AUDIT REPORT
Citywide
Contract Controls in Alfresco
December 2017

Office of the Auditor
Audit Services Division
City and County of Denver

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Denver Auditor
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Audit report year: 2017
AUDITOR’S REPORT

We have completed an audit of contract controls in Alfresco. The audit included three unique objectives. First, we evaluated the reliability of data stored in Alfresco for completeness, consistency, and accuracy. Second, we assessed whether the City has controls in place to prevent expenditure contracts from being split into multiple agreements with the same vendor to avoid City Council oversight. Lastly, we evaluated the City’s controls in place to monitor contract expenses specific to expenditure contracts that are submitted under the thresholds outlined in the City Charter, Section 3.2.6.

As described in the attached report, we identified areas in need of improvement. First, we found that the data entered into Alfresco is not accurate, consistent, or complete. Second, we found that some contracts in Alfresco may present the appearance of being split to avoid City Council approval. Finally, we found that while some contracts are written for amounts close to the $500,000 threshold for City Council approval, additional audit work is needed to analyze risks associated with this practice. Therefore, we anticipate addressing this risk area along with the City’s overall contracting practices at a future date.

Our report lists several recommendations enabling the City to better record accurate contract information within Alfresco and ultimately provide the City with enhanced transparency surrounding approved contracts.

This performance audit is authorized pursuant to the City and County of Denver Charter, Article V, Part 2, Section 1, General Powers and Duties of Auditor, and was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We extend our appreciation to the City’s Chief Performance Officer and the City personnel who assisted and cooperated with us during the audit.

Denver Auditor’s Office

Timothy M. O’Brien, CPA
Auditor
Alfresco Contract Management
December 2017

Objective
The audit had three objectives: 1. To determine if the City records contract data in Alfresco in a complete, consistent, and accurate manner; 2. To determine if the City has controls in place to prevent expenditure contracts from being split to avoid City Council oversight; and 3. To determine if the City has controls in place to monitor contract expenses specific to expenditure contracts that are submitted under the thresholds outlined in City Charter, Section 3.2.6.

Background
The City and County of Denver considers contracts one of the highest administrative priorities within the City. Each City department or agency is expected to ensure contract compliance, and work to expedite the contracting process throughout the lifecycle of a contract. To meet the administrative needs of each City department or agency, the City utilizes a records system software called Alfresco to both store and move agreements with vendors through the contracting process.

Highlights
Our review of the Alfresco contract management system, and subsequent testing of a sample of contracts within Alfresco, indicated issues regarding data reliability, contract splitting, and issues regarding contracting practices within the City and County of Denver that will require further examination.

Finding 1: Unreliable Contract Data in Alfresco Hinders the Accessibility of Contracts
We found that data recorded in Alfresco is not reliable because it is inconsistently recorded in the system by means of manual data entry without uniform guidance or mandatory training. We offer two recommendations for this finding that will improve data reliability within Alfresco.

Finding 2: Some Contracts Give the Appearance of Being Split to Avoid City Council Approval
Some contracts may be split into multiple agreements with the same vendor to avoid additional City Council approval necessitated by a dollar threshold. When evaluating contracts within Alfresco, we found that current City rules do not clearly define “split contracts,” nor is there a City and County agency responsible for reviewing or addressing known or potentially split contracts. We offer one recommendation for this finding that will enhance transparency around the definition of contract splitting and reduce the appearances of risk.

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BACKGROUND

Overview of the Alfresco Contract Management System

The City and County of Denver (City) considers contracts one of the highest administrative priorities within the City.\(^1\) City agencies and departments utilize a contract recording software, Alfresco, to both store and move agreements through the contracting process.

Alfresco is a third-party, off-the-shelf content management software package the City uses as its document repository.\(^2\) The City utilizes a web-based “workflow” within Alfresco to fully automate the process of requesting, drafting, reviewing, and approving City contracts.\(^3\) A workflow is a sequence of connected steps or tasks through which a product, such as a contract, moves through a process to a destination. The Alfresco workflow moves a contract, initiated by an agency, through City review, all the way to official record. The City implemented Alfresco in 2012 to improve business processes, and achieve various objectives such as:

- Improving the efficiency of the City’s contracting process;
- Allowing staff members in other City agencies to search for and retrieve information about in-process and completed contracts;
- Reducing the number of duplicate paper copies;
- Preparing for the support of public access to City contracts through the internet;
- Increasing transparency surrounding the current state of contract requests;
- Creating consistent processes that clearly define each step of the workflow process for each type of contract;
- Replacing agency signatures with electronic approvals; and
- Allowing for agency and citywide review of the contracting process and identifying bottlenecks in workflows.

Types of Contracts Processed in Alfresco’s Workflow

The City utilizes many types of contracts including, but not limited to, construction contracts, on-call contracts, expenditure contracts, revenue contracts, professional services contracts, personal services contracts, amendments, concession agreements, and cooperative agreements. Some of these contracts may span multiple years and encompass millions of dollars. Alfresco aids in the creation of a contract by providing specific workflows for varying types of contract requests. For example, a request for an expenditure contract begins when a requisition is input into Alfresco.\(^4\) Alfresco then uses specific predetermined routes to move the contract through to completion. A requisition for a new expenditure contract then flows through a workflow selection, and includes

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\(^1\) A contract is a binding agreement between two or more persons or parties, which can be legally enforced. The City’s Executive Order No. 8 specifies the importance of contracting within the City’s administrative functions.


\(^3\) The web-based portal, or sign-in page, that City employees use to access Alfresco can also be referred to as DenverDOCS.

\(^4\) Contract requests involving expenditures begin as requisitions from the City’s financial system of record. A requisition can be defined as a request approved by an expending authority of the requisitioning agency or department for the purchase of a good or service.
the following steps: the identification of contract type; the assignment of the contract to a City attorney; the attainment of specifically required electronic signatures; and, finally, a completed or cancelled contract.5 See Figure 1 below, which outlines this process:

**Figure 1. Expenditure Contract Workflow**

- Requisition for New Expenditure Contract in Financial System
- Requisition Moved to Alfresco
- Standard Expenditure Contract Created
- Assigned Attorney Selects Electronic or Paper Signatures
- Completed Contract

**Source:** Alfresco User Guide. Simplified by the Auditors Office.

**Many City Departments and Agencies Utilize Alfresco’s Workflow**

Various members of the City have roles and responsibilities associated with moving a contract request forward within Alfresco’s workflow. Each City user is assigned a portfolio of permissions based on their role in the contracting process, which is determined by the City’s Technology Services Department and the needs of each individual user. Alfresco then assigns tasks to specific users as steps in the workflow process. The assignment to each user depends on the nature of each task and the users’ allotted permissions. For example, a member of the Charter Signatory may be required to review and sign a contract before it can be approved.6 The Charter Signatory would be notified, within Alfresco, of all outstanding contracts in need of signature. Further examples of user types include Contract Administrator, Spectator, Attorney, Agency Approver, and Charter Signatory. See Appendix B for a list of user roles and corresponding descriptions.

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5 A contract may not pass review and be deemed non-compliant if amounts appear incorrect, audit clauses are missing, there are missing signatures, etc. In addition, a request to cancel a contract can be filed by the originator of the request. Only an assigned City Attorney, or Agency Contract Administrator is permitted to cancel the contract request. Contract administrators can be defined as City agency employees that are assigned review and approval duties for specific contracts within their respective department or agency.

6 Charter Signatory refers to the five required signatures on each City Contract. The individuals responsible include the City Attorney, Mayor, Clerk and Recorder, Chief Financial Officer, and Auditor.
Certain City Requirements Govern Contracting Practices for Departments and Agencies

Executive Order 8 states that contracts legally obligate the City for the purchase of goods and services, placing upon the City a responsibility to coordinate with multiple officials and agencies before a contract can be finalized. Further, Executive Order 8 documents the overall process for moving contracts through the City’s layers of approval so that a contract can be properly reviewed, approved, and monitored. These procedural steps include but are not limited to:

- Determining a budget;
- Developing a scope of work;
- Determining if insurance requirements are met;
- Allowing the City Attorney’s Office to review the proposal;
- Preparing bid documentation;
- Reviewing bids;
- Reviewing proposals; and
- Negotiating and executing finalized contracts.

Many City services, including street paving, architectural design, and software support, to name a few, rely on the execution of contracts. The City’s process for procurement is essential for the day-to-day operations of almost every agency within the City. In addition, Executive Order 8 states, “that while exercising prudent judgment, all department and agency heads are to expedite the processing of contracts and must ensure contract compliance throughout the life of the contract.”

In addition to Executive Order 8, the City Charter outlines various requirements that departments and agencies must follow. City Charter section 2.2.3 states that, “the Mayor shall see that all contracts and agreements with the City and County are faithfully kept and fully performed.” Further, “all City department heads are required to report to the City’s Mayor, all facts and information known that may violate any contract or agreement with the City.”
OBJECTIVE

The audit had three objectives:

1. To determine if the City records contract data in Alfresco in a complete, consistent, and accurate manner.
2. To determine if the City has controls in place to prevent expenditure contracts from being split to avoid City Council oversight.
3. To determine if the City has controls in place to monitor contract expenses specific to expenditure contracts that are submitted under the thresholds outlined in the City Charter, Section 3.2.6.

SCOPE

The scope of the audit was to assess contracts within Alfresco to identify contracts that are written to avoid City Council oversight. The audit also examined the accuracy and completeness of contract data within Alfresco from January 2014 through May 2017. The audit scope did not include a review of contracts for the Denver International Airport as the threshold for City Council oversight is different than other city agencies.

Although we performed testing related to contracts that were written under the threshold for City Council oversight, we determined that additional work would be needed to understand the City’s overall contracting practices. This additional work would have assisted the audit team in identifying potential causes for contracts written in this manner. However, since this audit did not include an evaluation of the City’s overall contracting practices, the scope was modified to exclude contracts written below City Council oversight.

METHODOLOGY

We utilized various methodologies during the audit to gather and analyze information pertinent to the audit scope and to assist with developing and testing the audit objectives. These methodologies included the following:

- Interviewing Technology Services personnel to gain an understanding of employee roles and operational processes related to Alfresco;
- Interviewing Clerk and Recorder’s Office personnel to gain an understanding of their use of Alfresco as the custodian of City records;
- Interviewing Purchasing Division and Controller’s Office personnel to gain an understanding of the contracting process and how information is linked between the financial system of record and Alfresco;
- Leveraging data analytics procedures used to identify contracts that may have been created to avoid City Council approval. Using data analytics, auditors identified contracts written by the same agency with the same vendor within a 300-day timeframe which, if combined, would have exceeded $500,000. Data analytics is a broad term referring to...
any data analysis method. It can be used to ensure that data is accurate, consistent and complete or to test internal controls on information technology systems.

- Reviewing contract terms for a sample of contracts identified as potential splits in the previous step;
- Comparing contract amounts to expenditures in the financial system of record;
- Reviewing guiding legislation and regulatory documents, such as the Denver Charter, Denver Revised Municipal Code, Executive Orders, and Fiscal Accountability Rules;
- Reviewing relative criteria from the U.S. Government Accountability Office;
- Comparing Denver’s City Council contracting threshold to those of five other cities; and
- Reviewing Alfresco user guide and workflow diagrams.
FINDING 1

Unreliable Contract Data Entered in Alfresco Hinders the Accessibility of Contracts

Recognizing the importance of the summary information stored in Alfresco, which is used to search for contracts, we sought to determine if this information could be considered reliable.\(^7\) We assessed the summary information or metadata using a subset of contract data focused on expenditure contracts, and utilized data analytics to analyze the Alfresco summary information to assess risk.\(^8\) The result of this work was used to identify potential risk areas that the audit team further investigated, which revealed minimal controls in place for how data are input into the Alfresco system. If these data are not reliable, the City cannot accurately monitor or search for contracts.

Alfresco Has Modernized City Contracting but Still Utilizes Manual Controls

Alfresco enables City departments and agencies to review, sign, and view contract documentation without the need to ever leave their respective place of business. Further, Alfresco processes large volumes of all types of contracts within the City. As shown in Figure 2, the City executed 1,346 expenditure contracts totaling approximately $847 million in purchased goods and services in calendar year 2016.\(^9\) The table also demonstrates that contracts amounts have steadily increased over the last five years.

\[\text{Figure 2. Growth of Executed Expenditure Contracts from 2012 - 2016}\]

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Alfresco_Use_Over_Time.png}
\caption{Alfresco Use Over Time}
\end{figure}

\textbf{Source:} Alfresco Data Warehouse, exported October 3, 2017.

\(^7\) Data is considered reliable if it is accurate, consistent and complete.
\(^8\) This is also referred to as Alfresco metadata. City employees enter data for each contract stored in Alfresco. This metadata includes information about the term, scope, and amount of the contract.
\(^9\) Alfresco Data Warehouse contains contract data dating as far back as 2009. However, Alfresco was not officially implemented until 2012. The data points collected in 2009, 2010, and 2011 are not presented in Figure 2.
Alfresco is the City’s central repository for organizing and storing contract documents, which are typically stored as Portable Document Files, commonly known as PDFs. In addition to contract documents, Alfresco contains summary information manually entered by City employees about each contract. The contract summary information includes key information such as contract identification and revision numbers, contract amounts, signature names and dates, vendor information and a brief contract description. Although some of this information is system-generated, such as the signature names and signature dates, most of this information is manually entered by a City employee assigned to a contract’s workflow process.

**Contract Summary Information in Alfresco Is Not Accurate, Complete, or Consistent**

After assessing the reliability of this contract metadata in Alfresco, we found the following three areas for improvement: contract amounts, vendor name and vendor address.

Data are inconsistently entered by employees in three different contract amount fields. Alfresco uses these three separate data fields to store information about the cost of a contract. These fields are:

- **Contract Total Amount**—This field represents the total amount of the contract and any related contract amendments.
- **Dollar Amount Prior Contract Total**—This field represents the amount of the previous contract before the amendment.
- **Dollar Amount this Request**—This field is the amount requested on a contract amendment.

Table 1 below shows the number of inconsistencies identified within and between each of these data fields from a population of 5,257 contracts.

**TABLE 1. Contract Amount Field Data Inconsistencies**

<table>
<thead>
<tr>
<th>Analysis Description</th>
<th>All Contracts</th>
<th>Amendments only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contract Total Amount</td>
<td>Dollar Amount Prior Contract Total*</td>
</tr>
<tr>
<td>Total entries with a dollar sign</td>
<td>894</td>
<td>401</td>
</tr>
<tr>
<td>Total entries with a decimal</td>
<td>2,323</td>
<td>1,045</td>
</tr>
<tr>
<td>Total entries with a comma</td>
<td>2,259</td>
<td>926</td>
</tr>
<tr>
<td>Total entries with text</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Total entries with “zero” value</td>
<td>1,074</td>
<td>1,437</td>
</tr>
<tr>
<td>Total unformatted entries (e.g. no dollar sign, decimal, or comma)</td>
<td>2,099</td>
<td>3,813</td>
</tr>
</tbody>
</table>

Source: Auditor’s Office Analysis of Alfresco Summary Data

Note: *Dollar Amount Prior Contract Total is for Amendments only. Dollar Amount this Request is the additional amount requested for the amendment.

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10 Fields such as the date the contracting process started, dates the contract was signed, and the user who initiated the contract and signed the contract are generated by the Alfresco system, rather than being entered by the user.
In addition, we found weaknesses related to vendor information fields. Specifically, vendor names are often entered inconsistently. For example, some vendor names were entered into Alfresco with differing naming conventions, such as “Doing Business As” (DBA) designation, while other entries did not include this naming convention at all. In addition, vendor names were entered with the “Inc” or “LLC” as part of the name, or in other instances the same vendor was entered without this designation. These data entry errors may overlap as shown below.

- The Vendor Name Inc.
- Vendor Name, Inc.
- Vendor Name
- The Vendor Name Inc. DBA Vendor
- Vendor

We also found that vendor addresses are inconsistently entered with 1,495 out of 5,257 vendor addresses, or about 28 percent, entered as “Same,” “Same as Above,” “Same as Address,” “Same as Initial Agreement,” “Same as Address,” or “Same as Vendor Address.” We also found instances where the vendor name was entered into the address field with the address and other times just the address was listed.

The Alfresco User Guide Version 3.3 specifies certain data elements that are to be in the Contract Description in the summary data. The guide states that the beginning fields in the description include the following data: Vendor Name, Contract Type, Year, Contract Dollar Amount and a Short Description of the Contract Purpose. The user guide further states:

“It is very important that you update the Contract Description from the default value created in the request from PeopleSoft. The City Attorney’s Office has asked that you include the vendor name as part of the initial 120 characters of the Contract Description.”

Our testing revealed that 65 percent of data records did not follow this format. Additionally, these inconsistencies may not have occurred if Alfresco had application controls in place limiting the type of information entered in the data fields.11

**Lack of Mandatory Training May Explain Inconsistent Data Input in Alfresco**

Currently, the contracting process within the City is decentralized. As such, each agency is responsible for manually entering in certain contract information such as contract amount, vendor name and vendor address into Alfresco. As noted above, a user guide does exist that provides employees with guidance on what information should be entered into Alfresco. However, the user guide does not specify format requirements for certain data fields.

Due to the inconsistencies with the Alfresco metadata, it appears the City does not adequately train all employees on how to properly enter information into the Alfresco system. Alfresco training is provided on the City’s online training platform, City University, as well as in person with the Technology Services Alfresco Administrator, but this training is only optional—not mandatory—for

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11 Application controls ensure the accuracy, integrity, reliability and confidentiality of the records and the validity of the entries made.
Contract Administrators. If training is not mandatory, employees will not learn how to properly enter data into Alfresco resulting in inaccuracies in data. The Standards for Internal Control in the Federal Government states that training employees enable them to develop competencies appropriate for their role as well as reinforce standards of conduct.

**The City Lacks Accurate, Consistent, and Complete Contract Data**

If the City does not have accurate, reliable, and complete contract data, it can hinder City employees from being able to run accurate reports or accurately search the contract database. If employees cannot accurately search the database, they may not be able to follow the City’s record retention policy when it comes time for document destruction. The inaccurate data may also diminish transparency by making it difficult for citizens to access the correct data when the Clerk and Recorder’s Office and Technology Services make a link with the Alfresco data to a public search feature on the Clerk and Recorder’s website. Further, City Charter section 2.2.3 states that, “the Mayor shall see that all contracts and agreements with the City and County are faithfully kept and fully performed.” If the data is not reliable the Mayor may not fully comply with this duty.

The Standards for Internal Control in the Federal Government also emphasizes the importance of documenting an organization’s internal control system. Specifically, the standards state that effective documentation assists in management’s design of internal controls and provides a means for retaining organizational knowledge and mitigating the risk of having that knowledge limited to only a few personnel. Such documentation also provides a means for communicating that knowledge as needed to external parties, such as auditors or vendors. Additionally, the documentation of controls is evidence that internal controls are identified, capable of being communicated to those responsible for their performance, and capable of being monitored and evaluated by the entity.

**RECOMMENDATION 1.1**

The Mayor’s Office should administer or designate a subject matter expert to administer mandatory training and disseminate user materials on how contract data are to be entered into Alfresco to ensure accurate, consistent and complete data.

*Agency Response: Agree – Complete*

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12 The City and County of Denver’s City University (CityU) program provides a blended learning opportunity by offering both classroom and online learning to improve employees’ experiences and engagement in professional development.


14 The City’s document retention policy for contracts is six years after expiration, fulfillment of all terms of agreement/contract or resolution of any disputes, whichever is later.

15 The Clerk and Recorder’s office is planning to use data from Alfresco to create a self-service portal. This portal would allow citizens to directly search through City contract information.
RECOMMENDATION 1.2

The Mayor's Office should work with Technology Services to implement application controls over key contract summary data fields including but not limited to amount, vendor and description fields. This will help ensure accurate, consistent, and complete data.

Agency Response: Agree – February 28, 2018
RECOMMENDATIONS

To help ensure data is accurate, consistent and complete in Alfresco, we make the following recommendations:

1.1 **Alfresco Training**—The Mayor’s Office should administer or designate a subject matter expert to administer mandatory training and disseminate user materials on how contract data are to be entered into Alfresco to ensure accurate, consistent and complete data.

**Auditee Response: Agree, Implementation Date - Complete**

Auditee Narrative: A user guide and online training module currently exist in the Contract Management Module of Alfresco, administered by the City Attorney’s Office and Technology services. Both the user guide and training video can be located at Alfresco/Company Home/Alfresco User Guides & Workflow Diagrams/Contracting Automation MODIFIED Expenditure Standard Alfresco User Guide v.2.2.pdf (training video link at p. 3) and at City U — search Alfresco. The user guide for all workflows can be found at Alfresco/Company Home/Alfresco User Guides and Workflow Diagrams/Contracting User Guide v.3.3.pdf. The Contract Training Manual is located on the new intranet site at denvercity.sharepoint.com/sites/financialetwrk/forms/Guide_Contract_ProceduresManual.pdf. The City Attorney’s Office also provides an annual live training session on contracting. To reinforce naming conventions, the City Attorney’s Office will send out a communication to contract administrators reminding them of the expected naming conventions.

1.2 **Application Controls**—The Mayor’s Office should work with Technology Services to implement application controls over key contract summary data fields including but not limited to amount, vendor and description fields. This will help ensure accurate, consistent, and complete data.

**Auditee Response: Agree, Implementation Date - February 28, 2018**

Auditee Narrative: To the extent the existing Alfresco technology allows, the Mayor’s Office will work with Technology Services to implement validation controls for appropriate data fields.
FINDING 2

Some Contracts Give the Appearance of Being Split to Avoid City Council Approval

During the audit, we found several contracts that appear to have been split. These contracts, if consolidated, would have been subject to City Council approval. But, due to how these contracts were structured, the individual contract amounts did not go over the $500,000 threshold that mandates City Council approval. Avoiding the oversight limit diminishes the appearance of transparency and could be used to conceal contracts from City Council.

Split Contracts Risk the Appearance of Avoiding Oversight

In this audit, we focused on two types of contracts where funds could be expended. Agencies will sometimes create a contract as an “on-call” contract. On-call contracts are an agreement to provide services on an as-needed basis during the contract term. These contracts are written with a generic scope of service that could be applied to multiple jobs with the same vendor. When and if the City requests the vendor to perform work, the City defines the exact scope using a work order. In addition to the on-call contracts we also reviewed standard expenditure contracts. These contracts define the scope of services, rates that the vendor may charge, a maximum contract amount, and can be used for the purchase of goods or services. For both standard expenditure and on-call contracts, there can be instances where the City might terminate the contract before the maximum contract amount is expended.

For both standard expenditure and on-call contracts, the City may request a change to the contract, called an amendment. In many cases, amendments will change the maximum contract amount, the scope of work, the time the contract is active, or any combination of these elements. If an amendment drives the contract total above the $500,000 threshold, it must be approved by City Council.

Fiscal Accountability Rule (FAR) 8.1 establishes core rules that require every agency and department to utilize the City’s financial system of record to record financial transactions. FAR 8.1 prohibits purchase splits by stating, “City employees shall not split purchases to avoid the maximum limits contained in this Fiscal Accountability Rule, Charter, or Revised Municipal Code, or perform other actions with the intent of avoiding purchasing requirements.”

As part of the audit, the audit team reviewed 5,257 data records in Alfresco to identify instances where agencies may have split contracts. Our analysis was intended to detect contracts that were structured to avoid City Council oversight. This analysis is limited, however, based on unreliable data discussed in the previous section. The limitation of this analysis and its impact on the City’s ability to monitor contract splits will be explored further in a contracting practices audit planned for 2018. Despite the reliability issues with this data, we have identified

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16 One example of an on-call contract would be the need for emergency cleanup services after a severe storm. The City knows that the need may arise for emergency cleanup, but it is not possible to predict exactly when or where the services would be needed in advance. The City would create an on-call contract for the services. The City will then create a work order after a storm. In creating the work order, the City would not have to go through the contracting practice again.
17 A work order is an approval for specific work to be accomplished, usually based on a master on-call contract. In our test work, we saw contracts that had never been utilized.
four instances where contracts appear to have been split to avoid City Council oversight. These examples are described in detail below.

**Contract Splits Involving On-Call Contracts**—We found two instances of possible contract splits that involved at least one on-call contract. The first instance occurred when the City opened an on-call contract with a vendor and later created an additional standard expenditure contract before the on-call contract expired with a similar scope. The standard expenditure contract contained additional details, but as mentioned above, these details also could have been described in a work order. The term of the standard expenditure contract started and ended before the on-call contract’s term ended; in other words, the two contracts’ term dates overlapped. Because the City created a new contract instead of simply using a work order, the total expenditure authorized between the two contracts was $647,902. Even though $647,902 was authorized, we found only $402,362 was expended against this allowable amount.

In another instance, we found two on-call contracts created on the same day, with the same vendor, and with nearly identical scopes. These contracts were both amended twice to extend the terms of the contracts. One contract scope was for the purpose of “on-call professional landscape, architectural, and technical services” and the other contract’s scope was for the purpose of “professional planning, design and related consulting services as necessary.” Each contract received authorization for $485,000. The total expenditures authorized to this vendor were $970,000. Of the $970,000 authorized, we determined the agency spent $711,481 which exceeds the $500,000 threshold.

**Contract Split with Overlapping Dates**—Our work identified two contracts with the same scope of work but different origination dates. Both contracts were created for program support with the same agency and vendor. The agency previously amended the first contract and when adding more services, created a new contract instead of amending the old one. As a result, both contracts were active for periods of time that overlapped. In this case, the total authorized expenditure amounts exceeded the threshold for City Council approval. The contracts individually were executed below the $500,000 limit, but between 2013 and the third quarter of 2014, the contracts overlapped, pushing the total authorized amount to approximately $635,000. The actual expenditure between these two contracts was approximately $593,000. Figure 3 on page 14 shows the amounts authorized by the two contracts.
**Figure 3. Contract Split with Different Initiation Dates**

Source: City contracts pulled from Alfresco and analyzed by Auditor’s Office.

**Contract Splits from Continuing Vendor Relationship**—Our analysis revealed, an agency had been regularly amending a contract to add additional time to the term and add approximately $80,000 to the contract’s maximum amount. When the contract’s maximum amount approached the $500,000 limit, the agency amended the contract to add only three months to the contract term instead of an entire year. At the expiration of the contract, the agency created a new contract for the remaining nine months of the year.

The agency then continued the previous pattern by amending the contract to add an additional year and approximately $100,000 to the amount of the contract. The total amount of money spent between the two contracts was $592,605, which exceeded the City Council oversight threshold by $92,605. Figure 4 on page 15 below shows how the two contracts changed over time. The contracts, if combined, would have exceeded the $500,000 threshold just before a new contract was initiated.
Figure 4. Contract Renewed When Approaching the City Council Oversight Threshold

![Graph showing contract renewals from 2009 to 2016.](image)

**Source:** City contracts pulled from Alfresco and analyzed by Auditor's Office.

Although Executive Order 8 requires that “agencies should limit the duration of contracts to three to five years,” the renewal for the first quarter of 2014 put this contract in violation of the duration limitation. It appears that this three-month renewal was structured around the $500,000 limit. The total amount spent between the two contracts was $637,924.

**City Council Approval Adds Time to the Contracting Process**

Not all contracts in the City require the same level of approval. For example, agencies may choose to draft contracts below the $500,000 City Council approval limit because contracts requiring City Council approval generally take about 42 days longer to finalize. In July of 2015, City Council passed Ordinance 15-0371 that changed a process allowing it to approve contracts by using a resolution instead of an ordinance.\(^\text{18}\) Resolutions have fewer requirements to be passed, and as a result, this has reduced the amount of time to complete the contracting cycle by approximately 19 days. Contracts that exceed $100,000 generally must be competitively bid, which adds approximately 12 days to the contracting cycle. The average time for all contracts was 67 days. Figure 5 on page 16 demonstrates these effects on the contracting process. Additional details about this analysis can be found in Appendix C on page 24.

\(^{18}\)The process for passing a resolution required fewer steps than passing an ordinance. Resolutions may be passed with only one reading at City Council while ordinances must be read twice. Resolutions, unlike ordinances, can be passed without publication; consequently, the contracts may be signed immediately after the resolution is approved.
Figure 5. Marginal Effect, in Days, on Contract Processing Time

Source: Auditor's analysis of Alfresco meta-data.
Note: *Process change allowed approval of contracts using a resolution instead of an ordinance.

Given the additional time that City Council approval adds to the contracting process, some agencies may want to avoid this step when possible. According to the Association of Fraud Examiners, splitting contracts can be a potential red flag for contracting schemes as contract administrators can use it to avoid review. An agency could structure contracts to be below the $500,000 limit. Contracts below this limit are not required to have City Council approval and therefore will generally go through the contracting process faster. One way to create smaller contracts would be for an agency to issue multiple contracts to the same vendor for the same scope of work instead of a single contract. We refer to this practice as contract splitting.

Current City Rules Do Not Clearly Define Split Contracts

There are several rules that indirectly prohibit contract splitting. First, City Charter, Section 3.2.6, states that contracts above $500,000 must be approved by City Council. Second, Fiscal Accountability Rule (FAR) 8.1 states that, “City employees shall not split purchases to avoid the maximum limits contained in this FAR, Charter, or Revised Municipal Code, or perform other actions with the intent of avoiding purchasing requirements.” Third, FAR 7.1 states that contracts and grants have all the required approval and authorizations, which would include City Council approval when the contract amount exceeds $500,000. Finally, Executive Order 8 provides the base guidelines for contracting practices within the City. Memorandum 8B—an attachment to Executive Order 8—prohibits splitting to avoid the limit for competitively bid contracts, which is $100,000. Apart from this reference, Executive Order 8 does not mention splitting contracts.

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19 Executive Order 8 outlines at a high level, instances where a contract must be used and the administrative requirements, contracting procedures, prequalification requirements for contractors participating in the competitive bidding process, and the approvals required for contracts.
City Charter Has Established Controls for Certain Types of Contracts

The City Charter also includes controls for other types of contracts, such as leases. For example, section 3.2.6 of the City Charter, states that, “contracts which result in payment or receipt by the City of one-half million dollars or more, require the approval of the City Council acting by ordinance or resolution prior to their execution by City officials.” Further, any contract between the City and other government entities involving shared tax revenue must be approved by City Council prior to execution.20 In addition, Section 2.9.4 of the City Charter, states that liability in the City and County to pay for services or materials purchased by the department shall arise only because of a written purchase order, an award pursuant to a bidder's proposal, a request for proposal issued by the department with the authority of the manager, or a regularly executed written contract.21

According to the charter, the Mayor's Office is ultimately responsible for the contracting process in the City. The City Charter requires the Mayor to ensure “all contracts and agreements with the City and County are faithfully kept and fully performed.” Further, the City Charter requires all departments and commissions report any violations, such a failing to acquire proper authorizations, to the Mayor. Other roles and responsibilities, such as policies that may have been adopted at an agency level will be explored in more detail in the contracting practices audit planned for 2018.

Unclear Definitions of Splits Limits Oversight Capabilities

While some contracts may be split to avoid oversight thresholds, other contracts may be split for valid business reasons. For example, we describe the various reasons a contract may be split in Appendix A. Further, as described in “Contract Splitting,” a journal article by procurement consultant Jonathan Mak, contracts may also be split due to poor planning or a lack of internal coordination.22 Even when considering the indirect rules against contract splitting, there are no clear definitions in City guidance of what constitutes a split contract or instances where splits are prohibited. In this same publication, Mak discusses organizations that actively monitor for split contracts. In these organizations “[p]olicy, [r]egulations and [g]uidelines are regularly reviewed and revised to ensure that the laws are understood and followed.”23

RECOMMENDATION 2.1

The Mayor’s Office should better define the types of contract splitting that are prohibited and ensure controls are implemented to prevent improper contract splitting.

Agency Response: Agree - February 28, 2018

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20 Denver City Charter Title I, Subtitle B, Article III, § 3.2.6.
21 Denver City Charter Title I, Subtitle B, Article II, § 2.9.4.
23 Ibid., 20.
RECOMMENDATIONS

We make the following recommendation to enhance existing controls over contract splits to help mitigate the risk of improper splits.

2.1 Define Contract Splits—The Mayor’s Office should better define the types of contract splitting that are prohibited and ensure controls are implemented to prevent improper contract splitting.

Auditee Response: Agree, Implementation Date - February 28, 2018

Auditee Narrative: Given the small number and percentage of occurrences in the sample (4 of 5,257; 0.08%), the City Attorney’s Office will work with the Mayor’s Office to define improper contract splitting via these case studies and communicate any improper splitting to the involved departments. The City Attorney’s Office will analyze splits annually on a case-by-case basis to determine if improper splitting occurred and to educate those personnel to prevent subsequent improper splitting, since this is not viewed as a widespread or citywide problem based on the low prevalence.
APPENDICES

Appendix A – Typology of Splits

Any instance where a contracting entity (referred to as a purchaser) has more than one contract with a single vendor could be considered a split. Two or more contracts may be split at the same time, or they may be split as a contract is amended over time. As demonstrated by Jonathan Mak’s work, “Contract Splitting,” contracts may be split for many reasons. He describes situations where contracts are split for appropriate and inappropriate reasons, identifying four broad categories of splits:

1) Splitting contracts for operational requirements (also called “contract unbundling”);
2) Splitting contracts due to poor procurement planning;
3) Splitting due to no procurement planning; and
4) Splitting contracts to avoid contracting requirements.

Mak’s example of a split to avoid contract requirements details nefarious behavior, resulting in kickbacks. However, we recognize there are other reasons why an agency may split a contract. For example, an individual may split a contract to avoid oversight requirements that may slow or stop the contract process. Further, and with respect to planning-related reasons, we identified a third reason for splits—the inability of the agency to foresee the need to contract twice with a specific vendor. Therefore, we propose to modify Mak’s spectrum to include three broad categories of splits and multiple subcategories as demonstrated on page 21. The broad categories include splits due to operational requirements, planning limitations, and to avoid contracting requirements.

Splits Due to Operational Requirements

In the City, an agency or department may split a contract to follow vendor requirements or requirements set by the City. Additionally, City agencies must follow guidelines set by City Charter or Executive Order 8. City contracts must comply with these requirements even if it results in a split contract. For example, Executive Order 8 requires that “agencies should limit the duration of contracts to three to five years.” To comply with Executive Order 8, an agency will have to issue multiple contracts if the vendor relationship or the project will continue for more than five years. For example, it is possible to have a single engagement with a company that lasts more than 10 years, such as a service contract renewed, annually with a new contract amendment. Executive Order 8 would require contracts such as these to be split into increments of five years or fewer unless there was a valid business justification to have a single contract.

In addition, vendors may have specific contract requirements or organizational structures that lead to splits. A vendor could request the City use multiple contracts to conform with the vendor’s contract standards. One reason for this is a single company providing consulting services and IT

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24 Executive Order 8 includes “vendor” in its definition of contractor. “Contractor” is synonymous with “consultant,” “contracting party,” “second party,” or “vendor.” This report uses the term “vendor” to describe the third party engaged in a contractual agreement with the City.


26 Executive Order 8, Memorandum No. 8B, pg 1.
support services, each provided by a different department or division within the company. These separate business units may require unique contracts to suit their business purposes. Therefore, an agency might engage multiple business units from a single company, and in these instances, an agency would have split contracts with the vendor.

Finally, the City may subdivide a contract into multiple parts because a project has distinct types of work, only to have the multiple contracts bid on and won by the same vendor. The City may be able to get additional bidders by splitting these distinct, but related, services to allow smaller more specialized vendors to bid. Through this process, it is still possible a single vendor wins multiple unrelated bids. This is an instance where multiple contracts allow the City to potentially get better cost savings, but ultimately result in multiple contracts with the same vendor.

**Splits Due to Planning Limitations**

Mak (2010) describes instances where splits are due to insufficient planning and total lack of planning. For our analysis, we combined these two reasons for a split into a single category, since Mak makes little distinction between the categories. The example Mak uses for insufficient planning causes two separate contracts to be generated accidentally because agencies have not coordinated the purchasing efforts.

Our initial review of City contracts found splits may occur due to general limitations in planning, rather than insufficient or no planning. For example, while the same outside legal expertise was consulted for five separate incidents between June 30, 2014 and September 1, 2016, our review of the contract material indicates the contracts all appear to be for unrelated matters. City officials could not reasonably foresee all instances where they would need legal counsel over a two-year period to avoid creating multiple contracts with the same vendor. This scenario could not have been predicted when the first contract was completed, and thus needed to be separate transactions. Based on these types of scenarios, we combined Mak’s “lack of planning” and “no planning” categories into a “planning limitations” category.

**Splits to Avoid Contracting Requirements**

Finally, contracts may be split to avoid contracting requirements. For example, contracts may be split to avoid oversight and transparency requirements, or spending limits. Contracts may be split in parallel—meaning two contracts are initiated around the same time to divide the total amount per contract. Contracts may also be split in series—meaning upon renewal for services, a new contract is initiated rather than amending the initial contract. Each of these methods for splitting keeps contract amounts below a contracting requirement threshold.

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[27] Early in the process of scripting, we looked at contract descriptions for contracts with the same vendor name and employee initiating the transaction.
*Generally, requires a new competitive bid, even if both contracts are with the same vendor.

**Note:** Fields highlighted in red are the types of splits the audit team's analysis targets.
### Appendix B – Alfresco User Guide Roles and Responsibilities

<table>
<thead>
<tr>
<th>Role Symbol</th>
<th>Role Description and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initiator</strong></td>
<td><em>Initiator</em>: This is the person in the City agency who starts the contract request. For expenditures, this begins in PeopleSoft Financials as a Requisition. All other contract types start in DenverDOCS Alfresco. This person may be a project or program manager, an agency contract administrator, or any member of an agency management team.</td>
</tr>
<tr>
<td><strong>Contract Admin.</strong></td>
<td><em>Agency Contract Administrator</em>: This is the agency staff member who will be responsible for managing the contract request for that Agency. In Contracting Automation, the Agency Contract Administrator plays a significant role in keeping the contract request moving forward.</td>
</tr>
</tbody>
</table>
| **Spectators** | *Agency Spectators*: These are agency staff members who could be invited to participate in contract request workflows for their agency. There are several types of Spectators:  
  - *Default Spectators*: These are staff, managers, directors, and head of the agency that are able to review the activity of all active contract requests. These agency staff members might also be invited to participate in the contract requests submitted by other City agencies.  
  - *Invited Spectators*: Selected during an early task in the workflow, these individuals have an additional ability to review the documentation attached to the contract request.  
  - *Project Managers*: Examples include project managers and program managers who may be responsible for the original request and for administration of the contract after the contract is approved. |
| **Reviewers** | *City Reviewers*: These are staff members from designated City agencies who are responsible for examining contract requests from City agencies. Reviewing groups help refine the contract request and ensure that the contract request complies with City charter, ordinance and policy requirements. In many of the project-related documents, the Reviewer Groups were described as the Shared Service Groups. |
| **City Attorney** | Includes the Attorneys, Paralegals and Legal Secretaries in City Attorney’s Office – Municipal Operations (CAMO), and for DIA, the Attorneys, Paralegals and Legal Secretaries in City Attorney’s Office – Airport Legal Services (ALS) |
| **Vendor** | Vendors will not have direct access to Contracting Automation in DenverDOCS Alfresco. All vendor communications go through the Agency Contract Administrator, or in some cases through the assigned City Attorney. |
**Agency Approvals**

*Agency Approvals*: Agency approval occurs at two points in the workflows – approval of the contract request by the agency before it goes to the City Attorney’s Office, and approval of the final vendor signed version of the contract before it is routed for additional approvals. Each City agency has designated staff members who are authorized to approve contract requests on behalf of that agency. Some Spectators, such as project or program managers and agency management, will be invited to review and approve the contract request. The final Agency Approval will then come from the head of the agency or their assigned delegate. All agency approvals will be recorded within the workflow history.

**Council**

*City Council*: The City Council reviews and approves contract requests that exceed $500,000 or that fit other specified criteria. The assigned City Attorney has the final responsibility to determine if a contract request should be routed to the City Council for approval.

**Charter Signatures**

*Charter Signatures*: The City Charter specifies five required signatures on each City Contract. These signatures are the following individuals:
- *The assigned City Attorney on behalf of the City Attorney*
- *The Mayor or Deputy Mayor*
- *The Clerk and Recorder or Deputy Clerk and Recorder*
- *The Chief Financial Officer or their designated delegate*
- *The Auditor or Deputy Auditor*

*Electronic Signatures*: Signatures for these five individuals will be applied to the City Signature page based on the signature actions in the workflow.

*Paper Signatures*: Signatures by these five individuals are hand signed on the paper copy(ies) routed for signature. The administrative teams working in each office are responsible for updating the workflow showing who signed the paper contract and the date of the signature. The assigned City Attorney has the final responsibility to determine if a contract will be routed through the automated electronic signature tasks in the workflow, or if a contract will be routed through paper signature.

*Source*: Contracting Automation User Guide 3.3

We were unable to find rules or guidance that indicated which City departments or officials are responsible for detecting split contracts. The City Attorney’s Office, Auditor’s Office, Purchasing Division, and Clerk and Recorder’s Office have all stated they are not responsible for addressing or reviewing for split contracts. Additionally, the City Charter does not clearly define the roles and responsibilities with respect to oversight when enforcing rules related to contracting. Further, neither Memorandum 8B from Executive Order 8 nor FAR 8.1 specify the party responsible for monitoring to ensure contracts are not split.
Appendix C – Details About Marginal Effect of Contract

We constructed a linear regression model to describe the relationship between key contracting factors and the amount of time to complete a contract. We used Alfresco summary data for expenditure contracts that were completed between January 1, 2014 and August 11, 2017. The data set included 5,257 contract records.

The dependent variable in the model was the time to complete a contract, measured in days. To estimate the time to complete a contract, we used two system generated dates in the Alfresco summary data. The initiation date of the record in Alfresco to approximate the start of the contracting process and the Auditor’s signature date to approximate the end of the contracting process.

The key factors of interest, as shown in the body of this audit report, were if a contract was competitively bid, if a contract had city council approval, and if the contract was processed before or after a contract process change that went into effect in July 15 based on Ordinance 15-0371. Ordinance 15-0371 allowed contracts to be passed by resolution, rather than ordinance. In addition to these attributes, we also considered the total dollar value of the contract, the contract work type (e.g. standard expenditure or capital improvement), and compared original contracts with contract amendments. The final equation was:

\[ Y_{\text{contract time}} = \beta X_{\text{competitive bid}} + \beta X_{\text{required city council approval}} + \beta X_{\text{before or after Ordinance 15-0371}} + \beta X_{\text{contract amount}} + \beta X_{\text{contract work type}} + \mu \]

The results of the regression model show the independent effect that each attribute has on the amount of time to complete an expenditure contract. Table 2 below provides the outputs of the regression model. The coefficient column indicates how many days the contract process is impacted for a one-unit change in the attribute. For example, if the contract had a competitive bid (a change from 0 to 1), there is an increase of 11.92 days in the time to complete a contract. Note, for contract work type and contract amendment, the first lines indicate the baseline for the regression model and the coefficients below the baseline indicate a relative change in time to complete a contract. For example, the baseline for the contract amendment number is the original contract. The models’ results show that in comparison to the original contract, a contract that is on its first amendment takes about 23 fewer days to complete the process.

\[ \text{While all contracts considered were expenditure contracts, contracts can be further categorized into contract work types including standard expenditure, state-paid services, professional services, master on-call, construction, capital improvement, land use, or other.} \]
Table 2. Linear regression model for contracting process time, January 1, 2014 through August 11, 2017.

<table>
<thead>
<tr>
<th></th>
<th>Coefficient (Affect, in days, from Baseline)</th>
<th>Robust Standard Error</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Amount</td>
<td>0.0000017</td>
<td>0.00000013</td>
<td>-0.0000000834</td>
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<tr>
<td>Competitive Bid</td>
<td>11.92*</td>
<td>1.79</td>
<td>8.42</td>
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<tr>
<td>City Council Ordinance</td>
<td>41.82*</td>
<td>2.90</td>
<td>36.14</td>
</tr>
<tr>
<td>Contract Finalized After Ordinance 15_0371</td>
<td>-19.25*</td>
<td>1.86</td>
<td>-22.90</td>
</tr>
<tr>
<td><strong>Contract Work Type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Expenditure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Paid Services</td>
<td>-41.05*</td>
<td>1.60</td>
<td>-44.18</td>
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<tr>
<td>Professional Services</td>
<td>-1.30</td>
<td>3.25</td>
<td>-7.67</td>
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<tr>
<td>Master On-Call</td>
<td>-23.01*</td>
<td>2.91</td>
<td>-28.71</td>
</tr>
<tr>
<td>Construction</td>
<td>-8.85</td>
<td>4.99</td>
<td>-18.64</td>
</tr>
<tr>
<td>Capital Improvement</td>
<td>88.52*</td>
<td>12.23</td>
<td>64.55</td>
</tr>
<tr>
<td>Land Use</td>
<td>39.92</td>
<td>29.06</td>
<td>-17.04</td>
</tr>
<tr>
<td>Other</td>
<td>-38.04*</td>
<td>9.86</td>
<td>-57.37</td>
</tr>
<tr>
<td><strong>Contract Amendment</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Original Contract</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; amendment</td>
<td>-23.39*</td>
<td>1.84</td>
<td>-26.99</td>
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<td>2&lt;sup&gt;nd&lt;/sup&gt; amendment</td>
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<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; amendment</td>
<td>-24.99*</td>
<td>2.94</td>
<td>-30.75</td>
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<td>4&lt;sup&gt;th&lt;/sup&gt; amendment</td>
<td>-32.20*</td>
<td>3.36</td>
<td>-38.79</td>
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<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; amendment</td>
<td>-25.90*</td>
<td>4.49</td>
<td>-34.69</td>
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<tr>
<td>Constant (Base for comparison)</td>
<td>79.76*</td>
<td>2.28</td>
<td>75.28</td>
</tr>
</tbody>
</table>

**Source:** Auditor's analysis of Alfresco meta-data.

**Note:** *'s indicate statistically significant at a p-value lower than .05.
December 4, 2017

Auditor Timothy O’Brien, CPA
Office of the Auditor
City and County of Denver
201 West Colfax Avenue, Dept. 705
Denver, Colorado 80202

Dear Mr. O’Brien,

The Office of the Auditor has conducted a performance audit of Contract Controls in Alfresco.

This memorandum provides a written response for each reportable condition noted in the Auditor’s Report final draft that was sent to us on November 13, 2017. This response complies with Section 20-276 (c) of the Denver Revised Municipal Code (D.R.M.C.).

AUDIT FINDING 1
Unreliable Contract Data Entered in Alfresco Hinders the Accessibility of Contracts

RECOMMENDATION 1.1
The Mayor’s Office should administer or designate a subject matter expert to administer mandatory training and disseminate user materials on how contract data is supposed to be entered into Alfresco to ensure accurate, consistent and complete data.

<table>
<thead>
<tr>
<th>Agree or Disagree with Recommendation</th>
<th>Target date to complete implementation activities (Generally expected within 60 to 90 days)</th>
<th>Name and phone number of specific point of contact for implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>Complete</td>
<td>David Edinger</td>
</tr>
</tbody>
</table>

Narrative for Recommendation 1.1
A user guide and online training module currently exist in the Contract Management Module of Alfresco, administered by the City Attorney’s Office and Technology Services. Both the user guide and training video can be located at Alfresco/Company Home/Alfresco User Guides & Workflow Diagrams/Contracting Automation MODIFIED Expenditure Standard Alfresco User Guide v.2.2.pdf (training video link at p. 3) and at City U – search Alfresco. The user guide for all workflows can be found at Alfresco/Company Home/Alfresco User Guides and Workflow Diagrams/Contracting User Guide v.3.3.pdf. The Contract Training Manual is located on the new intranet site at denvercity.sharepoint.com/sites/financialnetwork/forms/Guide_Contracts_ProceduresManual.pdf. The City Attorney's Office also provides an annual live training session on contracting. To reinforce naming
conventions, the City Attorney's Office will send out a communication to contract administrators reminding them of the expected naming conventions.

**RECOMMENDATION 1.2**
The Mayor's Office should work with Technology Services to implement application controls over key contract summary data fields including but not limited to amount, vendor and description fields. This will help ensure accurate, consistent, and complete data.

<table>
<thead>
<tr>
<th>Agree or Disagree with Recommendation</th>
<th>Target date to complete implementation activities (Generally expected within 60 to 90 days)</th>
<th>Name and phone number of specific point of contact for implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>February 28, 2018</td>
<td>David Edinger</td>
</tr>
</tbody>
</table>

**Narrative for Recommendation 1.2**
To the extent the existing Alfresco technology allows, the Mayor's Office will work with Technology Services to implement validation controls for appropriate data fields.

**AUDIT FINDING 2**
Some Contracts Give the Appearance of Being Split to Avoid City Council Approval

**RECOMMENDATION 2.1**
The Mayor's Office should better define the types of contract splitting that are prohibited and ensure controls are implemented to prevent improper contract splitting.

<table>
<thead>
<tr>
<th>Agree or Disagree with Recommendation</th>
<th>Target date to complete implementation activities (Generally expected within 60 to 90 days)</th>
<th>Name and phone number of specific point of contact for implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>February 28, 2018</td>
<td>Shaun Sullivan</td>
</tr>
</tbody>
</table>

**Narrative for Recommendation 2.1**
Given the small number and percentage of occurrences in the sample (4 of 5,257; 0.08%), the City Attorney's Office will work with the Mayor's Office to define improper contract splitting via these case studies and communicate any improper splitting to the involved departments. The City Attorney's Office will analyze splits annually on a case-by-case basis to determine if improper splitting occurred and to educate those personnel to prevent subsequent improper splitting, since this is not viewed as a widespread or citywide problem based on the low prevalence.

Please contact me at 720-865-9033 with any questions.

Sincerely,

David Edinger
Chief Performance Officer
cc: Valerie Walling, CPA, CMC, Deputy Auditor
Katja Freeman, MA, MELP, Audit Manager
Yvonne Harris-Lott, CPA, Audit Supervisor
Kristin Bronson, City Attorney
Beth Machann, Controller, Department of Finance
Brendan Hanlon, Chief Financial Officer
Robert Bruns, Application Development Manager, Technology Services