# Review of the Business Case for ERP

June 4, 2010

Report No. 10-16

**Office of County Auditor**

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# Executive Summary

Broward County has considered the concept of Enterprise Resource Planning (ERP) since early 2007. To evaluate County needs and assess the feasibility of ERP, the County commissioned three (3) separate consultant studies that culminated in the Business Case for ERP report dated February 5, 2010 (the "Business Case").

Based on our review of the Business Case, we determined the following:

- Many County processes and systems are inefficient, ineffective, and need to be improved.

- An ERP system might solve some of the County's critical unmet needs, but poses significant risks without assured results.

- There appear to be viable, less costly solutions.

Accordingly, we recommend the following:

1. To ensure the Board members have sufficient information to make an informed decision, we recommend the Board of County Commissioners direct the County Administrator to provide an analysis of potential solutions to address critical unmet business needs and technology issues. The analysis should include priorities, cost estimates, time to implement, risks and returns.

2. To facilitate timely adoption of cost-saving measures, we recommend the Board of County Commissioners direct the County Administrator to begin addressing critical unmet business needs and technology issues identified in the consultant studies, that are

    a. Independent of the ERP decision process, such as implementation of a time and attendance system, and

    b. Necessary to ensure the success of our future technology strategy and vision, e.g., business process analysis and re-engineering.

The detailed findings and supporting schedules are included in the following pages.

## Background

In 2007, the Government Finance Officers Association (GFOA) performed a Technology Needs Assessment, specifically an evaluation of Broward County's financial and human resources management systems. As a result of study findings, the GFOA recommended that the County pursue the implementation of a full Tier I Enterprise Resource Planning (ERP) system, such as Oracle, PeopleSoft, or SAP.

According to the GFOA, ERP systems are software applications that support an organization's finance, human resources, purchasing, and a broad range of other administrative functions. The major advantages of modern ERP systems include the consolidation of data from diverse business processes into a single information repository, the incorporation of best practices and other features that allow organizations to reengineer their business processes for greater efficiency, and the ability, especially with the addition of business intelligence (BI) capabilities, to disseminate information through all levels of an organization.

Following the GFOA's Technology Needs Assessment, two additional studies, by SciCom and EquaTerra, Inc., were commissioned to explore the recommended ERP solution. A summary of the three studies is located at *Table 4: Independent Studies of Broward County Current State* on page 13.

Information from the three studies was compiled and presented in the Business Case for Enterprise Resource Planning (ERP) Report, which was sent via transmittal to the Board of County Commissioners from the County Administrator on February 5, 2010.

## Objective, Scope, and Procedures

Our review was intended to provide the Board of County Commissioners with an objective assessment of the ERP Business Case and supporting details.

The scope of our review included the studies performed by the GFOA, SciCom, EquaTerra and the Administration's ERP Business Case Report.

We reviewed the Business Case and evaluated the three independent studies. We interviewed ERP consultants and reviewed methodologies, findings, and recommendations from each study. We analyzed and attempted to validate projections and calculations presented in each of the studies. We compared the study conclusions with the results of our own internal reviews of County operations and technology. Finally, we surveyed other local

governments to obtain additional comparative information and researched details on ERP technology and implementation projects.

# Findings

## 1. Many County processes and systems are inefficient, ineffective, and need to be improved.

The 2007 Technology Assessment performed by the Government Finance Officers Association (GFOA) identified key functional weaknesses and overall deficiencies in County systems and processes.  Specifically, the GFOA study findings identified:

- A lack of an overall systems development and integration plan to define how all systems interrelate to meet business needs.

- Inconsistent access to information, a lack of data timeliness and reliability, and inflexible reporting functions.

- Redundant data entry and manual processes are required to move data between multiple standalone systems.

- A lack of user understanding of available system functionality.

- Standard financial reports do not meet user needs.

- Internal decisions to not implement available system functionality have forced the procurement and development of additional separate, non-interfaced systems.

- A lack of dedicated oversight and management of system implementations, training, and utilization.

Our internal reviews of County programs, processes and technology initiatives generally corroborate the GFOA's findings.

## 2. An ERP might solve some of the County's critical unmet needs, but poses significant risks without assured results.

The costs, risks and benefits of an ERP project were projected in the GFOA technology assessment and the subsequent ERP studies. The consultant reports included three common themes with an ERP implementation: a) independent business systems will still be required, even with an ERP; b) an ERP implementation project poses significant challenges and risks; and c) ERP technology costs are substantial and returns are not assured.

**a) INDEPENDENT BUSINESS SYSTEMS WILL STILL BE REQUIRED, EVEN WITH AN ERP**

An ERP system will not fulfill all of the County's unmet business needs and fully correct process and system inefficiencies.

The GFOA Technology Needs Assessment suggested that certain process needs might be better served by third-party or "best of breed" systems. A "best of breed" approach allows organizations to choose the best system to meet specific business needs in individual functional areas.

EquaTerra, in developing the scope of an ERP project for the County, also concluded that certain independent business systems will remain even with an ERP system. An ERP system is not intended to replace critical systems used in operations at Port Everglades, Revenue Collection, Transportation Services, Human Services, Libraries, Parks and Recreation, and for other County agencies and functions. See *Tables 1a and 1b: Operational Applications Scheduled/NOT Scheduled for Retirement or Replacement by ERP Software* on pages 9-10.

Some specific functions, such as performance management (PM), will not be provided by ERP software. To help determine the impact of an ERP on performance management programs, we surveyed 18 local government sites, 12 of which are using tier-1 ERP technology. The survey results show that independent PM systems were used in all sites, including those with ERP systems. Budget managers surveyed, including the 'leaders' in PM, reported no direct link between their financial systems and their PM programs. See *Table 2: Survey of Performance Management (PM) Systems for survey results* on page 11.

**b) AN ERP IMPLEMENTATION PROJECT POSES SIGNIFICANT CHALLENGES AND RISKS**

A 2008 Gartner Group study[1] of ERP implementations concluded that "Between 20% and 35% of all ERP implementations fail, and up to 80% exceed time and budget estimates. ERP project success requires a focus on people and process, as well as the software. Ignoring these aspects will cause your project to fail."

Reduced staffing levels will significantly challenge the County's ability to dedicate internal resources to an implementation project. The Business Case for ERP reports over 1,300 position reductions have occurred in the past three years, and further cuts are anticipated. Gartner analysis shows that ERP failures are often attributable to

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[1] "Address Five Key Factors for Successful ERP Implementations," 29 August 2008, Research ID Number: G00160011; 2008 Gartner, Inc. and its affiliates.

organizational factors. One Gartner defined prerequisite for success is the full-time assignment of internal project members with deep business knowledge, and backfilling of those positions for the duration of the ERP project. Based on this research, implementing ERP without a full complement of staff resources diminishes our likelihood of success.

An ERP implementation project will create additional workload for staff, at a time when County resources are shrinking. As a result, the proposed project strategy relies heavily on third party services to implement and integrate an ERP system, with only limited assistance from County subject matter experts. Approximately 80%, or $41.3 million, of estimated project costs are allocated for third party services. Details of EquaTerra's estimated total cost of ownership (TCO) are at *Table 3: Estimated Total Cost of Ownership (TCO) for an ERP Implementation* on page 12. Excessive reliance on third party services will:

- Increase the risk that existing policy and organizational requirements will not be met.

- Decrease the level of project ownership and the County's ability to control project outcomes.

Previous County investments in technology, when resources were more readily available, failed to accomplish projected cost savings or process improvements. Examples include the HR Recruiter system[2], the BC-102-102 Electronic Document Management System[3], the Public One Stop SErvice (POSSE) initiative[4] and the upgrade of the LGFS financial system to Advantage.

### c) ESTIMATED ERP COSTS ARE SUBSTANTIAL AND RETURNS ARE NOT ASSURED

There is a high degree of uncertainty surrounding estimates of project costs and potential cost savings.

ERP cost estimates have escalated to $48.6 Million, from the original GFOA estimate of $10.5 million. Our research on ERP projects indicates that final costs often exceed original estimates. Project cost estimates from the three studies are found at *Table 4: Independent Studies of Broward County Current State* on page 13.

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[2] County Auditor's Report *Review of the Strategic Testing and Recruiting (STAR) System Project and HR Recruiter System;* Board Agenda Item #29, May 24, 2005.

[3] County Auditor's Report – *Review of Phase 2 of the Electronic Document Management (EDM) Project: Automation of the BC-102-102 Personnel Action Form;* Board Agenda Item #23, March 11, 2008.

[4] County Auditor's Report – *Post-Implementation Review of the Building Code Automation System at the Permitting, Licensing, and Consumer Protection Division*, Board Agenda Item #65, June 23, 2009.

EquaTerra, the author of the current estimates of ERP costs and potential savings, has a vested interest in a County implementation of an ERP.  According to the contract statement of work, the County already engaged EquaTerra to continue work if a decision is made to implement ERP software. EquaTerra included their estimated fees of $7,718,625 for Third Party Assurance Services in the ERP total cost of ownership at *Table 3: Estimated Total Cost of Ownership (TCO) for an ERP Implementation* on page 12.

We were unable to validate EquaTerra's estimate of potential annual cost savings of $21.6 million due to undisclosed source data for the benchmarks used and the degree of subjectivity in the underlying data and analysis.

According to the Business Case, 'Strategy for Realizing Savings' section,  EquaTerra's estimated annual cost savings from an ERP initiative have been reduced to $9.6 million as a result of FY 2010 staff reductions that eliminated approximately $12 million of the forecasted annual FTE savings. Budget changes anticipated for FY2011 could further diminish the potential annual cost savings and lengthen the payback period for an ERP investment.

According to the GFOA[5], governments who installed ERP systems were hard pressed to identify concrete areas of cost savings or examples of better decision making. Discussions with staff from the Broward Sheriff's Office (BSO) and the Broward County School Board, both recent ERP implementation sites, suggest that it is difficult to quantify cost savings resulting from their ERP implementations. In both instances, ERP projects were initiated primarily to replace obsolete or aging systems; cost savings were an ancillary objective.

## 3. There appear to be viable, less costly solutions.

While an ERP system presents one conceptual solution to many of the county's inefficiencies and unmet needs, other solutions are available, as recognized in the 'Next Steps' section of the Business Case.  However, these other solutions have not been explored and will only be considered if staff's recommendation to move forward with an ERP solicitation is unsuccessful.  Two such solutions include a) implementing what we already own and b) taking an incremental approach to drive process efficiencies.

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[5] Government Finance Officers Association Technology Solutions Series, *Technologies for Government Transformation: ERP Systems and Beyond,* page 3. (Chicago, Illinois: edited by Shayne C. Kavanagh and Rowan A. Miranda, 2005.

**a) IMPLEMENT WHAT WE ALREADY OWN**

Intuitively, it will cost less to upgrade or modify our existing systems to better serve critical business needs, than to procure and implement a new ERP system. As indicated in the GFOA's Technology  Needs Assessment, functionality on Advantage and Cyborg was licensed, but not implemented. For example, Advantage includes accounts receivable and three-way matching features that were never deployed. In addition, our Advantage license includes software modules for Project and Grants management and Fixed Assets Management that were not implemented.

Interviews with other Advantage users indicate that system features not implemented at Broward are working at their sites.  Major governments utilize Advantage software for financials, accounting, budgeting, and human resources, including LA County, California; New York City, New York; and the Commonwealth of Kentucky. See *Table 5: CGI Advantage User Sites* on page 14.

The system that we already own, Advantage, could potentially function as a viable ERP system if upgraded, reconfigured and utilized accordingly.

**b) TAKE AN INCREMENTAL APPROACH TO DRIVE PROCESS EFFICIENCIES**

Major areas of inefficiency and unmet business needs, such as the payroll process and financial reporting, have already been identified by the consultant studies. Concurrent with the analysis of potential enterprise-wide solutions, incremental steps can be taken to improve processes immediately and prepare the organization for future changes. Examples of such incremental efforts include:

- Procurement policies and procedures can be evaluated and modified to reduce inefficiencies.

- The time and attendance process can be automated and the resulting system can be integrated with Cyborg now and/or an ERP in the future.

- Data flows (interfaces) between systems can be studied to identify the need for sharing detailed data between operating and core systems.

- Financial reporting needs can be better defined to determine whether existing data and reporting tools can be modified to meet those needs or to establish the baseline for reporting in a new system.

- Available system features can be revisited to determine the feasibility of implementation.

A less costly approach and gradual evolutionary process presents a practical alternative to a "revolutionary" ERP. A gradual, incremental approach can 1) begin to provide benefits while a decision is under consideration, 2) provide early successes to earn greater staff commitment to future change, 3) mitigate risk by reducing upfront financial commitments, and 4) provide greater flexibility to re-evaluate and correct the enterprise strategy as it is implemented.

# Recommendations

1.  To ensure the Board members have sufficient information to make an informed decision, we recommend the Board of County Commissioners direct the County Administrator to provide an analysis of potential solutions to address critical unmet business needs and technology issues. The analysis should include priorities, cost estimates, time to implement, risks and returns.

2.  To facilitate timely adoption of cost-saving measures, we recommend the Board of County Commissioners direct the County Administrator to begin addressing critical unmet business needs and technology issues identified in the consultant studies, that are

    a.  Independent of the ERP decision process, such as implementation of a time and attendance system, and

    b.  Necessary to ensure the success of our future technology strategy and vision, e.g., business process analysis and re-engineering.

## Table 1a: Operational Application Systems Scheduled for Retirement or Replacement by ERP Software

In EquaTerra's study of existing County systems, agency specific systems were identified for retirement or replacement by ERP software. Details of the estimated $1.2 million in potential annual cost savings are included below.

| Agency | Systems Identified for Retirement/ Replacement | | Estimated Cost Savings |
|---|---|---|---|
| Accounting | Advantage Financials InfoAdvantage and WEBI Reporting Tools | Convey 1099 reporting | $ 263,030 |
| Aviation | Maximo PropWorks 4.1 | Oracle Financials | 118,308 |
| Community Services | Maximo | | - |
| ETS | BMS Service Desk Express 9.6 | | 86,950 |
| Office of Management and Budget | Advantage Performance Budget and Pattern Stream | | 143,138 |
| Facilities Maintenance | Asset Works/Facility Focus | | 191,544 |
| Human Resources | Cyborg – Payroll and HR HR Recruiter Caseware 20/20 (Case Mgt) ACT (Benefits Case Mgt) COBRA (3$^{rd}$ Party Billing) | Personal Registrar Element K Training PGP encryption | 151,415 |
| Human Services | QuickBooks HSDITEquipment Inventory System | PaperMaster Live | - |
| Port Everglades | FAX – Fixed Asset System Visual FoxPro | MP2/Datastream | 14,192 |
| Public Works | Peace/ENERGY (utility billing) Timberline (Daily work sheets) Maximo JWS Billing (Waste/Recycling Billing) HEAT (help desk) | FastTrac | 200,000 |
| Purchasing | PMIS – Project Management Information System Advantage: Vendor Registration Procurement Milestones | | 33,700 |
| Revenue Collection | SymPro/JP Morgan Troy/Relyco Check Printing | | 11,000 |
| Risk Management | SHIELD | | - |
| Transportation | MCMS (Fleet Management) TMIS (Work Order System, Time/Attendance) | | 12,000 |

(Source: EquaTerra Activity Based Management Models: Systems Scenarios)

## Table 1b: Operational Application Systems Not Scheduled for Retirement or Replacement by ERP Software

In EquaTerra's study of existing County systems, these agency specific systems were excluded from estimated cost savings and are not scheduled for retirement or replacement by ERP software.

Aviation

| | |
|---|---|
| **Airport Noise and Operations Monitoring System (ANOMS)** | **Electronic Visual Information Display System (EVIDS/WinFIDS)** |
| **Baggage System FKI/Logistics** | **Gate Management System** |

Community Services

| | |
|---|---|
| **Carl/CarlWeb (Library Systems)** | **CLIO (Inter-Library Loan System)** |
| **Chameleon (Animal Care System)** | **Envisionware (Public Scheduling)** |
| **RECTrac (Parks' Reservation System)** | **Track-It (Help Desk System)** |

County Administration

| |
|---|
| **Symposium (Call Center)** |

County Records

| | |
|---|---|
| **Aptitude Solutions (Land/Real Estate)** | **Extender/Lagato (Cultural Affairs)** |
| **Axia (Value Adjustment Board)** | **OnCore (Official Records)** |
| **Empower (Scanning)** | **Oracle URM (Public Records)** |

Risk Management

| |
|---|
| **STARS & STARS Web** |

Environmental Protection and Growth Management (EPGM)

| |
|---|
| **POSSE (Licensing and enforcement)** |

Facilities Maintenance

| | |
|---|---|
| **CTR (Parking/Revenue Control)** | **Phaser (Utility Bill Tracking/Analysis)** |
| **Johnson Controls (Bldg Automation)** | **Siemens (Bldg Automation)** |
| **Pegasus** | **ProGen (Job Order Contracting)** |

Human Services

| | |
|---|---|
| **ECHO (Client Services)** | **EasyTrack(Client Services)** |
| **CSMS (Client Services Mgmt System)** | |

Port Everglades

| | |
|---|---|
| **Harbormaster/Klein Systems** | **Foreign Trade Zone Software** |

Public Works

| | |
|---|---|
| **Kronos (Time & Attendance Collection)** | **SCADA(WWS Water Plant Control)** |
| **LabLynx (Laboratory Management)** | **Fortis (Document Management)** |

Revenue Collection

| |
|---|
| **TaxSys Tax and License System** |

Transportation

| | |
|---|---|
| **Passenger Data Systems** | **MIDAS (Dispatching)** |
| **Hastus/Giro (Scheduling)** | **Stratagen (Para transit)** |

(Source: EquaTerra Activity Based Management Models: Systems Scenarios)

## Table 2: Survey of Performance Management (PM) Systems

A survey of other jurisdictions identified systems currently used for Performance Management, Financial Accounting, and HR/Payroll functions. 12 Sites utilizing tier-1 ERP technology (SAP, Oracle, or PeopleSoft) are indicated by (*).

| Survey Site | PM System(s) | Financial System(s) | HR/Payroll System(s) |
|---|---|---|---|
| **Performance Management "Leaders** | | | |
| **Maricopa County, AZ\*** | Internally developed | Advantage | PeopleSoft[1] |
| **King County, WA** | Internally developed | 2 legacy systems[2] | 2 legacy systems |
| **Fairfax County, VA** | Internally developed | FAMIS | PRISM |
| **Multnomah County, OR\*** | Internally developed | SAP | SAP |
| **Similar Sized Counties** | | | |
| **San Bernardino, CA\*** | No automated system | FAS (internally developed) | PeopleSoft |
| **Tarrant County, TX\*** | MS Word, MS Excel | SAP | SAP |
| **Santa Clara, CA\*** | MS Word, MS Excel | SAP CGI BRASS Budgeting | PeopleSoft |
| **City of Los Angeles, CA** | MS Excel, MS Access | FAMIS CGI BRASS Budgeting | PACER (internally developed) |
| **City of New York, NY** | Internally developed | Advantage | Data unavailable |
| **ICMA Participating Jurisdictions** | | | |
| **City of Austin, TX** | Internally developed | Advantage Financials; internally developed budget software | Banner |
| **City of Phoenix, AZ\*** | MS-Excel | SAP | PeopleSoft |
| **City of Dallas, TX\*** | Actuate | Advantage Financials SAP (for billing only) | Lawson |
| **Other Florida Jurisdictions** | | | |
| **Broward County School District \*** | Internally developed data warehouse | SAP | SAP |
| **Miami-Dade County** | Active Strategy Enterprise | FAMIS[3] | FAMIS |
| **Palm Beach County\*** | MS Word, MS Excel | Advantage PeopleSoft (Clerk's office) | Internally developed |
| **Orange County\*** | No automated system | Advantage | PeopleSoft |
| **Pinellas County\*** | Fletcher & Fletcher | INFOR (GEAC), CYMA PMX / Bellwether[4] | Oracle |
| **Duval/Jacksonville\*** | Actuate[5] | FAMIS | Oracle |
| **Hillsborough County** | Not automated | FAMIS | FAMIS |

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[1] Maricopa plans to outsource their Human Resources and Payroll functions to ADP during FY 2010.

[2] King County is replacing 2 separate legacy financial and 2 separate legacy payroll systems with Oracle. While the Oracle implementation is currently in progress, there are no plans to replace the internally developed PM tools.

[3] Miami-Dade is in the process of replacing FAMIS with PeopleSoft Financials and Human Capital Management.

[4] Pinellas is in the process of replacing three legacy systems with Oracle Financial Accounting software.

[5] At the time of our survey, Duval County/Jacksonville had purchased, but had not implemented the Actuate PM software tool.

## Table 3: Estimated Total Cost of Ownership (TCO) for an ERP Implementation

EquaTerra provided a five-year estimated total cost of ownership for an ERP implementation at Broward County, summarized below.

| | Year 1 | Year 2 | Year 3 | Year 4 | Years 5 | Total Cost |
|---|---|---|---|---|---|---|
| **Software Licensing and Hardware** | | | | | | **$ 6,178,050** |
| Software License | $ 2,370,500 | | | | | 2,370,500 |
| Annual Maintenance | 521,510 | $ 521,510 | $ 521,510 | $521,510 | $ 521,510 | 2,607,550 |
| Hardware | 1,200,000 | | | | | 1,200,000 |
| **Third Party (Contracted) Services:** | | | | | | **$ 41,330,228** |
| Application Development, Maintenance and Support | 1,275,000 | 1,732,500 | 2,117,500 | 192,500 | | |
| Systems Integration | | | | | | |
| Project Management | 672,750 | 685,688 | 342,844 | | | |
| Team Leaders: | 7,501,163 | 9,153,929 | 3,871,871 | | | |
| Team Leaders to represent County staff | 936,000 | 954,000 | | | | |
| **Subtotal Systems Integration Services** | | | | | | 29,435,744 |
| Pre-Project Training | 797,813 | 460,015 | 222,813 | | | 1,480,640 |
| Third Party Assurance Services | | | | | | |
| Project Executive | 585,000 | 596,250 | 298,125 | | | |
| Functional Change Management Lead | 468,000 | 477,000 | 378,000 | | | |
| Training Lead/Developer(s) | 1,560,000 | 1,464,000 | 708,750 | | | |
| Technical Change Management Lead | 468,000 | 477,000 | 238,500 | | | |
| **Total Third Party Assurance Services** | | | | | | 7,718,625 |
| Contractor Expenses | 1,012,942 | 1,156,848 | 525,428 | | | 2,695,218 |
| **Internal Efforts** | | | | | | **$ 1,086,300** |
| Broward Project Management Office | 362,100 | 362,100 | 362,100 | | | 1,086,300 |
| **Estimated Annual Costs of ERP** | **19,730,778** | **18,040,840** | **9,587,440** | **714,010** | **521,510** | **48,594,578** |

(Source: EquaTerra Task 3.3 – Total Cost of Ownership Model (5-26))

## Table 4: Independent Studies of Broward County Current State

Broward County commissioned three independent studies of technology and processes. The table below summarizes the consultants' estimated cost of recommended technology and fees paid by Broward County for each study.

| Consultant Study | Estimate Cost of Recommended Technology | Study Fees |
|---|---|---|
| **Government Finance Officers Association (GFOA)** Technology Needs Assessment, September 2007 | $10.5 – 25.6 Million 5 year Total Cost of Ownership | $98,855 |
| **SciCom** Broward County Enterprise Resource Planning ("ERP") Due Diligence Report – Detailed Supplemental Analysis, April 2008 | $33 Million *estimated based on market research, vendor quotes, and other sources | $74,500 |
| **EquaTerra** September 2009 | $46.2 Million (if outsourced) to $48.6 Million | $370,804 |

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## Table 5: CGI Advantage User Sites

This listing identifies government and educational jurisdictions using the same financial accounting software currently licensed and used by Broward County.

County Government

**Baltimore County, (MD)**
**Cobb County (GA)**
**City and County of Denver (CO)**
**Fulton County (GA)**
**City and County of Honolulu (HI)**
**Lane County (OR)**
**Los Angeles County (CA)**
**Mecklenburg County (NC)**
**Monterey County (CA)**
**Ocean County (NJ)**
**Olmsted County (MN)**
**Orange County (CA)**
**Palm Beach County (FL)**
**Salt Lake County (UT)**
**San Bernardino County (CA)**
**San Diego County (CA)**
**San Mateo County (CA)**
**Santa Clara County (CA)**
**Tulare County (CA)**
**Ventura County (CA)**
**Volusia County (FL)**
**Wake County (NC)**
**Westchester County (NY)**

Municipal Government

**City of Anaheim (CA)**
**City of Austin (TX)**
**City of Cincinnati (OH)**
**City of Gainesville (FL)**
**City of Los Angeles (CA)**
**Columbus Consolidated Government (GA)**
**City of Midland (TX)**
**New York City (NY)**
**City of Norfolk (VA)**
**City of Regina (CA)**
**City of Richmond (VA)**
**City of Roanoke (VA)**
**City of Rockville (MD)**
**City of Springfield (IL)**
**City of Tucson (AZ)**

Other

**CalTrans**
**Colorado Division of Wildlife**
**Denver International Airport (CO)**
**Idaho Transportation Department**
**Southwest Florida Water Mgmt. District**

Educational Institutions

**Aldine Independent School District, (TX)**
**Anne Arundel County Public Schools (MD)**
**Baltimore County Public Schools, (MD)**
**City of Fresno School District (CA)**
**Northern Arizona University**
**Oakland Intermediate School District (MI)**
**Prince William County Public Schools (VA)**
**Savannah·Chatham Public Schools (GA)**

State Government

**State of Iowa**
**Commonwealth of Kentucky**
**State of Maine**
**Commonwealth of Massachusetts**
**State of Missouri**
**State of Utah**
**State of Wyoming**