Expenditure Analysis

City of Tulsa
Internal Auditing
January 2009

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Introduction

Spend management is a tool that provides knowledge about what is bought, the prices paid, who buys it, and from whom it is bought. This knowledge is used to increase buying efficiency to save money and improve performance. A number of methods are used to obtain information involving: automating, extracting, supplementing, organizing, and analyzing spend data. Automated systems are established to extract and compile internal financial data covering everything bought, supplement that data with information from external sources, and organize this data into complete and consistent categories of products, services, and suppliers. The data is continually updated and analyzed. The spend data is used to change from a fragmented procurement process to a more efficient and effective process in which managers make purchase decisions on an organization-wide basis.

Attachment A diagrams how Internal Auditing captured existing spend data for this project. Attachment B provides examples of reports that could be available if a spend analysis system is implemented. Attachment C provides management's response of action plans for the improvement suggestions presented in this report.

Accomplishment of spend management for the City requires participation of several City Departments. Accordingly, this report requests support from the Mayor and Mayor's Chief of Staff as the suitable level of management to implement improvements City-wide.

The following summary of audit recommendations is grouped by the areas involved; including the Mayor's Office, Information Technology, Purchasing and all City departments coding purchases.

Summary of Improvement Opportunities

Mayor's Office

- Initiate a program to enable analysis of spend data.
- Set performance goals to annually increase the percentage of spend classified at a detailed level.

Information Technology

- Establish automated extraction routines to aggregate and update spend data from multiple sources on a regular basis.
- Create automated error checks to find codes that are entered incorrectly.
- Enable management to drill down from high-level summaries into transaction detail.

Purchasing

- Develop buyers into commodity managers who are responsible for all spend in their assigned commodity categories.
- Enhance core spend data with relevant external market intelligence and supplier information to provide insight for devising optimal sourcing strategies.

City Departments

- Adopt one transaction coding system and code all transactions consistently.
- Extensively train all employees who have authority to create transactions.

Audit Analysis

Research indicates the following steps to implement spend management best practices:

1. Analyze existing spend data capabilities.
2. Access all spend data sources.
3. Adopt a common transaction coding classification method enterprise-wide.
4. Establish efficient and repeatable data accuracy checking and classification.
5. Provide information to empower buyers to become commodity managers.
6. Classify spending at a detailed level.
7. Enhance core spend data with vital management information (business intelligence).

This report provides information on each of these areas.

1. Analyze existing spend data capabilities

Internal Auditing completed an initial analysis of spend management capabilities and presents the following observations.

2. Access all spend data sources

Best Practice

- Data systems should be mapped to understand which business information systems contain spend data.
- Spend data should include a complete record of expenditures.

Status

The general ledger is the most complete database of City expenditures. However, the general ledger description fields are not uniform and transactions have no unique identifiers to relate each individual transaction back to its source.

Improvement Opportunity

Automated extraction routines should be established to aggregate and update spend data from multiple sources on a regular basis. See Attachment A for more information.

Response

See Attachment C for management's response.

3. Adopt a common transaction coding classification method City- wide

Best Practice

All spend transactions should be coded using a consistent and useful classification method.

Status

The Purchasing Division has adopted industry-standard classifications known as the National Institute of Governmental Purchasing (NIGP) code. The Purchasing Division codes contract purchase transactions with NIGP codes. However, encumbrance purchases and purchasing card purchases are not assigned NIGP codes. While all transactions are coded with general ledger account numbers, this information is frequently not detailed enough or used properly to capture accurate spend descriptions. For example, 194,913 transactions in FY2007 totaling over $122 million were coded with one of five "other" expenditure categories (i.e. Other

Services, Other Fees, Other Operating Supplies, Other Repair Parts & Supplies, Other Outside Equipment Repair). Detailed transaction information cannot be captured from these categories without a labor-intensive analysis. If specific coding had been appropriately input, spend management could be applied to these transactions.

Improvement Opportunity

All employees who have authority to create transactions should use the adopted classification codes. This will require training employees. Management should consider reducing the number of employees allowed to code transactions. Automated routines should be established to capture purchasing card transactions and translate them into the city's classification codes. Management should create automated error checks that identify incorrect coding.

Response

See Attachment C for management's response.

4. Establish efficient and repeatable data cleansing (accuracy checking)

Best Practice

- Data cleansing extracts, classifies, and enhances spend data so that it accurately represents spending activities across the organization.
- Automation should be used to streamline procedures and make spend management a repeatable process.

Status

The City has not performed data cleansing as described. For example, Internal Auditing found over $7,000,000 in workers compensation claims coded to general ledger account "other services" over a five year period. These claims should have been coded to general ledger account "workers compensation." If data cleansing had been performed, these transactions would have been identified and reclassified.

Improvement Opportunity

Management should decide whether to cleanse data going forward or to also cleanse historical data going back for a specified period.

Response

See Attachment C for management's response.

5. Provide information to empower buyers to become commodity managers

Best Practice

Commodity managers should receive information about all spend in their assigned categories and use the information to guide purchase decisions.

Status

The Purchasing Division attempts to divide buyers' responsibilities by commodity, but these buyers do not have the capability to monitor what is being spent on each commodity across all vendors, departments, and funds. In addition, not all spend transactions flow through Purchasing.

Improvement Opportunity

The City's buyers should be further developed into commodity managers who are responsible for all spend in their commodity category. These buyers should monitor spend behavior and ensure classification accuracy. There may be an opportunity to

use retired commodity experts from the community as volunteers to provide commodity spend analysis and enhance staff knowledge.

Response

See Attachment C for management's response.

6. *Classify spending at a detailed level*

Best Practice

The most effective spending analyses are the result of spend data that is categorized at the item level, providing visibility and allowing comparisons of usage, quality and pricing across suppliers and commodities.

Status

Less than 20 percent of the City's spend is currently classified at a detailed level.

Improvement Opportunity

The City should set goals each year to increase the percentage of spend classified at a detailed level. A high percentage of spend classified at a detailed level will enable the City to establish optimal purchasing strategies based on timely and accurate intelligence.

Response

See Attachment C for management's response.

7. *Enhance core spend data with management information (business intelligence)*

Best Practice

- Best in class enterprises enhance spend data with business intelligence, such as contract terms, alternative parts data, industry pricing indexes, average selling prices, supplier financial risk scores, performance information, lead times, and inflation.
- Information is easily accessible from one command and control dashboard.

Status

The City does not provide spend data business intelligence to management. Spend data is difficult to obtain.

Improvement Opportunity

Management should consider initiating a spend data management program that will summarize spending trends and allow drill down from high-level summaries into individual transaction detail. This would allow for informed spending decisions for all levels of management, as well as better monitoring of spending. Future information system planning should provide business intelligence and supplier information to provide insight for devising optimal sourcing strategies.

Response

See Attachment C for management's response.

Distribution List

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Councilor Jack Henderson
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External Auditor

Attachment A – Capturing Spend

The following diagrams explain how Internal Auditing captured existing spend data using the existing accounting system modules and information available from the City's procurement card records.

Chart 1 – Overview of Spend Capture

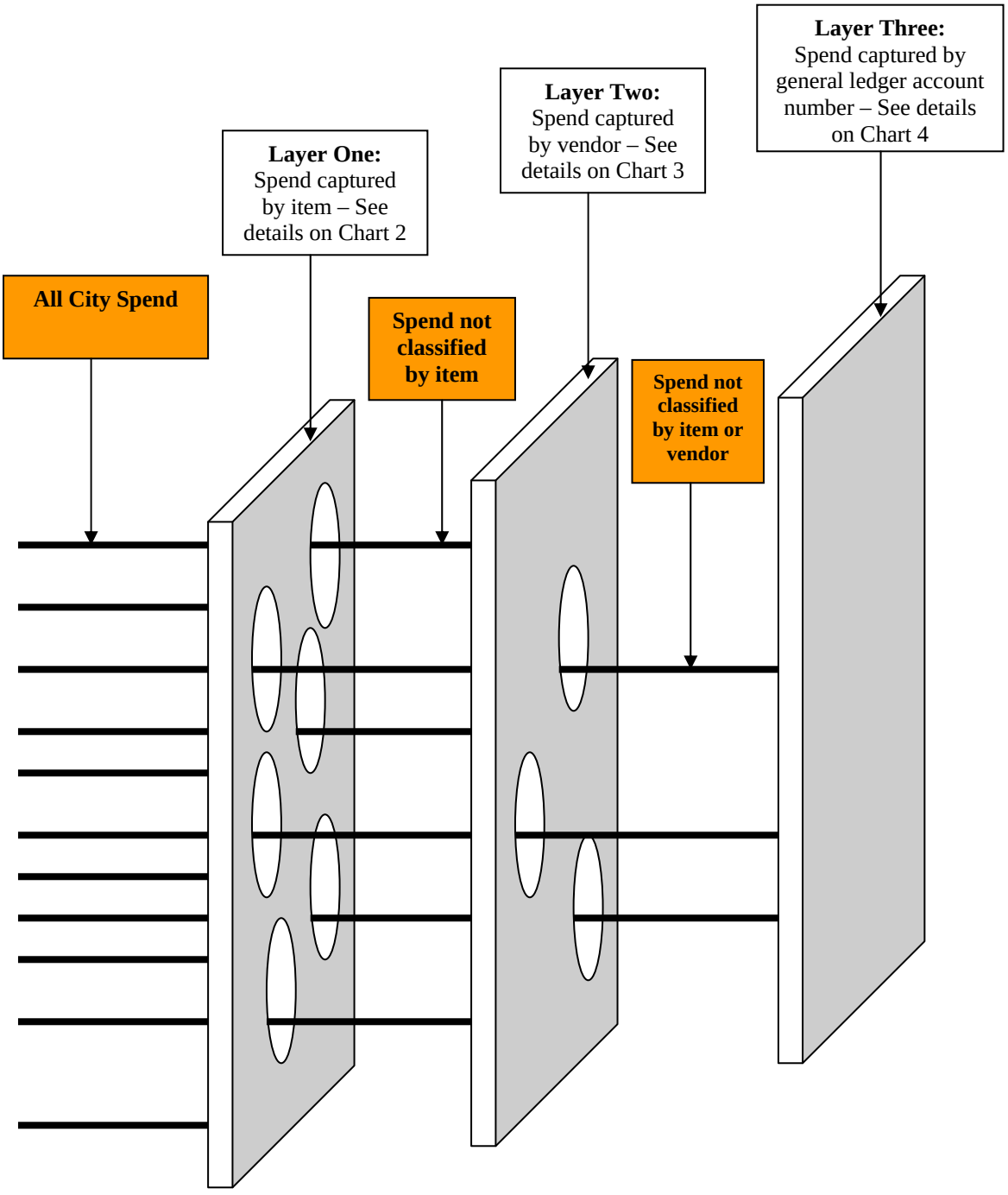
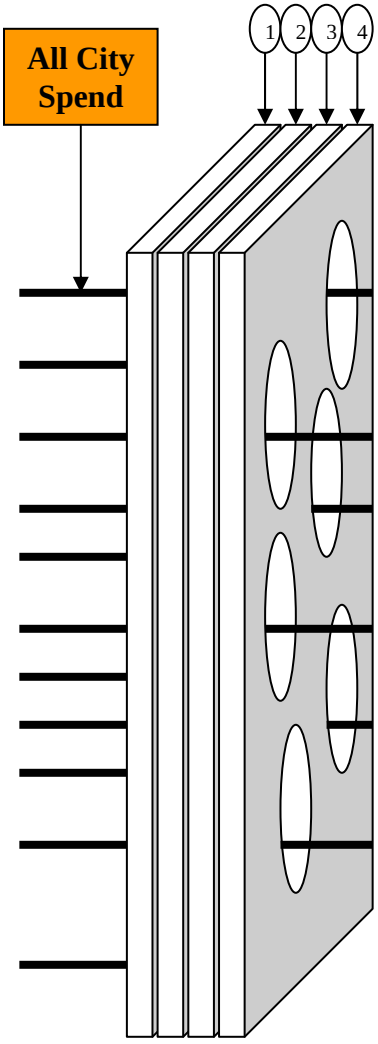


Chart 2 – Capturing Spend by Item

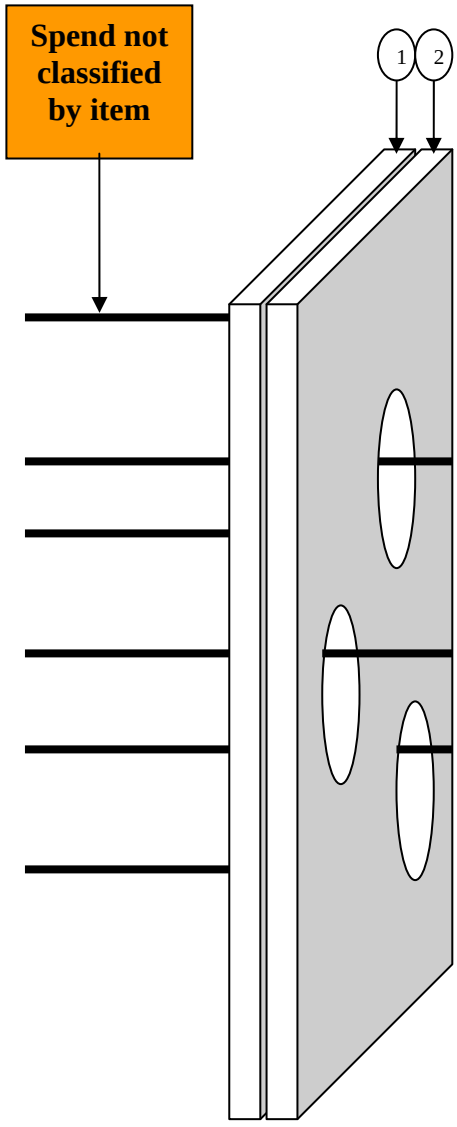
There are four circumstances in which specific commodity code information is available from transaction detail. If these circumstances are not present, spend information cannot be captured at layer 1. Layer 1 detail is the most descriptive for analyzing spend.



Information currently available	Additional information that could be coded
1 **Purchasing** Commodity (NIGP) codes issued by Purchasing for each contract-based purchase	3 **Purchasing** Commodity codes could be entered for each **item** purchased in each contract
2 **P-Card** Some vendors record P-card transactions with commodity codes for each item purchased	4 **P-Card** Commodity codes could be input for each item purchased with a P-card. Clerks already enter account coding (fund, account, and center) for each P-card purchase

Chart 3 – Capturing Spend by Vendor

There are two circumstances in which transaction detail can be summarized based on vendor information. If these circumstances are not present, spend information cannot be captured at either layer 1 or 2. Spend information is more general at this level.



1 **Purchasing**

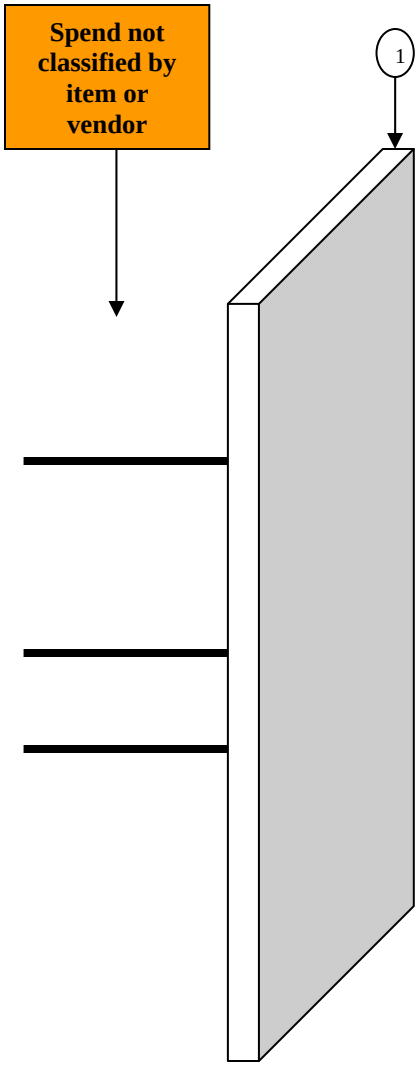
Purchasing requires each vendor to select a NIGP code for the product or service they will provide. This code provides a general market category

2 **P-Card**

Each vendor who processes P-card transactions is required to use a Merchant Category Code (MCC). This code provides a general market category

Chart 4 – Capturing Spend by Account Coding

Every transaction is coded with fund, account, center information. Account coding can provide a general spend category. By capturing information from at least one of the available layers, **all** transactions can be coded to at least a general spend category.



1

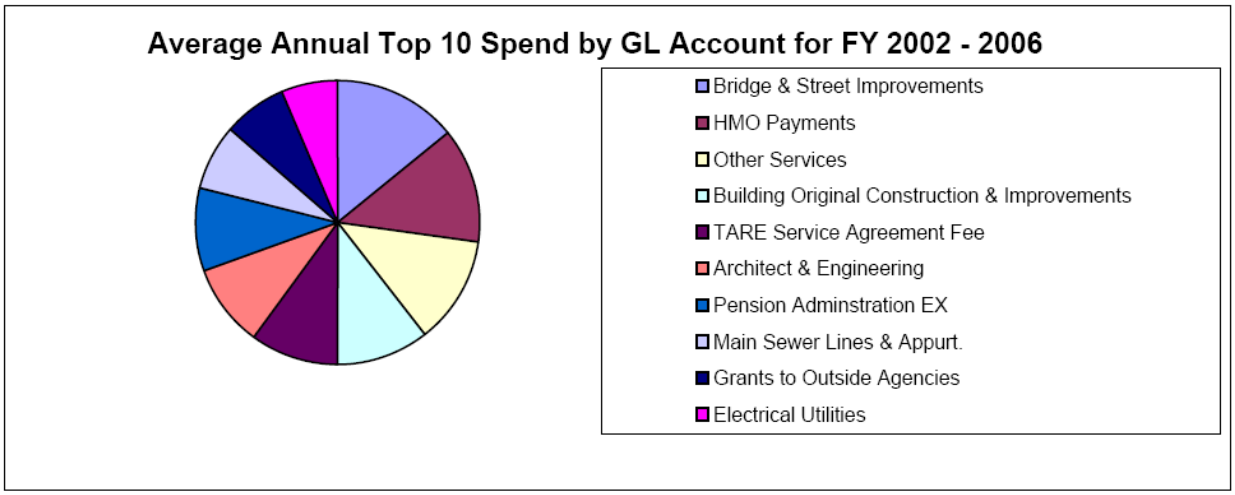
City Wide

General ledger account numbers accompany every expenditure made by the City.

Coding is somewhat general. For example, account number 5222101 represents office supplies, but does not detail whether paper, pencils, staplers etc. were purchased.

Attachment B – Top-10 Reports

The following reports were created by compiling data from the City's financial systems across all funds. These are examples of reports that could be accessed by management if a spend analysis system is implemented.

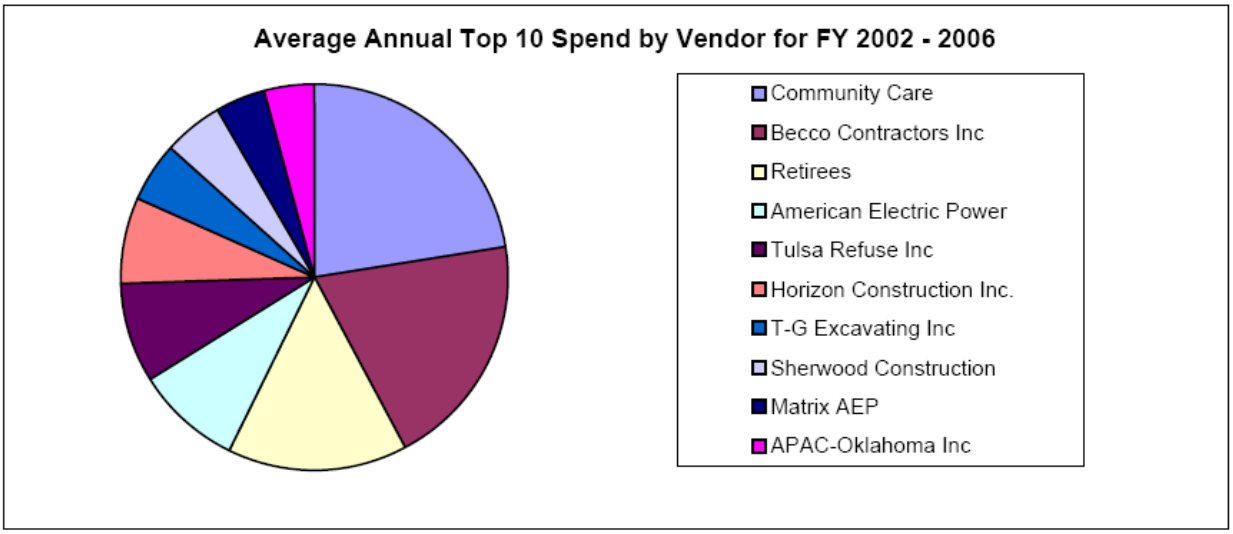


5453101	Bridge & Street Improvements	$	22,776,058.92
5337202	HMO Payments	$	21,440,920.06
5311901	Other Services	$	19,868,397.79
5452101	Building Original Construction & Improvements	$	17,119,479.56
5363301	TARE Service Agreement Fee	$	16,184,259.53
5451101	Architect & Engineering	$	15,299,482.83
5361501	Pension Adminstration EX	$	14,918,469.06
5455603	Main Sewer Lines & Appurt.	$	12,209,134.57
5388101	Grants to Outside Agencies	$	11,691,485.13
5315201	Electrical Utilities	$	10,452,634.68

Top 10 Average Change from FY 2002 - 2006

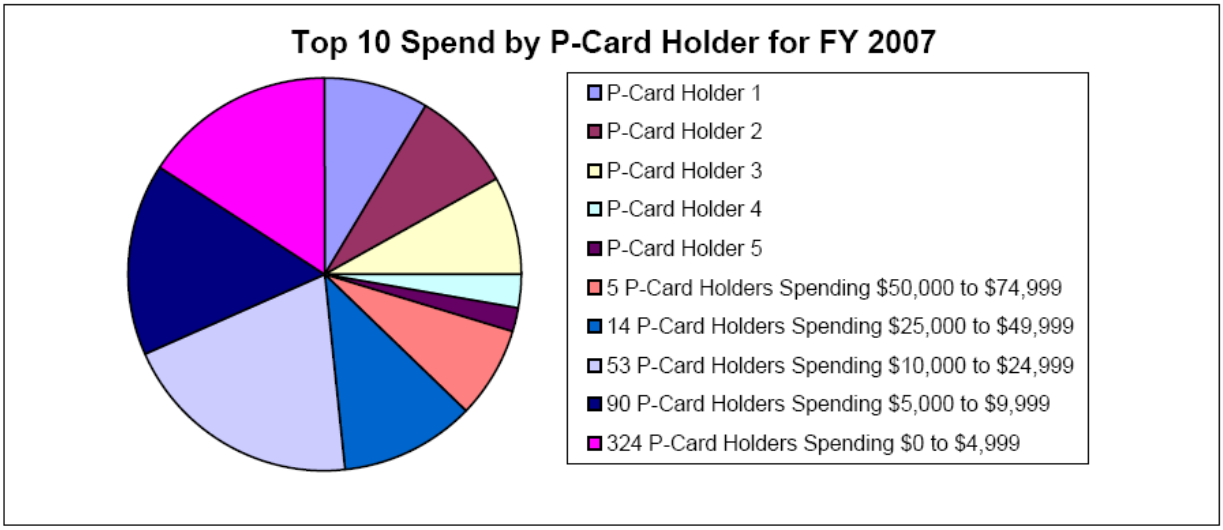
	Account Number	Account Description	2002 (a)	2003 (b)	2004 (c)	2005 (d)	2006 (e)	*Average change of a through e*
1	5455501	Stormwater Detention Pond	$2,101,137.54	$360,794.00	$83,118.45	$20,250.00	$2,333,360.78	2797%
2	5413501	CDBG Real Property Acquisition	$76,665.05	$1,648,795.00	$141,789.83	$1,155,086.44	$58,390.00	645%
3	5451301	Utility Relocation	$149,526.43	$1,118,363.00	$208,383.87	$160,077.81	$3,388,256.63	640%
4	5434101	Meters	$47,382.86	$148,080.00	$428,152.33	$5,666,797.57	$2,696,692.30	394%
5	5431501	Laboratory Equipment	$176,856.54	$15,983.00	$233,209.77	$88,568.30	$219,586.48	339%
6	5455602	Sewage Lift Stations	$125,911.43	$653,852.00	$330,774.97	$3,370,303.64	$1,862,414.01	311%
7	5321201	Election Expense	$207,169.89	$9,703.00	$99,986.41	$141,523.08	$463,513.88	276%
8	5413102	Abstract & Title Opinion	$112,084.65	$40,429.00	$108,019.99	$1,136,469.91	$174,883.00	243%
9	5388102	Outside Agency Admin Cost	$13,269.40	$110,215.00	$83,817.02	$286,965.78	$211,833.14	231%
10	5432301	Traffic Control Equipment	$57,788.35	$485,436.00	$1,074,276.22	$516,835.16	$1,111,126.06	231%

Account Number balance greater than $5000 in all five years.



Community Care	$ 13,840,231.92
Becco Contractors Inc	$ 12,116,131.44
Retirees	$ 9,334,889.04
American Electric Power	$ 5,359,949.65
Tulsa Refuse Inc	$ 5,173,865.21
Horizon Construction Inc.	$ 4,498,016.45
T-G Excavating Inc	$ 3,023,528.81
Sherwood Construction	$ 2,973,958.68
Matrix AEP	$ 2,670,244.40
APAC-Oklahoma Inc	$ 2,536,192.31

Note: Analysis of spend by vendor is difficult to attain. Each module that provides data to the general ledger has different vendor naming conventions. Full names of vendors are truncated by the general ledger. For example, the vendor Consolidated Plastic's name is listed as "Consolidat" by the general ledger. The vendor Consolidated Fleet Svc is also listed as "Consolidat". Establishment of data cleansing (Improvement Opportunity 4) analysis will be necessary to ensure accuracy of spend by vendor.



P-Card Holder 1	$ 354,120.05
P-Card Holder 2	$ 341,779.89
P-Card Holder 3	$ 331,103.06
P-Card Holder 4	$ 111,180.70
P-Card Holder 5	$ 79,541.74
5 P-Card Holders Spending $50,000 to $74,999	$ 313,076.58
14 P-Card Holders Spending $25,000 to $49,999	$ 455,697.76
53 P-Card Holders Spending $10,000 to $24,999	$ 809,578.61
90 P-Card Holders Spending $5,000 to $9,999	$ 653,145.67
324 P-Card Holders Spending $0 to $4,999	$ 650,490.26

Attachment C – Management's Response

CITY OF Tulsa
A New Kind of Energy.

MEMORANDUM
OFFICE OF THE MAYOR

DATE: January 6, 2009

TO: City Auditor Phil Wood

FROM: Amy Polonchek, Chief of Staff

SUBJECT: Response to Audit Report

Thank you for your audit report on expenditure analysis and for the opportunity to comment on its contents. We strongly support the idea of analyzing and managing how City funds are spent, and are committed to improving in this area. We will implement the audit recommendations as described below.

The mapping process provided in Attachment A is very useful. We appreciate this pioneering effort. We plan to use a similar process to centralize data for analysis.

Please note, while we appreciate the top spend information in Attachment B, readers should be cautioned that this data is difficult to interpret with only the summary information provided in the report. Providing context for purchasing decisions helps improve understanding. For example, some purchasing card holders are authorized for high-dollar expenditures because of the nature of the purchases made with the purchasing card. Also, data is more readily understood by its users when presented with full fund/account/center information, rather than only the commodity, service or other description.

Action Plan 1

1. Analyze existing spend data capabilities
2. Access all spend data sources

We have recently hired a consultant who began the initial analysis of our capabilities. The consultant will begin by working on mapping and moving expenditure data for analysis. Estimated completion date: March 31, 2009

Action Plan 2

3. Adopt a common transaction coding classification method
4. Establish efficient and repeatable data cleansing (accuracy checking)
5. Provide information to empower buyers to become commodity managers

We plan to initially identify a few commodity and service categories to assign to Purchasing Division employees for analysis. As staff reviews the transactions for these items, they will begin cleansing the data and clearing up coding issues. Staff will use the information for improving purchasing decisions.
Estimated completion date: June 30, 2009

Action Plan 3

6. Classify spending at a detailed level
7. Enhance core spend data with management information

Staff experience with managing expenditure data will enable implementation of the additional two improvements recommended by Internal Auditing. In addition implementation of this corrective action will require investment in technology. We will plan to include expenditure management capabilities in functions of a new financial system. Timing of this investment will depend on city-wide priorities.
Estimated completion date: June 30, 2012

cc: Mayor Kathy Taylor, Mike Kier, Ben Stout, Cathy Criswell