

City of Detroit

OFFICE OF THE AUDITOR GENERAL



**Memorandum On The Labor Characteristics
Of The City's Workforce**

October 2015

PREFACE

This Memorandum on the Labor Characteristics of the City's Workforce is the first published document of work performed during the Performance Audit of the City of Detroit Human Resources Department and the Limited Scope Performance Audit of the Office of the Chief Financial Officer. The Office of the Auditor General started the audit in April 2014, focusing on the period from July 2012 through December 2014.

As you can imagine, much has happened to the City since its emergence from bankruptcy, and the operational environment within departments is a rapidly changing landscape. With that in mind, we want to preface this document by stating that the information presented herein is a reflection of the state of affairs "at points-in-time" based on information gathered during the audit. We feel that the information is still relevant and reveals the underlying characteristics of the City's Workforce.

In April 2015, at the request of the Administration, we systematically backed off on the audit due to the time and resource constraints imposed by the City's pending implementation of the new Human Resource and Financial Enterprise Resource Planning (ERP) systems. We summarized the information and provided an overview to the Administration of this Memorandum. On August 4, 2015 we delivered the first draft to the Administration for their review and potential responses. On September 10, 2015, we again met with the Administration to discuss their concerns. We learned that some statements relating to the implementation of the new ERP Systems may not reflect the current state of operations. It was encouraging to learn that the Administration found value-add in this Memorandum and have used it as a "check-point" to make changes in operations reflective of our concerns.

We believe that the information contained therein is important and that the reader will benefit from a better understanding of the underlying characteristics of the City's Workforce.

We look forward to culminating this audit when the new ERP systems are fully implemented. Certainly, the City's advancements in technology and human resources has wide-spread value and benefits for both the Administration and general public.



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Mark W. Lockridge
AUDITOR GENERAL

MEMORANDUM

DATE: October 9, 2015

TO: Honorable City Council

FROM: Mark Lockridge, CPA *MLK*
Auditor General

RE: Memorandum on the Labor Characteristics of the City's Workforce

CC: Mayor Mike Duggan
Denise Starr, Director, Human Resources
John Hill, Chief Financial Officer
Beth Niblock, Chief Information Officer
Michael Hall, Deputy Director, Human Resources, Labor Relations
Civil Service Commission, City of Detroit

Attached for your review is our Memorandum on the Labor Characteristics of the City's Workforce. This Memorandum is based on audit work performed in conjunction with the Performance Audit of the Human Resources Department and the Limited Scope Performance Audit of the Office of the Chief Financial Officer.

We would like to thank the employees of the Human Resources Department and the Office of the Chief Financial Officer for their cooperation and assistance extended to us during this audit.

Copies of all of the Office of the Auditor General reports can be found on the City's Website: View City of Detroit Reports at <http://www.detroitmi.gov/How-Do-I/View-City-of-Detroit-Reports/Auditor-General-Audits>.

**Memorandum on the Labor Characteristics
Of the City's Workforce**

Table of Contents

	<u>Page</u>
EXECUTIVE SUMMARY	1
BACKGROUND	4
OVERVIEW OF THE CITY'S WORKFORCE	7
REVIEW OF LABOR AGREEMENTS	18
APPENDICES: Supplemental Information and Data	
APPENDIX A: City Of Detroit Current Payroll And Human Resource Systems	23
APPENDIX B: What Are Relational Databases?	27
APPENDIX C: Count Of Bargaining Union Codes Assigned To Labor Unions	28
APPENDIX D: Meeting The Needs Of Government Now And In The Future (Using Cloud Innovation...)	29
APPENDIX E: City Of Detroit Enterprise Resource Planning System Timeline	31
APPENDIX F Types Of Labor Agreements By Labor Union	32
APPENDIX G: List Of Labor Unions By Major Agencies And All Other Departments	33
APPENDIX H: Overview Of Contract Terms (Articles) In Master Agreements	34

EXECUTIVE SUMMARY

In April 2014, the Office of the Auditor General (OAG) initiated a Performance Audit of the Human Resources Department. The audit period is from July 2012 through December 2014. Through our initial risk assessment, we determined that the first phase of the audit would focus on the Centralized Payroll Division. In light of the restructuring of operations achieved by two Emergency Manager Orders (EMO) released in September 2014, we added a Limited Scope Performance Audit of the Office of the Chief Financial Officer (OCFO), Office of the Controller:

- EMO 40 - Order Restructuring the Human Resources Department;
- EMO 41 - Order Establishing Centralized Financial Management Organizational Structure.

Under EMO 41, the Chief Financial Officer transferred all positions performing the following functions to the OCFO:

1. Payroll and Payroll Administration;
2. Benefits Administration;
3. Unemployment Insurance Administration;
4. Workers' Compensation Administration.

The transfer of responsibility and authority to the OCFO also included all positions and the associated funding for positions performing payroll and payroll administration of the Detroit Police Department.

The purpose of this memorandum is two-fold and will:

- A. Highlight the labor and bargaining characteristics of the City's workforce;
- B. Appeal to the Administration to carefully consider the risk of long term project failure, resulting from carrying forward the same structural inefficiencies from our current systems into the new systems.

In highlighting the labor and bargaining characteristic of the City's workforce, we noted that there are many more labor agreements for the number of employees compared to Wayne County and the State of Michigan. Each agreement contains a number of articles which define the economic and non-economic conditions for employees. The great number of conditions exponentially puts greater demands on the Human Resource and Payroll staff and the system(s) to accurately pay employees and accrue benefits. During our work in accordance with the Emergency Manager Order No. 8 issued on August 20, 2013, we reported that there were over 40,000 thousand employee payroll deduction codes, of which, 10,000 codes are specific to the administration of medical benefits. Similarly, the City has over 2,000 'step codes' to handle pay and merit increases which were brought back under the new labor agreements. The number of step codes is expected to increase as departments across

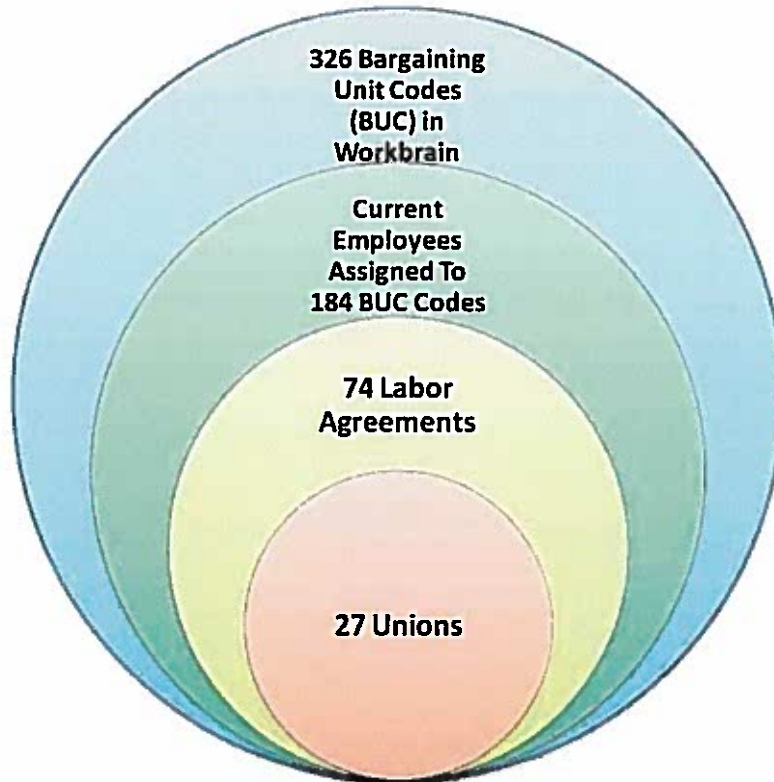
the City restructure and new job positions are created. This prompted a Department of Information Technology (DoIT) employee to quip, "We have way too many codes!"

The City is undertaking massive information technology projects that will transition the current human resources, payroll, and financial systems into the future of cloud technology. We agree that the new cloud technology and this transition "bends the cost curve" and is projected to save millions of dollars by lowering the total cost of IT operations. However, we are concerned that there is a lack of adequate project planning as it relates to the systems infrastructures.

We hope that the information presented in this memorandum aids in the planned transition from multiple payroll and human resource systems to a new robust, state-of-the-art, single, enterprise-wide system. The new system applications are a great opportunity for the City to streamline its information technology infrastructure and address or eliminate the underlying structural inefficiencies built into the current systems.

We explore our concerns in greater detail in this memorandum and begin with the overview of the City's labor environment in the diagram on the following page:

OVERVIEW OF THE CITY'S LABOR ENVIRONMENT



Bargaining Unit Codes In Workbrain

- Bargaining Unit Codes (BUC's) connect the employee to the terms negotiated by their union;
- There 326 Bargaining Unit Codes (BUCs) in Workbrain;
- One union has 70 and another union has 62 BUCs to represent its members
- See Appendix C for a full breakdown of BUC's by Labor Union.

Current Payroll

- Current Active Employees are in only 184 BUC's; the remaining 142 BUC's are not being used;
- 75.0% or 138 of these BUCs cover only 13.2% or 1,184 active employees and contractors;
- Each of these 138 BUCs have 30 or less employees; 67 BUC's have 5 or less employees.

Labor Agreements

- The City has 74 Labor Agreements:
 - 44 Master Agreements;
 - 22 Supplemental Agreements;
 - 8 Departments are still under City Employment Terms (CET's).
- See Appendices F and G for full breakdowns of Labor Agreements by Union and Departments.

Unions

- The City of Detroit negotiates with 27 unions for less than 8,000 unionized employees and contractors;
- Compared to the State of Michigan who negotiates with only 6 unions for over 33,000 unionized employees

BACKGROUND

The Human Resources Department Labor Relations Division (Labor Relations) is primarily responsible for the negotiation of all collective bargaining agreements. In addition, Labor Relations provides technical and professional support to all city departments and agencies to ensure consistent and equitable contract terms and their uniform application and interpretation throughout all agencies of the city. By means of skilled negotiation, cooperation, consultation, and other resolution techniques, Labor Relations is responsible for preventing or lessening any labor management disputes. Furthermore, Labor Relations is responsible for administering the health benefits for the city's active employees. Currently, the City has twenty-seven unions that represent both uniform and civilian employees.

As a result of the dire financial condition and cash flow crisis in 2012, the City implemented new labor agreements known as the "City Employment Terms or CET's". The Legislative Policy Division reported the following to City Council:

The CET agreements include non-economic and economic changes in union contracts for the purpose of improving the City's governmental operations through efficiencies primarily from work rule changes, potential outsourcing (with union bidding), and potential consolidation of services. In addition, the CET's include wage, health care and pension concessions, and design changes for the purpose of stabilizing the City's finances.

The CET's can be categorized into four basic types based on employee classification:

1. Uniformed police officers
2. Uniformed fire employees;
3. Civilian employees;
4. Seasonal employees.

Although the CET's were supposed to simplify the City's work rules and make them consistent for each bargaining unit, the implementation and entering the terms into the payroll system was difficult and time-consuming because some of the CET's varied in conditions which required more manual effort.

Most of the CET's ended when new labor agreements were negotiated during bankruptcy. The City negotiated with twenty-seven unions (27) resulting in seventy four (74) labor agreements governing "exclusively represented" employees, resulting in:

- Forty-four (44) Master Agreements;
- Twenty-Two (22) Supplemental Agreements,
- Eight (8) CET agreements that are still in force ^(A) ^(B).

^(A) The Detroit Water and Sewerage Department is still in negotiations and some of their bargaining units are still operating under CET's.

- (B) The Field Engineers union currently has two members; it is not included in the aforementioned list. During negotiations, the City did not negotiate a new contract with the group. During bankruptcy, the union had one employee that the City assumed would retire; however, the employee did not retire, and the City discovered an additional employee. This union is still governed by a CET.

Contract Negotiations

Labor Relations was minimally involved in contract negotiations during bankruptcy. This prompted one staff member to state that this resulted into a “trust issue” between Labor Relations staff and management. The staff person went on to say that:

Administering the newly negotiated “Coalition” contracts will be a challenge since we [the City] have never had a coalition contract before. For example, for Police and Fire, no one from the City’s Labor Relations Division was allowed to be there, it was only Jones Day*, which creates a challenge and a problem. We have to administer these contracts where there is distrust of how fair they really are to employees.

**Jones Day was retained in March 2013 as lead counsel to the City of Detroit in connection with its ongoing restructuring efforts and counseled and served the City throughout its landmark Chapter 9 bankruptcy case.*

The following information chronicles Labor Relation’s limited involvement in negotiations:

- Attorneys from Jones Day handled the actual negotiations while Labor Relations provided them with background information related to previous contract negotiations;
- The City conducted the first negotiations in three locations: the pension negotiations took place in Washington, DC, the health care negotiations took place in Lansing, Michigan, and the rest of the negotiations took place in Detroit;
- Overarching parameters of the negotiations were the US bankruptcy laws. The economic parameters during bankruptcy dictated Jones Day’s positions during negotiations. For example, the City’s economic position taken during the bankruptcy dictated the overtime language in the contracts;
- Unions that received more favorable contract terms were the ones that came to the negotiation table first to settle; these were the International Union of Operating Engineers (IUOE), Teamsters, and the United Automobile Workers (UAW);
- The coalition of unions (‘Coalition’) decided to follow the lead of the American Federation of State, County, and Municipal Employees (AFSCME), while the Police Officers Association of Michigan (POAM), which was not a part of the Coalition, decided to negotiate for the best interest of its members:
 - During the negotiations with the Coalition, the City and the unions were able to establish the universal parameters for Coalition members’ contracts. Once those parameters were established, individual Coalition members and the City would negotiate terms that were specific to each union’s members.

- The City changed its negotiating position in January 2014, and removed some items [concessions] from the negotiating table;
- Some bargaining units in the Detroit Water and Sewerage Department are still in contract negotiations.

OVERVIEW OF THE CITY'S WORKFORCE

As of May 2015, the City has approximately nine thousand active employees, including Personal Services Contractors (PSC's):

Breakout of the City's Workforce Active Versus Personal Services Contractors^{(A)(B)}



Sources: ^(A) City of Detroit, Human Resources Department, Payroll Reports, March 2015;
^(B) Per the Comprehensive Annual Financial Report for Year Ending June 30, 2014 the City reported 8,784 total Full Time Equivalents for 2014, and 8,912 for 2013.

Breakout of the City's Workforce Union Versus Non-Union Employees



Approximately 87% of the City's workforce is represented by bargaining unions and labor agreements:

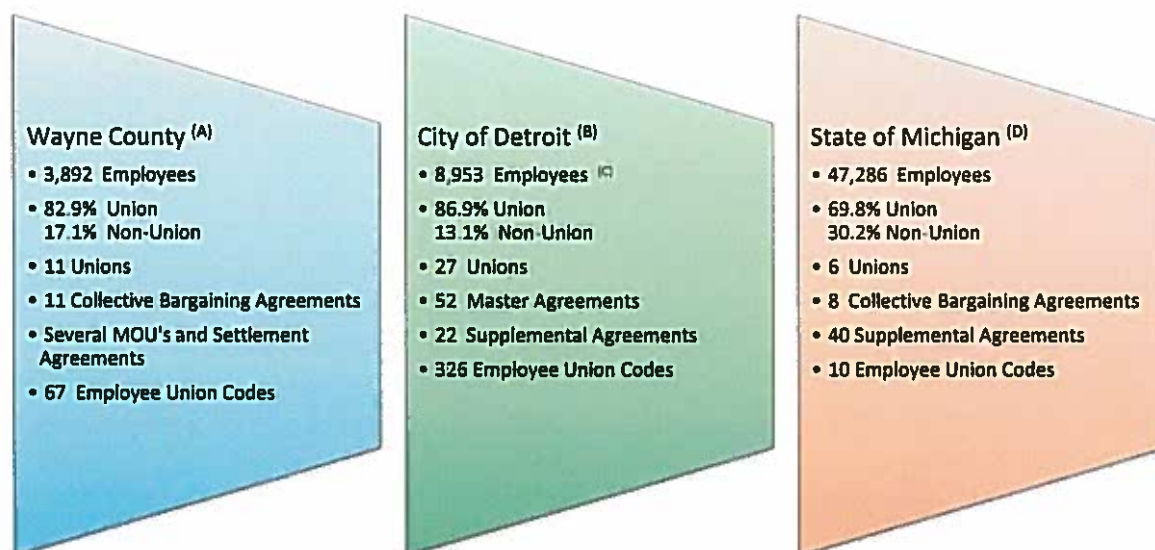
Bargaining Characteristic	Active Employees	Personal Services Contractors	Total Number of Employees*	Percentage of Total
Union Employees	7,618	161	7,779	86.9%
Non-Union Employees	930	244	1,174	13.1%
TOTALS	8,548	405	8,953	100.0%

*Note: For purposes of this report, unless otherwise noted, 'Employees' include both Active Employees and Personal Services Contractors.

The employees are represented by twenty-seven bargaining unions:

City of Detroit Bargaining Unions	
Amalgamated Transit Union, AFL-CIO	Detroit Police Officers Association
American Federation of State, County, and Municipal Employees (AFSCME)	Detroit Senior Water Systems Chemists Association
Assistant Supervisors of Street Maintenance and Construction	Emergency Medical Service Officers Association
Association of City of Detroit Supervisors	International Union of Operating Engineers (IUOE)
Association of Detroit Engineers	Michigan Building and Construction Trades Council, AFL-CIO
Association of Municipal Engineers	Police Officers Association of Michigan (POAM)
Association of Municipal Inspectors	Sanitary Chemists and Technicians Association (UAW)
Association of Professional and Technical Employees (APTE)	Senior Accountants, Analysts, and Appraisers Association (SAAA)
Association of Professional Construction Inspectors	Service Employees International Union (SEIU)
Department of Transportation Foremen's Association of America	Supervisor's Chapter of the DOT Foreman's Association
Detroit Fire Fighters Association	Teamsters
Detroit Income Tax Investigators Association	United Automobile Workers (UAW)
Detroit Police Command Officers Association	Utility Workers Union of America
Detroit Police Lieutenants and Sergeants Association	

The following diagram compares Wayne County, the City of Detroit, and the State of Michigan workforces:



Sources: (A) Wayne County Personnel/Human Resources Department (June 2015);

(B) City of Detroit, Human Resources Department, Payroll Report (May 2015);

(C) Total City Employees include 8,548 Active Employees and 405 Personal Services Contractors;

(D) State of Michigan Annual Workforce Report for Second Quarter Fiscal Year 2014-2015 (March 2015).

This comparison to Wayne County and the State of Michigan workforce's, reveal that the City has:

- Only 2.3 (or 230%) more employees than Wayne County, but 6.7 (or 673%) times more labor agreements;
- 81% fewer employees than the State of Michigan, but negotiates with 4.5 (or 450%) times more unions;
- 1.5 times (or 26) more labor agreements than the State of Michigan, even though the State has 5.3 times more employees;
- 4.9 (or 487%) times more codes than Wayne County, and 32.6 (or 3,260%) times more codes than the State of Michigan used to identify the bargaining unit of an employee.

Current Payroll

As of May 2015, 91.7% of the City's employees are paid through the 40+ year old Payroll Personnel System known as, "PPS"; and only 8.3%, or 747 employees were converted to the Oracle-based Human Resource System (HRMS) system. *(See **Appendix A** for more information on the **City of Detroit Current Payroll and Human Resource Systems.**)*

Based on a comparison of the payroll reports from PPS and Oracle, we found three employees who were active in payroll systems:

- Two employees were actually paid out of Oracle, but continue to receive "zero dollar" checks from PPS;
- Per HR, the other employee is "not being paid out of Oracle but is paid out of PPS."

The OAG requested an explanation from Human Resources and received the following response relative to why one of the employees might be active in both systems:

I don't know why they would appear to be active in both systems. I'm assuming Payroll forgot to inactivate them in one of the systems. This can happen when we are trying to manually maintain records in multiple payroll and timekeeping systems.

Bargaining Units and Union Codes

Bargaining Unit Codes (BUC's) are the "DNA" of the payroll and employee benefit systems and connect the employee to both economic and non-economic conditions negotiated by their union.

Labor Relations is responsible for establishing bargaining unit codes and initiating all changes in the payroll system related to labor agreements.

According to the PPS Manual, dated February 1977, there were 143 BUC's coded in the system. Today, the City has between 279 and 326 BUC's depending on who is reporting. According to the list from Labor Relations, there are 299 bargaining codes with 39 identified as inactive. However, as reported by DoIT, the number of bargaining codes in the time and attendance system – Workbrain – differs from Labor Relations' list:

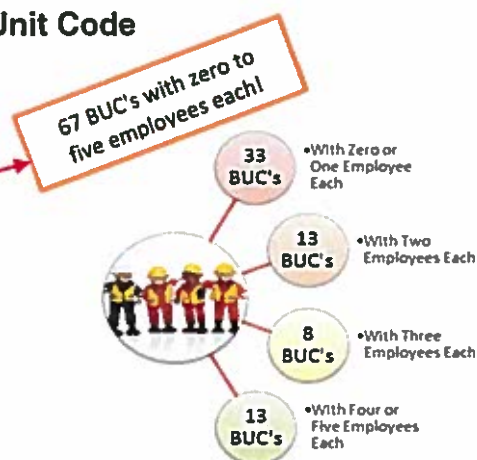
- During the CET implementation, there were 279 BUC's in Workbrain;
- Currently (as of August 2014), there are 326 BUC's in Workbrain.

The BUC's are "one-dimensional" in nature because PPS is a flat-file database, and codes have to be unique to identify combination of conditions. Conversely, Oracle is a "relational database" and is designed to use one identifier for each condition. This structure significantly reduces the duplication of information as each condition is listed or stored only once in the database. A relational database supports more flexible and simplified reporting. The City, however, continued to use the existing PPS structure for BUC's in Oracle HRMS. (See **Appendix B** for more information on **What are Relational Databases?**)

As mentioned previously, the City uses 326 bargaining unit codes to identify its employees. Even more alarming is the fact that 75% of the BUC's represent less than 14% of the City's employees. Included in this group are sixty-seven BUC's that have less than five employees in the BUC. The table below details the number of employees in the BUC's:

City's Workforce by Bargaining Unit Code

BUC's Grouped by the Number of Employees In Each BUC	No. of Active Employees and Contractors in the Group of BUC's	% of Active Employees and Contractors in the Group of BUC's	Total No. of Bargaining Unit Codes in the Group of BUC's	% of Active Bargaining Unit Codes
0-5	137	1.5%	67	38.4%
6-10	197	2.2%	24	13.0%
11-15	307	3.4%	24	13.0%
16-20	113	1.3%	6	3.3%
21-25	205	2.3%	9	4.9%
26-30	225	2.5%	8	4.3%
Subtotal BUC's with Less Than 30 Employees Each	1,184	13.2%	138	75.0%
31-40	138	1.5%	4	2.2%
41-50	405	4.5%	9	4.9%
51-60	164	1.8%	3	1.6%
61-70	133	1.5%	2	1.1%
71-80	225	2.5%	3	1.6%
81-90	258	2.9%	3	1.6%
91-100	383	4.3%	4	2.2%
>100 <=200	1,150	12.8%	8	4.3%
>200 <=300	930	10.4%	4	2.2%
>300 <=400	688	7.7%	2	1.1%
>400 <=500	-	0.0%	-	0.0%
>500 <=1000	1,635	18.3%	3	1.6%
>1000	1,660	18.5%	1	0.5%
Subtotal BUC's with Greater Than 30 Employees Each	7,769	86.8%	46	25.0%
TOTAL ALL EMPLOYEES	8,953	100.0%	184	100.0%



The one-dimensional structure of the BUC's has led to a proliferation on codes created to represent employees. The following examples are from the list of BUC's in Workbrain. They illustrate how multiple codes are used to identify groups of employees represented by the American Federation of State, County, and Municipal Employees union (AFSCME):

1100 AFSCME - Non-Supervisory - Council 25

1035 AFSCME - Supervisory Local 2394 - Municipal Parking
 1045 AFSCME - Supervisory Local 2394 - Water and Sewerage
 1050 AFSCME - Supervisory Local 2394 - Zoological Institute - Unit E
 AFSCME - Supervisory Local 2394 - Information and
 1060 Technological Services and Employment and Training - Unit D
 AFSCME - Supervisory Local 2394 - Senior Emergency Service
 1065 Operators
 1070 AFSCME - Supervisory Local 2394 - Elections - Unit E
 AFSCME - Supervisory Local 2394 - Building and Safety
 1090 Engineering - Unit H

1010 AFSCME - Supervisory Local 2394 - Recreation - Unit A
 1040 AFSCME - Supervisory Local 2394 - Recreation - Unit B
 AFSCME - Supervisory Local 2394 - Recreation - Forestry and
 1080 Landscape Foremen - Local 1206
 AFSCME - Non-Supervisory - Local 836 - Recreation -
 1500 Professional

*What do these all
have in common?*

YES - AFSCME!
*In total, there are seventy
BUC's to represent
AFSCME members.*

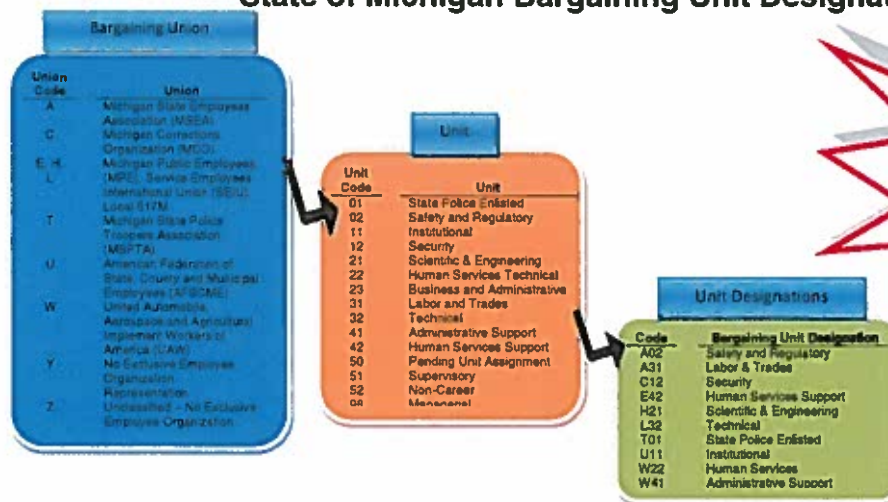
All in all, there are seventy different BUC's to identify members of AFSCME, and there are sixty-two different codes to identify members of the Michigan Building and Construction Trades Council (MBTC). (See **Appendix C** for the **Count of Bargaining Unions Codes Assigned To Labor Unions.**)

By contrast, the State of Michigan uses a simple two-part identifier to associate an employee to a union or to a non-union status. This structure is analogous to a relational database type structure:

- The union code identifies the employee organization that by an election process has won recognition as the exclusive bargaining agent for the unit; non-exclusively represented employees are identified by two union codes.
- The unit code represents a particular grouping of job classifications having related duties as established by the definition of the unit.

By using a combination of three categories (or types of codes), the State classifies its entire workforce of 47,286 employees in just ten bargaining unit designations!

State of Michigan Bargaining Unit Designations



**WOW! Only ten
codes to classify
47,286 employees**

Future Payroll

As reported in the City's Comprehensive Annual Financial Report for year ending June 30, 2014 and as part of the implementation of the \$1.7 billion program of reinvestment initiatives contained in the Plan of Adjustment.

The City has begun a process to replace its old DRMS (Detroit Resource Management System) system with a new financial management system. This process is referred to internally as "Fast Track" and will result in the implementation of modern Finance and Human Resource systems. These systems are cloud based (hosted environments where software is purchased as a service).

It was noted in a White Paper by the Center for Digital Government, that "...few technologies have the same power to transform government operations, lower costs and improve service delivery..." as cloud technology. The writers stressed that finding a provider that can handle all your needs now and into the future is key in migrating to cloud technology. *(See Appendix D for excerpts from the White Paper: Meeting the Needs of Government Now and in the Future, Using Cloud Innovation to Gain Organizational Agility, Cost Control, and Efficiency.)*

The City's new ERP solution for its financial management and human resource/payroll activities are two cloud-based software applications:

1. **Oracle's Fusion Financial Management (FMS: Oracle Cloud)** is a complete and integrated financial management solution. The City purchased the following modules: Financial Management, Procurement, Sourcing and Inventory, Cash and Treasury Management, Planning and Budgeting, Project Portfolio Management, and Projects and Grants;
2. **Ultimate Software (UltiPro)** is a unified "Human Capital" solution and includes both Human Resource and Payroll applications. The City purchased the following modules: Core Human Resource, Payroll, Benefits Management, Time and Attendance, Talent (including Recruiting, Onboarding, Performance Management, Compensation Management), and Business Intelligence. *(See Appendix E for the City of Detroit Enterprise Resource Planning System Timeline as of May, 2015. At the time of this memorandum, the Administration stated that it will publish a revised timeline pending completion of a project review.)*

UltiPro, like Oracle, also utilizes a relational database structure, with many data sets. At its foundation are various code sets and tables that are available to capture all human resource and payroll related details of the workforce:

- (130) Code Tables;
- (59) Setup Tables;
- (21) Code for Business Rules;

If the City adopted a similar structure as the State of Michigan, and used one code to represent a union, in theory, only twenty-seven codes would be needed to represent the twenty-seven bargaining unions that we have now. Other identifiers, codes, code sets, and code tables could be assigned to departments, work shifts, contract terms and conditions, etc. Cost centers would remain the same as defined in City's financial systems. The following table reflects a simplified example of a relational database structure that could be used to represent unions, employees, and the related economic benefits:

Union Code	Department/ Cost Center*	Type	Payroll	Shift	Economic Conditions
<ul style="list-style-type: none"> • One Code for each Union • Twenty-seven union codes 	<ul style="list-style-type: none"> • Police • Fire • DPW • DDOT <p>*Cost Center is the same cost center structure in the Oracle ERP Financial Systems.</p>	<ul style="list-style-type: none"> • Supervisor • Non-Supervisor, • Administrative 	<ul style="list-style-type: none"> • Hourly • Salaried • Personal Services Contractor 	<ul style="list-style-type: none"> • Eight hours • Twelve hours • Twenty-four hours/seven days 	<ul style="list-style-type: none"> • Per Master Agreement Regular • Per Master Agreement Seasonal • Terms per Supplemental Agreements • Terms per CET's

The UltiPro software has the capability to accommodate restructuring and reduce the number of codes used to relate unions, employees, with their economic benefits. However, the City has opted to "fast track" the implementation and retain the current coding structure. According to the implementation team, "The Bargaining Unit Codes and related structure will migrate over to UltiPro as they are today. And as a general rule, the fewer translations we have between coding structures today and after go-live, the better."

As mentioned previously the City has 40,000 thousand employee payroll deduction codes and over 2,000 step codes to handle pay and merit increases. Some code sets will increase in number as departments are restructured and new job positions are created. For example, in the Office of the Chief Financial Officer, three new salary tables have been created which include twenty-six new pay grades, each with minimum, mid-point, and maximum salary. Also, each pay grade has ten different "step levels/amounts" which could potentially add up to 260 additional step codes.

A Note on Agency/Department Codes

Recently, departments have been asked to provide updated information on employees via an "Ultipro Data Survey." The request from Human Resources is indicative of the City carrying forward old codes into the new ERP system. In the data file sent to OAG, the agency number does not match the agency code (or department number) in the DRMS financial system. It appears that UltiPro is being populated with the old, one-data field code originally assigned to OAG in the PPS system:

Agency Code Listing From PPS Systems Manual

PPS
Personnel System
City of Detroit

SECTION 11117
Agency Code
This is a two digit number to identify a specific agency or department. It is the same number used in FICE. In the event that a form provides three positions for an agency number, code fill the first position by the left.

AGENCY CODES

Agency Code	Agency Title
01	Airport
02	Auto
03	Budget
04	Buildings and Safety Engineering
05	City Engineering
06	City Center
07	City Council
08	City Planning Commission
09	City Planning Commission
10	City Planning Commission
11	City Planning Commission
12	City Planning Commission
13	City Planning Commission
14	City Planning Commission
15	City Planning Commission
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59	City Planning Commission
60	City Planning Commission

Per UltiPro Data Survey

DEPARTMENT
70 - AUDITOR GENERAL

PPS
Personnel System
City of Detroit

SECTION 11117
Agency Code
This is a two digit number to identify a specific agency or department. It is the same number used in FICE. In the event that a form provides three positions for an agency number, code fill the first position by the left.

AGENCY CODES

Agency Code	Agency Title
70	Airport
71	Auto
72	Budget
73	Buildings and Safety Engineering
74	City Engineering
75	City Center
76	City Council
77	City Planning Commission
78	City Planning Commission
79	City Planning Commission
80	City Planning Commission
81	City Planning Commission
82	City Planning Commission
83	City Planning Commission
84	City Planning Commission
85	City Planning Commission
86	City Planning Commission
87	City Planning Commission
88	City Planning Commission
89	City Planning Commission
90	City Planning Commission

Per DRMS Financial

DEPARTMENT NO.	DEPARTMENT NAME
50	Office of the Auditor General

As a matter of comparison, none of the current thirty-three agency codes in the current Oracle DRMS Financials match the old agency codes in PPS as detailed in the following table:

Comparison of Agency Codes in PPS to Agency Codes in DRMS

Agency Codes Per PPS		Agency Codes Per Oracle DRMS	
Agency No.	General City Agencies	Agency No.	General City Agencies
06	Budget Department	12	Budget Department
22	Environmental Protection-Maintenance	19	Department of Public Works
24	Finance Department	23	Finance Department
26	Fire Department	24	Fire Department
28	Health	25	Department of Health and Wellness Promotion
44	Personnel	28	Human Resources Department
35	Human Rights	29	Human Rights Department
20	Data Processing	31	Information Technology Services Department
36	Law	32	Law Department
38	Mayor's Office	33	Mayor's Office
N/A	N/A	36	Housing and Revitalization Department
48	Police	37	Police Department
54	Public Lighting	38	Public Lighting Department
56	Recreation	39	Recreation Department
46	Planning	43	Planning Department
N/A	N/A	45	Department of Administrative Hearing
64	Youth (General Services Department in Current PPS Reports)	47	General Services Department
Agency No.	Legislative Agencies	Agency No.	Legislative Agencies
70	Auditor General	50	Office of the Auditor General
79	Zoning Appeals Board	51	Board of Zoning Appeals
74	City Council	52	City Council
78	Ombudsman	53	Ombudsman
N/A	N/A	54	Inspector General
72	City Clerk	70	City Clerk
76	Election Commission	71	Department of Elections
Agency No.	Judicial Agencies	Agency No.	Judicial Agencies
80, 82, 84, 86	Recorder's Court: Criminal, Jury, Psychiatric, Traffic & Ordinance	60	36th District Court
Agency No.	Other Agencies	Agency No.	Other Agencies
94	Non-Departmental	35	Non-Departmental
Agency No.	Enterprise Agencies	Agency No.	Enterprise Agencies
02	Airport	10	Airport
08	Buildings and Safety Engineering	13	Buildings and Safety Department
60	Transportation	20	Department of Transportation
40	Municipal Parking	34	Municipal Parking Department
62, 63	Water Department	41	Water Department
62, 63	Sewerage Department	42	Sewerage Department
92	Library	72	Library

A Note Concerning the Accounting for Payroll and Employee Benefits

As noted earlier, the current financial system – DRMS – is a relational database. However, the City's accounts that capture costs are not efficient as to how costs are captured in the financial systems.

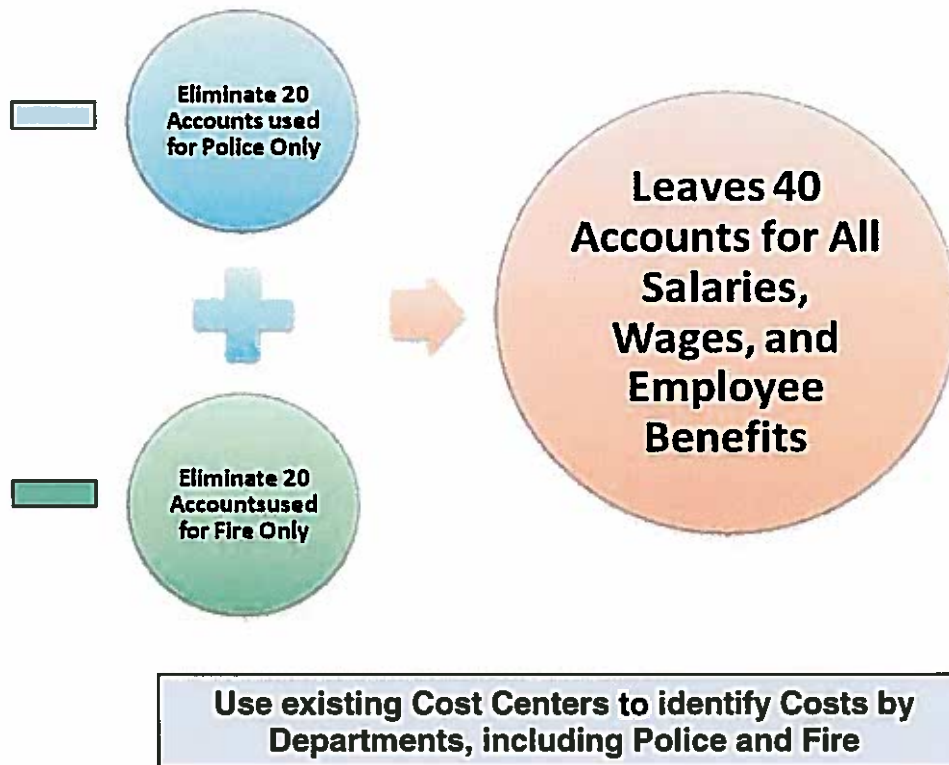
For example, based on an analysis of the accounts in DRMS (also known as Objects Codes) that capture salary, wages, and employee benefits, we determined that at least half of the eighty accounts are superfluous and could be eliminated:

Current Accounts or Object Codes For Salary, Wages, and Employee Benefits

OBJECT	DESCRIPTION	OBJECT	DESCRIPTION
601100	Salaries-Full Time	603310	Empl Ben-Fica Med Fire-Unif
601105	Salaries-Full-Police Unif	603315	Empl Ben-Fica-Part Time
601110	Salaries-Full-Fire Unif	603400	Unemployment
601125	Salaries-Vacation Time	603405	Workers Compensation
601130	Salaries-Holiday Pay	603410	Workers Compensation-Medical-Police
601200	Salaries-Part Time	603415	Workers Compensation-Medical-Fire
601300	Salaries-Overtime	603900	Empl Ben-Miscellaneous
601305	Salaries-Overtime-Police Unif	603905	Empl Ben-Misc Police Unif
601310	Salaries-Overtime-Fire Unif	603910	Empl Ben-Misc-Fire Unif
601400	Salaries-Shift Premium	604100	Other Comp-Unused Sick Leave
601405	Salaries-Shift Prem-Police Unif	604105	Other Comp-Unused Sick Leave-Police Unif
601410	Salaries-Shift Prem-Fire Unif	604110	Other Comp-Unused Sick Leave-Fire Unif
601500	Salaries-Holiday Premium	604200	Other Comp-Longevity
601505	Salaries-Holiday Prem-Police Unif	604205	Other Comp-Longevity-Police Unif
601510	Salaries-Holiday Prem-Fire Unif	604210	Other Comp-Longevity-Fire Uniform
601600	Salaries for Employee Illness	604305	Other Comp-Employee Bonus
601605	Salaries-Employee Illness 60%	604310	Other Comp-Employee Bonus-Fire Unif
601610	Salaries-Employee Illness-Police	604505	Other Comp-FMLA-General City
601615	Salaries-Employee Illness-Fire	604900	Other Comp-Other Special Prem
601700	Salaries-Contin-Job Ill/Injury	604910	Other Comp-Other Spec Prem Police Unif
601705	Salaries-Contin-Job Ill/Injury Police	604915	Other Comp-Other Spec Prem-Fire Unif
601710	Salaries-Contin-Job Ill/Injury-Fire	604920	Other Comp-Suppl Unemployment Benefits
602100	Wages-Full Time	605100	Group Life Insurance
602200	Wages-Part Time	605105	Group Life Insurance - Police
602300	Wages-Overtime	605110	Group Life Insurance - Fire
602400	Wages-Shift Premium	605205	Eye Care-Active
602500	Wages-Holiday Premium	605210	Eye Care-Retrants
602600	Wages-Employee Illness	605215	Eye Care Active - Police
603100	Empl Ben-Pensions	605220	Eye Care Active - Fire
603110	Empl Ben-Pensions-Police Unif	605500	Income Protection
603115	Empl Ben-Pensions-Fire Unif	605620	Dental Active
603120	Non-Actuarial Pension	605625	Dental Active-Police
603125	Pension Plan (DBP/DCP)	605630	Dental Active-Fire
603126	Pension Plan (DBP/DCP) - Police	605640	Dental Retired
603127	Pension Plan (DBP/DCP) - Fire	605700	Health Care Reserve - Civilian
603200	Empl Ben-Hospitalization	605705	Health Care Reserve - Police
603205	Empl Ben-Hosp Police Unif	605710	Health Care Reserve - Fire
603210	Empl Ben-Hosp-Fire Unif	605720	Retiree Health Care - Civilian
603220	Empl Ben-Hosp General Retiree	605725	Retiree Health Care - Uniform Police
603300	Empl Ben-Social Security	605730	Retiree Health Care - Uniform Fire
603305	Empl Ben-Fica Med Police-Unif		

Does the City really
need 80 Object
Codes to account
for Salary, Wages,
and Employee
Benefits?

There are twenty specific accounts for Police personnel and twenty specific accounts for Fire personnel. If the City discontinued use of specific accounts and used the same account for all personnel, it could cut the object codes used to identify salary wages and employee benefits in half. That's a 50% reduction in these accounts alone! The existing cost center structure should be used to capture expenses by departments. The diagram below illustrates our point:



Our Concerns

We understand and agree with the need for the City to adhere to the Plan of Adjustment with respect to “fast tracking” the implementation of restructuring and reinvestment initiatives. According to the Administration, the Ultimate Pro software application presented the best solution and “has the capability to handle the complex nature of [the City’s] time collection needs” and “had the strongest payroll engine functionality.”

The current implementation is being led by a team of consultants along with assigned members from the Human Resources Department, and the Payroll and Payroll Audit Division’s of the Office of the Chief Financial Officer. However, this implementation is different from the previous implementations, whereby employees were taken off from their regular jobs and dedicated their time solely to the project. Current employees, who are also team members, work on the implementation project in addition to maintaining their normal current job responsibilities. Several staff members stated that they are being stretched thin due to all of work requirements.

We are concerned that the carry-forward of current one-dimensional code structures will continue to burden systems and staff, along with maintaining inefficiencies in human resource and finance activities. We hope that the City has planned to make sure that old codes from PPS are converted to match the codes in the financial system promoting a truly integrated ERP system. In conclusion, it is our hope that the Administration will take the time to properly plan and execute an ERP system that is a more flexible, user-friendly, relational database structure, and thereby eliminating the underlying structural inefficiencies in the current systems.

REVIEW OF LABOR AGREEMENTS

The OAG reviewed the details of the City's labor agreements for the purpose of building a framework for the audit of the Human Resource, Labor Relations, and Payroll activities. Labor agreements contain both economic and non-economic provisions. Labor Relations classify the following provisions (contract articles) as economic items:

Labor Agreement Economic Items	
Wages and Bonus Payments	Funeral Leave
Work Week, Work Day	Jury Duty
Shift Premium	Clothing and Uniform Allowance
Overtime	Private Car Mileage Reimbursement
Step Increases	Tuition Reimbursement
Merit/ Performance Payments	Hospitalization, Medical, Dental and Optical Care Insurance
Holidays and Excused Time Off	Death Benefits and Life Insurance
Sick Leave	Retirement
Vacations	Unused Sick Leave on Retirement

We compared the recently negotiated Master and Supplemental Agreements to the previously implemented City Employment Terms (CETs). During the comparison between the Master and Agreements and the CET's, we noted the following:

- There are four types of CET's: (1) Uniformed police officers, (2) Uniformed fire employees, (3) Civilian employees, and (4) Seasonal employees;
- Master Agreements can be categorized as (1) Coalition contracts which are based on AFSCME contracts, and (2) Teamsters, IUOE, Police, Fire, and other contracts where the unions negotiated as independents.

As previously mentioned, the City negotiated with twenty-seven unions (27) resulting in seventy four (74) labor agreements governing "exclusively represented" employees, resulting in:

- Forty-four (44) Master Agreements;
- Twenty-Two (22) Supplemental Agreements,
- Eight (8) CET agreements that are still in force

(See Appendix F for the Types of Labor Agreements by Labor Union, Appendix G for a List of Labor Unions by Major Agencies and All Other Departments, and Appendix H for an Overview of Contract Terms (Articles) in Master Agreements.)

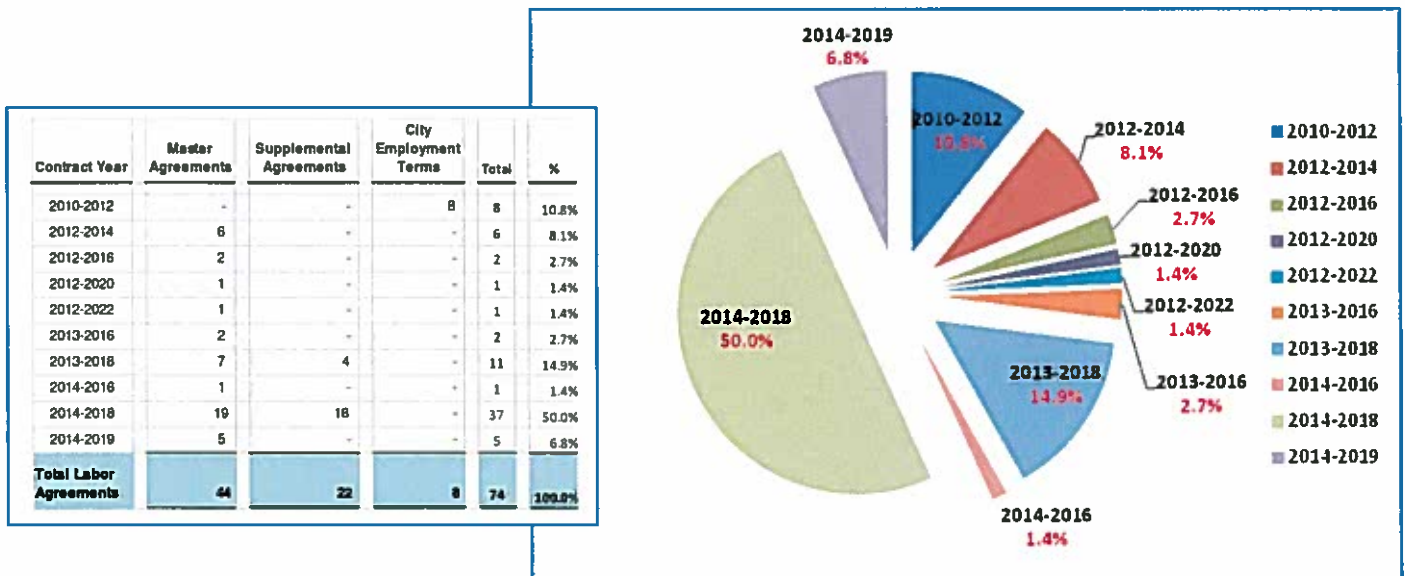
Contract Periods

The unions negotiated various contract periods and only half of the current labor agreements have the same contract period. Contract periods range from beginning in 2012 to ending as far out as 2022:

- The Association of Professional Construction Inspectors contract period is 2012 to-2020;
- The IUOE Local 324 - Operating Engineers, Detroit Principal Clerks and Park Management Units contract period is from 2012 to 2022.

The illustration and table below summarizes the various contract periods:

Contract Periods of the City's Current Labor Agreements



Contract Terms

Our analysis revealed new or conflicting language in some of the terms (articles) in the labor agreements:

- For **holiday pay**, both the CET's and Master Agreements have the same rule, which is the employee is required to work the day before and after the holiday in order to be paid for the holiday:
 - The exception is if the employee has requested a vacation day before or after the holiday, and management approved the vacation a week prior to the holiday;
 - The language is confusing on the rates to be paid (i.e. seven holidays are paid at time plus time-and-one-half (premium time) if worked, plus five 5 days excused time, no swing holidays, holiday pay for days, straight pay if worked, straight time pay for above holidays, and allows departmental discretion to pay or grant time off.)

- B. For **overtime payment**, the CET's required an employee to work forty hours before the employee would receive overtime pay of time-and-one-half. In the previous collective bargaining agreements, the City would pay overtime on a daily basis for all hours over eight hours at time-and-one-half; however, if an employee worked all seven days, the employee will be paid double time for the seventh day. The following overtime language taken from the new master agreements include both daily overtime and the forty-hour guideline:

Employees – Time and one-half [one hundred and fifty percent (150%)] will be paid to hourly-rated employees for all hours worked over forty (40) in one (1) service week inclusive of a seventh day or a holiday and on a daily basis for all hours worked in excess of an employee's normal work day.

The Administration acknowledged that the language is confusing. The City has elected to interpret the language to indicate daily overtime was reinstated without considering the forty-hour stipulation, stating that the payment of daily overtime supersedes the forty-hour provision. We noted that the State of Michigan has similar language in its agreements, but used the word "or" instead of "and" as was used in the City's agreements.

- C. The current Master Agreements have eliminated the payment of double time on the seventh day worked;
- D. The CET's eliminated merit/step increases; however, the current Master Agreements reinstated merit/step increases. As noted earlier, the City is in the process of adding over 2,000 step codes to the new Human Resource/Payroll system;
- E. The CET's eliminated "**me too**" clauses; however, some of the new Master Agreements include veiled "**me too**" clauses under the **Most Favored Nations** article. Some of the contracts require the City and unions to negotiate wage and benefit clauses if another union received favorable terms. Other contracts focused only on insuring that benefit terms are equal across all contracts.
- F. The CET's required unions to reimburse the City for **wages paid for union officials** with full time off. This clause was to force full time off employees to return to actual City work assignments. In the contract articles detailing **Union Representation** in the Master Agreements, union officials do not have to reimburse the City for the processing of grievances and negotiations. However, unions are still required to reimburse the City for the wages paid for full time off employees. We were unable to determine how or if:
- Union representatives are tracked in the payroll system;
 - Hours spent on union business along with the reimbursement of the wages paid to the union representatives is being determined;
 - Labor Relations admitted that they did not know what the term "**un-worked overtime**" meant and that it was a term that came from Jones Day during the negotiations.

G. Per language in the agreements, the City is required to make public the labor agreements by posting them on its website. We found that seventeen contracts were not yet posted:

- Eight Master Agreements;
- One Supplemental Agreement;
- Eight (or all of the) CET's that are still in force.

We found different language, sometimes vague or conflicting language in the following articles in Supplemental Agreements for specific agencies or departments:

- H. Municipal Parking Department – Teamsters Local 214: Overtime – the agreement did not explain the term “scheduled overtime,” and it is subjective how the department implements this condition;
- I. General Services Department – Teamsters Local 214: Deviation from Seniority – the contract did not explain the concept, and the contract was silent as to how the department and union implemented the concept.
- J. General Services Department – Teamsters Local 214: Promotions – the language in the Supplemental Agreement appears to conflict with the Master Agreement Article 18 – Transfers and Promotions. This language allows Teamsters member to have additional “bumping rights” not granted to other employees;
- K. General Services Department – Teamsters Local 214: Downbidding – the Supplemental Agreement contract language seems to conflict with the Master Agreement Article 15 – Reductions in Force, Layoff, Demotion, and Recall. Again, this language allows Teamsters member to have additional rights not granted to other employees;
- L. Department of Public Works – Teamsters Local 214: Overtime – the Supplemental Agreement did not explain the concept of “normal seniority and rotation requirements” in conjunction with the lining and stenciling tasks at the Traffic Sign Shop;
- M. Detroit Police Department – Teamsters Local 214: Work Schedules – According to Labor Relations, the contract language is specific to Animal Control Officers and stipulates the procedure for the department to assign emergency overtime to employees. If the employee refuses the assignment, the department will note the employee worked but will not pay the employee for the time and if another emergency overtime situation occurs, the employee will not be eligible to work until the department has exhausted the list.
- N. Recreation – AFSCME Local 2394: Vacations are limited to one week during their peak period between May through September.

Our Concerns

According to DoIT, changes affecting economic conditions have to be put into the Personnel Payroll System (PPS) in time for the system to properly calculate vacation accruals, balances, etc.; this is critical for the City's year-end financial processing and close activities. However, as of April 2015, DoIT had only received seven Contract Summaries from Labor

Relations; which they use to interpret the changes and make code changes in PPS. In addition, there are

- Some changes that cannot be coded and will require a manual solution such as the Union's reimbursement to the City for time worked on union matters;
- Questions regarding some of the changes (e.g. - particularly the conflicting language around the daily overtime versus the forty-hour week floor);
- Concerns that it has not been the galvanization of a team to implement the changes from the contract and staff assigned to the project are "being stretched too thin" to do the work.

CITY OF DETROIT CURRENT PAYROLL AND HUMAN RESOURCE SYSTEMS

The City currently uses two software applications for processing payroll and employee benefits, the Payroll Personnel System (PPS) and Oracle's Human Resources Management System (HRMS). The following is a brief timeline of the City's migration to the Oracle E-Business Suite of software applications:

- ✚ In 1993 the City began a project to rewrite PPS as an 'in-house developed, proprietary system' because they were faced with the impending Year 2000 problem, also known as "Y2K." The Y2K global computing problem resulted from the practice of abbreviating a four-digit year to two digits;
- ✚ Concurrently, a group of people involved in transacting the "money side" of the City's business – paying bills, collecting revenues, maintaining the records - realized they needed a more powerful tool for financials. The team began to look for a world-class, state of the art system that would replace the City's 20+ year old existing financial operations and billing systems;
- ✚ By February 1996, a detailed Request for a Proposal (RFP) was created for a new system for financials and payroll; this effectively stopped the PPS rewrite project. Several vendors presented 'day-long' presentations. The choices narrowed to Oracle versus Peoplesoft;
- ✚ In February 1997, the City purchased Oracle Financials - Oracle General Ledger, Oracle Purchasing, Oracle Accounts Payable, Oracle Accounts Receivable, Oracle Project Accounting/Grants, and a suite of Oracle Human Resource Applications (HRMS). Oracle ranked at the head of the list for meeting Detroit's business needs and Oracle's financial software is viewed by financial professionals in the private sector, industry, and municipalities as being among the very best.
- ✚ In April 1998 Oracle Financials, known as the Detroit Resource Management System (DRMS) went live;
- ✚ On January 1, 2009, the Oracle HRMS system went live for the employees in the Human Resources Department;
- ✚ A year later, on January 1, 2010, Oracle HRMS went live for ten additional agencies.

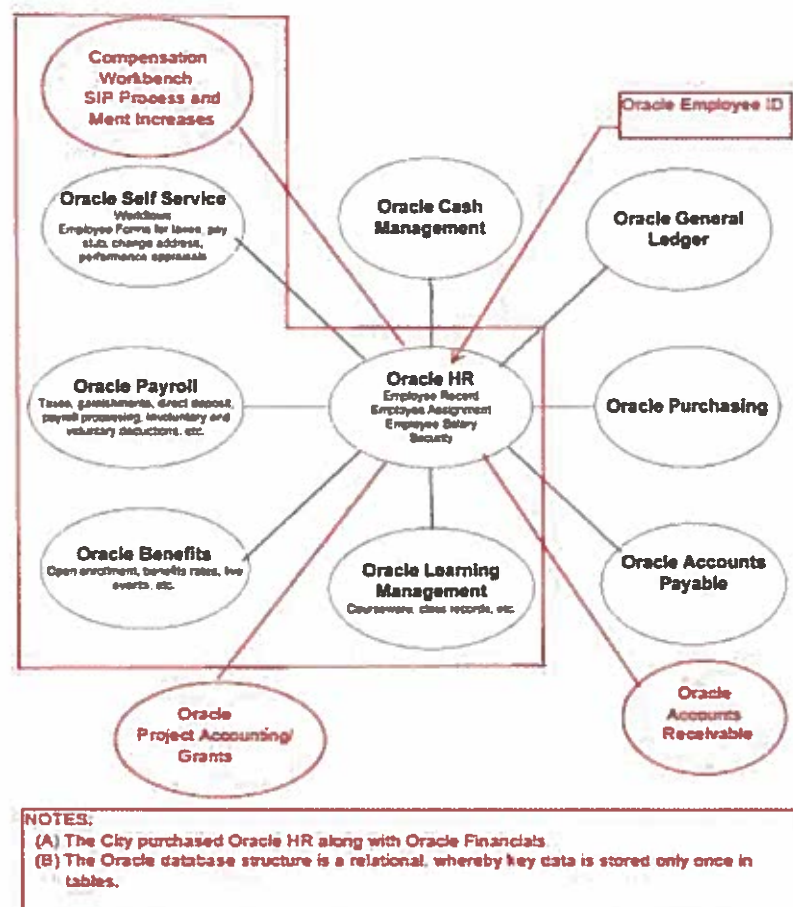
The City's human resource system has two software components – Workbrain and Oracle HRMS – that talk to each other. Simply stated: Workbrain collects the hours and Oracle applies the rates, prints the checks, and manages the HR/Payroll and Benefits processes. HRMS features automated calculations; friendly self-service environments; and a useful system for capturing, maintaining, tracking, monitoring and reporting employee data. Details of each module are below:

- **Workbrain Time and Attendance Software** - includes workforce scheduling, time-off management, and daily time and attendance.

- **Oracle Human Resources** - which is the underlying database that contains the employee record (Employee ID), employee assignment employee salary and security levels;
- **Oracle Payroll** – contains taxes, garnishments, direct deposit, payroll processing, involuntary, and voluntary deductions, etc.
- **Oracle Self Service** – allows the employee to complete actions online; it contains workflows, employee forms for tax, pay stubs, change address, and performance appraisals;
- **Oracle Benefits** – allows for open enrollment, benefits rates, life (qualifying) events, etc.
- **Oracle Learning Management** – tracks employees courseware, class records, etc.

The following is a representation of the City's Current Oracle Enterprise System:

City of Detroit Oracle Enterprise System



Although the City purchased Oracle HRMS along with DRMS in 1997, work focused solely on implementing and upgrading the financial applications. Then, 10 years later, in 2007, the City began implementing its purchased payroll and benefits systems solution in a phased approach. To date, only 34%, or 12 of 35 departments have been converted to HRMS. These departments account for a small amount of the City's employee base, and 92% of the City's employees remain on the PPS system. According to HR, the Administration consistently denied funding to completely implement HRMS.

In 2012, the Financial Advisory Board (FAB) pushed for a new system to be implemented by their internal established timeline (2014). There was an RFP, however, according to HR management "it was fast-tracked" through the Administration:

- The original requirements in the RFP had approximately 1,400 requirements, but the final RFP was condensed and had only 400 requirements;
- Only four months elapsed between the RFP, bid, and acceptance of a contract. Typically, major software projects of this magnitude can take up to one to two years to develop;
- Six companies were present at the pre-bid conference, however, only the Automatic Data Processing Company (ADP) officially responded by the proposal due date;
- Oracle asked for an extra two weeks to develop their proposal, but they were denied the request.

In November 2012, the City entered into a five year contract with ADP to provide a more efficient and cost effective way of processing and administering payroll and employee benefits.

Transition of Payroll and Benefit Administration to a Managed Care Provider

During our work in accordance with the Emergency Manager Order No. 8 (EMO 8), issued on June 20, 2013, we reviewed the project agreement with ADP. We noted the following issues with the project:

- Did not have a proper, comprehensive cost/benefit analysis. The project did not include the cost of retained personnel that would have been dedicated to payroll, benefits, and human resources after the conversion;
- Lacked adequate project plans, process flows;
- Did not include documentation which focused on internal controls;
- Had unrealistic projected savings; the total cost of ownership savings per employee calculated by OAG was significantly lower than projected;
- Lacked transparency in contract administration which ultimately could have cost the City millions of dollars in incremental change control fees;

- Would have moved human resources, payroll and benefits administration, from an enterprise wide system (Oracle) to a fragmented system with inferior technology and had the potential to significantly weaken internal control structures in these functions:
 - ADP had five separate databases each holds its own human resource employee data. This would have resulted in a dramatic increase in the number of times the same data would be stored in duplicate data bases Oracle is a relational database. OAG had serious concerns for data integrity across the separate databases given the lack of documented written process flows and internal controls;
 - Human Resource admitted that “creating people or manual processes would be necessary to fill in any gaps or deficiencies in the final system, ...and there would be other situations that requiring human intervention;”
 - ADP’s system would have required approximately 1400 new job codes to be created to enact the class code as a separate primary key.

During the transition, the City opted to move benefits administration to a different third-party service provider outside of the ADP contract executed in December 2012, a move that could have cost the City approximately \$3.9 million in buy-out fees and upwards of \$275 thousand to customize the new ADP payroll system.

In response to EMO8, the OAG released two reports to the Emergency Manager (EM) Kevyn Orr in August and October, 2013. The reports highlighted our concerns with the ADP project. We recommended an independent, new assessment of the project, including a complete cost/benefit analysis. We also estimated potential buy-out and cancellation fees of approximately \$11.2 million, based on buy-out costs being equal to 40% of the total contract cost of \$28.0 million (excluding one-time implementation fees of \$4.2 million.)

According to the City’s Law Department, the City rejected the contract during the bankruptcy. ADP filed a ‘Proof of Claim’ with the United States Bankruptcy Court citing over \$30 million of damages, specifically, an:

- Administrative Priority Claim of \$0.9 million; and an
- Unsecured Rejection Damage Claim totaling \$29.6 million.

Corporation Counsel is currently working on resolving the dispute.

WHAT ARE RELATIONAL DATABASES?

Databases have been a staple of business computing from the very beginning of the digital era. Since then, relational databases have grown in popularity to become the standard.

Originally, databases were flat. This means that the information was stored in one long text file, called a tab delimited file. Each entry in the tab delimited file is separated by a special character, such as a vertical bar (|). Each entry contains multiple pieces of information (fields) about a particular object or person grouped together as a record. The text file makes it difficult to search for specific information or to create reports that include only certain fields from each record. Here's an example of the file created by a flat database:

```
LastName, FirstName, Age, Salary|Smith, John, 35, $280|Doe, Jane, 28,  
$325|Brown, Scott, 41, $265|Howard, Shemp, 48, $359|Taylor, Tom, 22, $250
```

You can see that you have to search sequentially through the entire file to gather related information, such as age or salary.

A relational database allows you to easily find specific information. It also allows you to sort based on any field and generate reports that contain only certain fields from each record. Relational databases use tables to store information. The standard fields and records are represented as columns (fields) and rows (records) in a table.

With a relational database, you can quickly compare information because of the arrangement of data in columns. The relational database model takes advantage of this uniformity to build completely new tables out of required information from existing tables. In other words, it uses the relationship of similar data to increase the speed and versatility of the database.

The "relational" part of the name comes into play because of mathematical relations. A typical relational database has anywhere from 10 to more than 1,000 tables. Each table contains a column or columns that other tables can key on to gather information from that table.

By storing this information in another table, the database can create a single small table with the locations that can then be used for a variety of purposes by other tables in the database. A typical large database, like the one a big Web site, such as Amazon would have, will contain hundreds or thousands of tables like this all used together to quickly find the exact information needed at any given time.

Relational databases are created using a special computer language, structured query language (SQL) that is the standard for database interoperability. SQL is the foundation for all of the popular database applications available today, from Access to Oracle.

Source: <http://computer.howstuffworks.com/question599.htm>

HowStuffWorks, a wholly owned subsidiary of Discovery Communications, is the award-winning source of credible, unbiased, and easy-to-understand explanations of how the world actually works. Founded by North Carolina State University Professor Marshall Brain in 1998, the site is now an online resource for millions of people of all ages.

COUNT OF BARGAINING UNION CODES ASSIGNED TO LABOR UNIONS

LIST OF BARGAINING UNIONS	ALL OTHER DEPTS UNION/NON- UNION	DWS	DDOT	POLICE	FIRE & EMS	TOTAL BARGAINING CODES
Amalgamated Transit Union, AFL-CIO	-	-	1	-	-	1
American Federation of State, County, and Municipal Employees (AFSCME)	59	3	5	2	1	70
Assistant Supervisors of Street Maintenance and Construction	1	-	-	-	-	1
Association of City of Detroit Supervisors	1	-	-	-	-	1
Association of Detroit Engineers	1	1	-	-	-	2
Association of Municipal Engineers	1	1	-	-	-	2
Association of Municipal Inspectors	1	-	-	-	-	1
Association of Professional and Technical Employees (APTE)	1	1	-	-	-	2
Association of Professional Construction Inspectors	1	1	-	-	-	2
Department of Transportation Foremen's Association of America	-	-	1	-	-	1
Detroit Fire Fighters Association (DFFA)	-	-	-	-	19	19
Detroit Income Tax Investigators Association	1	-	-	-	-	1
Detroit Police Unions (DPOA, DPCOA, DPSLA, POAM)	-	-	-	6	-	6
Detroit Senior Water Systems Chemists Association	-	1	-	-	-	1
Emergency Medical Service Officers Association	-	-	-	-	4	4
International Union of Operating Engineers (IUOE)	4	3	1	-	-	8
Michigan Building and Construction Trades Council (Detroit & BTC)	45	14	3	-	-	62
Senior Accountants, Analysts and Appraisers Association (SAAA)	1	1	-	-	-	2
Service Employees International Union (SEIU)	7	-	-	-	-	7
Supervisor's Chapter of the DOT Foreman's Association	-	-	2	-	-	2
Teamsters	12	1	1	-	-	14
United Automobile Workers (UAW)	5	2	-	1	-	8
Utility Workers Union of America	3	-	-	-	-	3
Other Bargaining Unions	7	-	-	-	-	7
TOTAL BARGAINING UNIT CODES BY BARGAINING UNION	151	29	14	9	24	227
TOTAL BARGAINING UNIT CODES FOR NON-UNION EMPLOYEES	76	19	2	1	1	99
GRAND TOTAL	227	48	16	10	25	326

MEETING THE NEEDS OF GOVERNMENT NOW AND IN THE FUTURE

Using Cloud Innovation to Gain Organizational Agility, Cost Control and Efficiency

The following select excerpts, are taken directly from the article, and illustrate the benefits of using cloud technology:

- Why should companies migrate to cloud technology?
 - Financially [they may] no longer have the resources available to invest in on-premises infrastructure and its attendant maintenance costs. For those agencies, the cloud offers modern, flexible capabilities without large upfront capital investments, as well as a more streamlined implementation and little to no upkeep for already overworked staff;
- Mitigating Retirements, Empowering the Workforce
 - Agencies have also had to contend with an aging workforce. According to a Congressional Research Service report, nearly half of state workers are between nearly half of state workers are between 45 and 64 years old. These employees have long been the keepers of institutional knowledge, particularly around the legacy systems and applications on which government has depended. Again, the cloud offers a reprieve by providing agencies with intuitive, user-friendly interfaces and applications that don't require institutional memory.
 - Cloud technology can help alleviate that pain of attrition and retirement by moving the responsibility for handling any or all IT issues — from desktop to mainframe and from email to system maintenance and upgrades — to a provider that has the necessary experience and skills. With more flexibility and virtual accessibility, an agency can eliminate the need to have an in-house employee test upgraded environments to ensure business processes are functioning as designed. Instead, an agency can opt to have some or all of the modern technology managed by a provider.
- Boosting Employee Productivity with Increased Functionality
 - Out-of-the-box options offer intuitive interfaces for employees. Dashboards simplify system access; social collaboration tools enable business intelligence to reach employees; and self-service options improve employee productivity;
 - Another productivity-boosting benefit of the cloud: mobility. Cloud solutions offer employees anytime, anywhere access, and provide remote employees with access to the same applications and capabilities as in-office employees.

Source: <http://www.centerfordigitalgov.com>, *A White Paper from the Center for Digital Government: Meeting the Needs of Government Now and In the Future*. The Center for Digital Government, a division of e Republic, is a national research and advisory institute on information technology policies and best practices in state and local government. Through its diverse and dynamic programs and services, the Center provides public and private sector leaders with decision support, knowledge, and opportunities to help them effectively incorporate new technologies in the 21st century.

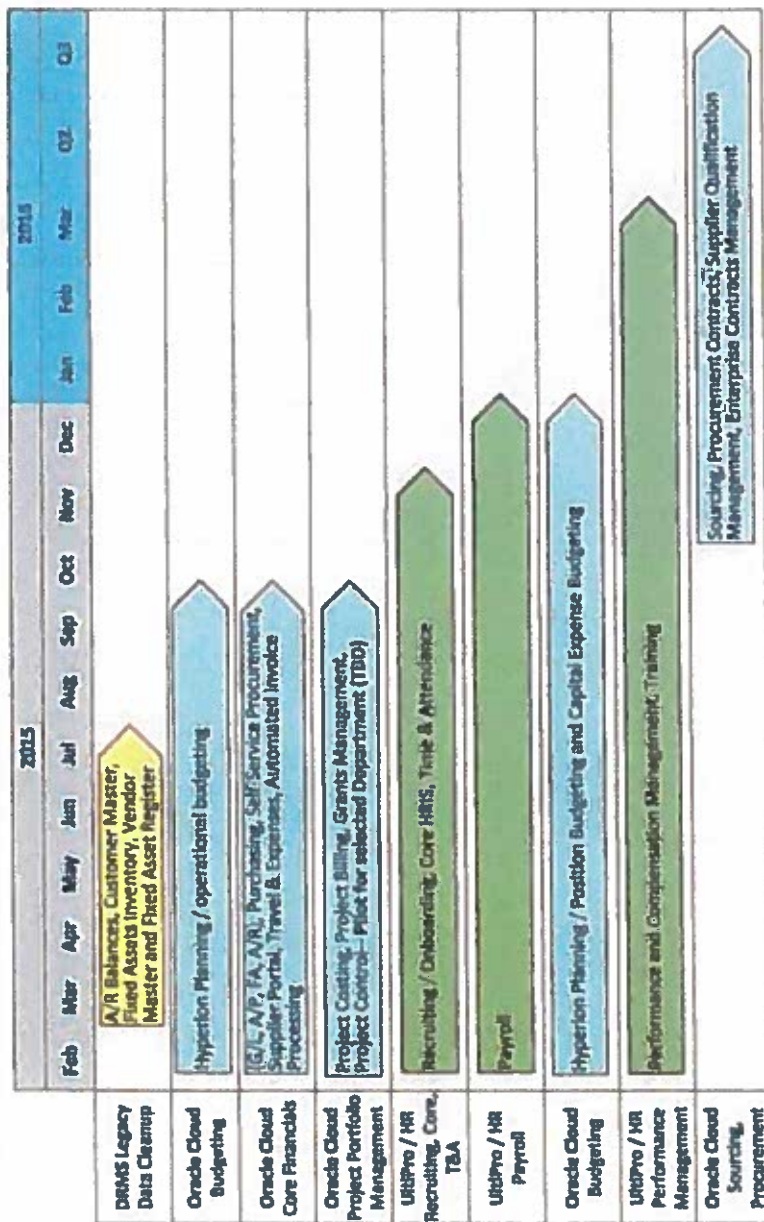
- **Reducing IT Maintenance, Upgrades and Repairs**
 - With software-as-a-service (SaaS), internal employees no longer have to provide continuous technical upgrades, apply patches, or perform other everyday technical administration. This is handled by the outside provider. Agencies can also avoid continuously updating software, which can be painful and cause disruptions to employee productivity;
 - The scalability of a cloud infrastructure also enables agencies to reduce or eliminate silos created by legacy systems that no longer communicate between departments;
 - Due to 24/7 availability of systems and potentially limitless storage capabilities, system performance is optimized and employees save time on daily tasks by having quick access to the information they need.
- **Bending the Cost Curve**

Besides the functional and technical benefits mentioned previously, the cloud also offers significant financial benefits:

 - Cloud technology enables agencies to repurpose human and technical resources. IT staff resource efforts can be redirected to higher-level priorities;
 - Lower Total Cost of Operations (TCO) and the predictability of the long-term cost of cloud technology. [Cloud technology usually has] minimal upfront investment, [considering] all possible costs of maintaining on-premises equipment versus cloud applications. On-premises examples include cost of IT resources, hardware servers, equipment leases, software licenses, backup solutions and software, redundant server equipment, and software and system upgrades. Examples of cloud costs are the initial installation and migration and monthly hosting fees.

CITY OF DETROIT ENTERPRISE RESOURCE PLANNING SYSTEM TIMELINE May 2015

ERP Implementation Timeline



TYPES OF LABOR AGREEMENTS BY LABOR UNION

LIST OF BARGAINING UNIONS	MASTER AGREEMENTS	SUPPLEMENTAL AGREEMENTS	CITY EMPLOYMENT TERMS AGREEMENTS	TOTAL LABOR AGREEMENTS
Amalgamated Transit Union, AFL-CIO	1	-	-	1
American Federation of State, County, and Municipal Employees (AFSCME)	7	18	2	27
Assistant Supervisors of Street Maintenance and Construction	1	-	-	1
Association of City of Detroit Supervisors	1	-	-	1
Association of Detroit Engineers	-	-	1	1
Association of Municipal Engineers	-	-	1	1
Association of Municipal Inspectors	1	-	-	1
Association of Professional and Technical Employees (APTE)	1	-	1	2
Association of Professional Construction Inspectors	2	-	-	2
Department of Transportation Foremen's Association of America	1	-	-	1
Detroit Fire Fighters Association (DFFA)	1	-	-	1
Detroit Income Tax Investigators Association	1	-	-	1
Detroit Police Unions (DPOA, DPCQA, DPOLA, POAM)	4	-	-	4
Detroit Senior Water Systems Chemists Association	1	-	-	1
Emergency Medical Service Officers Association	1	-	-	1
International Union of Operating Engineers (IUOE)	5	-	-	5
Michigan Building and Construction Trades Council (Detroit & BTC)	4	-	-	4
Senior Accountants, Analysts and Appraisers Association (SAAA)	1	-	1	2
Service Employees International Union (SEIU)	3	-	-	3
Supervisor's Chapter of the DOT Foreman's Association	1	-	-	1
Teamsters	3	4	-	7
United Automobile Workers (UAW); Sanitary Chemists and Technicians Association	2	-	2	4
Utility Workers Union of America	2	-	-	2
TOTAL LABOR AGREEMENTS BY CATEGORY	44	22	8	74
LABOR AGREEMENTS BY DEPARTMENT				
All Other Departments	22	19	0	41
DWSD	9	-	8	17
DDOT	6	-	-	6
Police	5	2	-	7
Fire	2	1	-	3
TOTAL LABOR AGREEMENTS BY CATEGORY BY DEPARTMENT	44	22	8	74

LIST OF LABOR UNIONS BY MAJOR AGENCIES AND ALL OTHER DEPARTMENTS

LIST OF BARGAINING UNIONS	ALL OTHER DEPTS UNION/NON- UNION	DWS	DDOT	POLICE	FIRE	TOTAL LABOR AGREEMENTS
Amalgamated Transit Union, AFL-CIO	-	-	1	-	-	1
American Federation of State, County, and Municipal Employees (AFSCME)	24	3	-	-	-	27
Assistant Supervisors of Street Maintenance and Construction	1	-	-	-	-	1
Association of City of Detroit Supervisors	1	-	-	-	-	1
Association of Detroit Engineers	-	1	-	-	-	1
Association of Municipal Engineers	-	1	-	-	-	1
Association of Municipal Inspectors	1	-	-	-	-	1
Association of Professional and Technical Employees (APTE)	1	1	-	-	-	2
Association of Professional Construction Inspectors	1	1	-	-	-	2
Department of Transportation Foremen's Association of America	-	-	1	-	-	1
Detroit Fire Fighters Association (DFFA)	-	-	-	-	1	1
Detroit Income Tax Investigators Association	1	-	-	-	-	1
Detroit Police Unions (DPOA, DPCOA, DPSLA, POAM)	-	-	-	4	-	4
Detroit Senior Water Systems Chemists Association	-	1	-	-	-	1
Emergency Medical Service Officers Association	-	-	-	-	1	1
International Union of Operating Engineers (IUOE)	3	1	1	-	-	5
Michigan Building and Construction Trades Council (Detroit & BTC)	1	2	1	-	-	4
Senior Accountants, Analysts and Appraisers Association (SAAA)	1	1	-	-	-	2
Service Employees International Union (SEIU)	3	-	-	-	-	3
Supervisor's Chapter of the DOT Foreman's Association	-	-	1	-	-	1
Teamsters	5	1	1	-	-	7
United Automobile Workers (UAW); Sanitary Chemists and Technicians Association	2	2	-	-	-	4
Utility Workers Union of America	-	2	-	-	-	2
TOTAL LABOR AGREEMENTS BY DEPARTMENT	45	17	6	4	2	74
LABOR AGREEMENTS BY CATEGORY						
Master Agreements	22	9	6	5	2	44
Supplemental Agreements	19	-	-	2	1	22
City Employment Terms	-	8	-	-	-	8
TOTAL LABOR AGREEMENTS BY DEPARTMENT	41	17	6	7	3	74

