits

**Risk:** Agencies may be splitting contracts to avoid City Council oversight.

**Result:** In our most recent analysis, July 2018 through April 2019, we saw potential split contracts occurring at similar levels to the original audit report period, January 2014 through May 2017.
GENTAX stores information about taxes collected by Treasury.

We analyzed approximately 540,000 sales tax returns and 8,000 write-off requests.
GENTAX – Return Processing Time

**Risk:** Excessive processing times could result in unnecessary collection actions taken against a taxpayer.

**Result:** While processing time continues to be cyclical, overall, times appear better than the originally audited period.
Sales tax returns processed within 7 days

Percent of sales tax returns processed within 7 days

Audit period  Audit issued

2016  2017  2018  2019

Source: Auditor’s analysis of GENTAX data

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**Risk:** The city requires segregation between write-off requests and review.

**Result:** We did not observe any instances of self-approved requests.
We assessed all short-term rental licenses that were identified as active in the Accela database as of Dec. 6, 2019.

We analyzed approximately 3,000 licenses.
**Risk:** Incorrect data can make it difficult for an agency to enforce requirements under the ordinance.

Initial compliance with the lodger’s tax ID was determined at 29%, per the “Short-Term Rental Enforcement” audit issued December 2017.

**Results:** Compliance rate has reached 99% as of Dec. 6, 2019.
Short-Term Rental Licenses

Percent of filings

- Valid ID
- Missing only dash
- Non-compliant

Audit Period
Past 365 Days

Source: Analysis of Accela data performed by the Audit Data Analytics Team

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We assessed purchase order data from Jan. 1, 2017, through Oct. 23, 2019. We analyzed 119,000 purchase order line-items.
Risk: Checks held for pickup have a higher risk of misappropriation and loss.

Result: In three years, 10% of the 76,276 invoices paid by check were held for pickup.
Unauthorized Purchases

Risk: Unauthorized purchases mark a break in the procurement process and indicate purchases where the city may not have received the best pricing.

Result: 590 purchase orders (1%), with associated value of $3.9 million (0.12%), have an unauthorized purchase flag.
We assessed purchase card transactions with approval dates between January 2018 through November 2019.

In the updated analysis, we analyzed 118,000 transactions.
Purchase Cards – Recurring Purchases

**Risk:** Recurring purchases are not allowed under purchase card rules unless the purchase is associated with a master purchase order.

**Result:** Overall, the analysis shows less spending and fewer transactions associated with recurring purchases in analysis year 2019 when compared to analysis year 2018.
Purchase Cards – Split Transactions

**Risk:** Split transactions are a risk because they could indicate a cardholder is circumventing the single-transaction limit.

**Result:** Our analysis shows the amount of spending related to splits continues to fall from its peak in December 2017.
Splits over time

Credit Card Charge Date

Spending Associated with splits ($)

All Splits
High-risk split

Source: Auditor’s analysis of Workday data
In 2019, we created analyses to identify risks in four areas:

• Purchase cards
• Purchase orders
• Travel cards
• Salary and merit increases
Purchase Cards – Pass-Through Vendors

**Risk:** Pass-through vendors are online vendors where any individual can make a storefront. A cardholder can make purchases from themselves or a close related party.

**Method:** Identify and quantify transactions with pass-through vendors.
Top Purchase Card Spender

**Risk:** The individual cardholder with the most cumulative dollar transactions has the highest opportunity for misuse.

**Method:** We compared year-over-year trends in purchase card spending for each agency.
Purchase Orders


We analyzed 119,000 purchase order line-items.
**Risk:** Duplicate transactions can be an indicator of fraud risks associated with billing schemes.

**Methods:** To identify potential duplicate transactions, we examined the travel card, purchase card, and purchase order data in Workday.
Non-City Addresses

Risk: Purchased items shipped to an address that is not associated with the city could indicate fraud.

Methods: We matched the shipping address information in Workday to known city addresses.
**Risk:** These analyses identify human influence in natural number sets, which could indicate fraud.

**Methods:** We built models based on rates of occurrence and manually sampled purchase orders for additional review.
We identified 21,241 transactions from Jan. 1, 2017, through Nov. 30, 2019, and developed scripts to examine two risks:

- Duplicate purchases between travel and purchase cards
- Non-travel-related purchases
Pay Equity Analysis

We assessed three years of salary and two years of merit increase data.

This included approximately 57,800 salary observations and 12,500 merit increases.
Objectives

▪ Replicate the 2017 Segal-Waters equity analysis
▪ Assess whether salary data shows risks of failing to give like pay for like work with respect to gender or ethnicity.
▪ Assess whether merit increase data show indicators of bias related to gender or ethnicity.
Audit Support

The Audit Analytics Team provides training, methodological, and data-related support throughout the year.
• Mountain Plains Intergovernmental Audit Forum (August 2019)

• Institute of Internal Auditors (September 2019)

• Colorado Society of CPAs – Governmental Conference (October 2019)
Next Steps

- Continue to improve automation of current analyses
- Connect to other data sets and build risk assessments
- Expand our analyses in current data sets
- Cross train auditors to expand data skills in the office
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