Enterprise Resource Planning Feasibility Study

MILWAUKEE COUNTY, WI | FEBRUARY 2016

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1 ERP System Feasibility Study

1.1 PROJECT OVERVIEW AND EXECUTIVE SUMMARY

1.1.1 PROJECT BACKGROUND

Milwaukee County was formed in 1835, then a part of the Michigan Territory. Prior to that, the area had been settled by a variety of Native American tribes, and was explored by French Priests and traders as far back as 1674. The name “Milwaukee” is generally believed to be derived from a Native American term meaning “good land”.

Today Milwaukee County is, by population, the largest county in the State of Wisconsin and the 47th largest in the United States with 956,023 residents. Milwaukee County is one of the few fully incorporated counties in the United States and includes 19 municipalities that range from a large urban center in the City of Milwaukee with 597,900 residents to small villages such as Bayside with a population of 4,389.

The County anchors the Greater Milwaukee Metropolitan Area, which has a population of more than 2 million and includes seven neighboring counties: Waukesha, Racine, Washington, Ozaukee, Dodge, Jefferson, and Walworth.

With a $1.3 billion budget and over 4,500 employees, Milwaukee County contains the traditional operations of County government to include, but not limited to, law enforcement, judicial court services, parks and recreation, highway, behavioral health, jail and juvenile detention, airport operations, and a zoo. County facilities range throughout all of Milwaukee County with major concentration in the City of Milwaukee, Wauwatosa, General Mitchell International Airport, and Franklin.

The objective of the Enterprise Platform Modernization feasibility study was to examine the strengths and weaknesses of the County’s primary enterprise systems and functions to determine whether they can sustain Milwaukee County’s business in the future, or whether it is advisable to seek an alternate solution.

The County determined that an ERP feasibility study be completed to develop a business case to replace the system. Considerations include:

- Milwaukee County business leaders have decided to modernize and make every effort to optimize current business systems and processes.
- The current financial and management accounting systems are dated and in need of significant enhancement or replacement, which presents risks for Milwaukee County that require remediation.
- The needs of several business units are not being met adequately using the current application set, including Human Resources, Procurement and Capital Management and Monitoring.
- Complaints from the user departments are increasing steadily and business units are implementing independent workarounds to suit their needs. A significant amount of work is performed outside of the mainframe computer system using either Excel spreadsheets or database programs. This practice increases the risk that business rules will be applied inconsistently or data transferred incorrectly.
- There is a great need for an integrated view of core organizational business functions to quantify the value of enterprise level investment strategies
- There are increasing concerns about effectively maintaining private, confidential employee and retiree data in a manner consistent with data protection and privacy standards.

1.1.2 PROJECT SCOPE

The intent of this project was to perform an assessment of the County's current financial and human resources environment and identify key strategic options and recommendations. In addition to these core ERP functions, the project included an assessment of the major best-of-breed and third-party systems used by the County. Specifically, the project scope included conducting project management tasks, reviewing documentation, conducting interviews and assessing the County's technical environment to develop this ERP System Feasibility Study for the following functional areas:

County Systems Providing Functionality for the Following	
General Ledger	Human Resources
Budgeting	Payroll
Accounts Receivable	Time and Attendance
Accounts Payable	Contract and Document Management
Purchasing	Project Accounting
Fixed Asset Management	Treasury Management
Cash Receipting	Financial Reporting
Inventory Management	Pension Administration
Grant Accounting	

The project scope excluded recommendations for the following specific systems and processes:

- Customer relationship management (CRM system)
- Most law enforcement processes that are not associated with budgetary, financial, payroll, or human resource management.
- Jail management system (jail & inmate operations)
- Land development and land management processes and systems
- Court specific processes and systems that are not associated with budgetary, financial, payroll or human resource management.
- Project management systems
- Enterprise Asset Management and Fleet Management
- Tax Billing & Collection (Real, Personal Property, etc.)
- Maintenance management processes and systems

However, interfaces to many of these systems were included as part of the study due to the importance of their function in supporting the related business processes covered within the scope of the project. Significant strengths, weaknesses, opportunities, and threats related to these existing systems have also been included in this assessment.

1.1.3 PROJECT APPROACH

The following chart illustrates the approach that was taken in performing the County's ERP Feasibility Study:

The project was conducted using a participative and inclusive approach with significant input from County management and staff to ensure accuracy, completeness, and ownership of the resulting recommendations. Participation was obtained through the following activities:

- Defining a Project Management Office to ensure prompt and clear communication with the County department staff, manage project activities, ensure project deliverables were reviewed by the appropriate County staff, and to provide progress updates to the County management and other interested stakeholders.
- Conducting a project kick-off meeting and building awareness around the project.
- Facilitating weekly project management status meetings to manage project activities and provide status updates.
- Conducting interviews with the County departmental end users to evaluate current systems and business processes. Departmental management was encouraged to participate and invite team members.
- Collection and review of numerous documents provided by the County, as well as completed questionnaires by the departments.
- Soliciting input from the participating Departments that included the evaluation of the following items:
    - Identification of current systems
    - Duplicate entry / re-keying of information
    - Issues with / shortcoming of current systems

  - Strengths of existing systems
  - Unused features / functionality of Advantage/Ceridian
  - Opportunities to interface systems
  - Unique County business rules
  - Vendor interaction
  - Current technology project initiatives / Future technology projects

- Requesting and collecting data which was used to develop a total cost of ownership (TCO) analysis.
- Developing this ERP study

The overall goal for implementing new technology not only focuses on the technology itself, but also aims to enhance existing business processes performed by individual departments across the County. Technology is intended to enhance departmental business processes by:

- Making them more efficient
- Making them more effective
- Improving decision-making
- Providing enhanced customer service to both internal and external customers
- Improving access to information
- Streamlining processes to reduce costs.

The intent of this ERP Feasibility Study was to define a future course of action for the County's Advantage/Ceridian investment and related applications and side systems. The approach utilized for collecting information included interviews with primary process and systems owners, IT staff, and the County department users regarding the existing technologies and processes.

1.1.4 SUMMARY OF OBSERVATIONS

The approach Plante Moran followed in developing the report focused on identifying how the current suite of technology applications supports Milwaukee County's business goals and denoting opportunities for improving the effectiveness of business processes performed at the County in the future.

Systems

While the County has a significant number of side systems to address the financial, procurement and human resources functions across the organization (further detailed in the Current State Assessment section), the primary systems in use to centrally manage these functions are as follows:

CGI – Advantage	Ceridian	Other
General Ledger	Human Resources	Budgeting (BRASS)
Financial Reporting (Caseware utilized for CAFR)	Payroll	Purchasing (SciQuest)
Treasury Management (transactional system is US Bank)	Time and Attendance	Pension Administration (Vitech V3)
Accounts Payable		Contract Management (Varies by Department)
Accounts Receivable (detail tracked in systems at the department level)		Grant Accounting (varies by department)
Project Accounting (detail tracked in systems at the department level)		Accounts Receivable (varies by department)
		Asset Management (varies by department)
		Cash Receipting (varies by department)
		Inventory management (varies by department)
		Cornerstone On-Demand (Training, Licenses and Certifications, Applicant Tracking System, Learning Management, Recruitment)

Current State Processes

Plante Moran developed a performance rating scale which is used to compare the County's current position relative to best practice. In performing this analysis, Plante Moran used the following scale to indicate whether a process is under performing, stable or best practice. Listed under each performance level are various process characteristics which may be evident at each level.

Process Performance Rating Scale

Under Performing	Stable	Best Practice
• Inconsistent • Inefficient • Not documented • Manual	• Consistent • Some inefficiencies • Documented • Automated	• Optimized • Measured • Continuous improvement • Automated with workflow

The following provides a summary gap analysis based on the details provided in the following section.

Performance Rating

Process Areas	Under Performing	Stable	Best Practice
General Ledger		✓	
Budgeting		✓	
Accounts Receivable	✓		
Accounts Payable	✓		
Purchasing		✓	
Fixed Asset	✓		
Cash receipting		✓	
Inventory Management	✓		
Grant Accounting	✓		
Human Resources	✓		
Payroll		✓	
Time and Attendance		✓	
Contract management	✓		
Project Accounting	✓		
Financial Reporting		✓	
Pension Administration		✓	

✓ - Plante Moran's assessment of current process at the County

Key Findings

Overall, the key findings and opportunities are further described both in summary and in detail in the Current State Assessment section of this report, however we have summarized the findings and opportunities in this Summary of Observations section as presented below.

1. Core financial system must be upgraded/replaced by 2020	Both Advantage and Ceridian will have limited support over the next few years. In addition, as a result of the original CGI/Advantage fix for the 'Y2K' issue, Advantage's new 'last year' for processing is year 2019 as it will not accept dates in Year 2020 (as the system assumes it's year 1920). Overall, without a major upgrade or very technical programming solution, the County will be unable to utilize Advantage in 2020.
2. Reliance on Intensive Paper-Based Processes	The fragmentation of current enterprise systems has resulted in a reliance on manual processes as the systems cannot communicate with one another electronically, most notably in the human resources and payroll functions. For example, departments keep separate employee files outside of Ceridian HPW.
3. Lack of Integration Between the Core Financial System and Standalone Systems is Significant	Numerous standalone systems are used to report and gather data resulting in splintered access to information. Reliability of data is an issue in some County areas because information is not processed in real-time and there is limited ability to access current information in the required systems. The cost to reconcile data between systems could be significant and is performed inconsistently. In addition, limited integration between the Ceridian HPW and BRASS budgeting systems does not allow the County to accommodate position control activities in real time.
4. Some Modules of current County Systems not Fully Utilized	In many instances, functionality within the County's systems, were available but not utilized. For example, fixed assets, project accounting and accounts receivable functionality/modules are currently not fully utilized in the Advantage financial system. Manager Self Services and associated functionality was not rolled out with the HR suite of applications. While the reasons for not using facets of the different systems may be valid, the result is a patchwork of applications that does not completely meet the needs of the County.
5. Data Integrity and Lack of Real-time Data Accessibility to End Users	As information is maintained in separate, isolated repositories, County staff are able to access only limited real-time data via the County's reporting repository on the Intranet. Financial, Human Resources and purchasing data lacks timeliness, and therefore reliability, making it difficult to maintain a data-driven decision-making environment. Data integrity issues are a result of over-customization, heavy manual data entry and ineffective reporting capabilities within the system.
6. Lack of an Effective Method of Tracking Key Information Has Led to the Implementation of Manually Intensive,	These "side systems" restrict access to critical enterprise information for decision-making. In addition, many of these systems are composed of individual Excel spreadsheets and Access databases which are not centrally accessible. With data fragmented and residing in multiple, non-integrated or networked

	Redundant, Systems and Processes	side systems, aggregated reports require substantial manual effort to prepare and reconcile. Because these side systems lack access to key reference data and do not incorporate key business rules, they possess the potential for accounting errors and incorrect processing.
7.	Enforcement of Policies and Procedures	In many instance policies and procedures exist, however they are not consistently followed. For example, circumventing contract management policies is a common occurrence. Strict enforcement of all County policies is required to ensure compliance with internal controls.

Opportunities

There were a number of consistent themes throughout each of the functional areas. The unmet needs which management and staff from Department throughout the County consistently expressed as opportunities for improvement, are summarized as follows.

1. ***Review of County Position Control policies*** and procedures and better integration between the HR and Budgeting systems.
2. ***Full integration between all modules***, allowing for the reduction of side systems.
3. ***Real-time, immediate update and access*** to the financial and human resources information (with appropriate access rights).
4. A consolidated system with ***user-friendly features*** (e.g., easy navigation, drop down boxes, drill down functionality, validation of data upon entry, etc.) that offers on-line help functions and customized system documentation.
5. User-friendly, user-driven and ***flexible reporting tools*** with distributed, securitized access to all users. This should support the information needs of executive staff and the County Board.
6. Thorough position-specific ***training on the system***, users need to learn not only what they need to do on the system, but the ramifications and the logic underlying the transaction, understanding the big picture, as well as the detailed specifics of each job.
7. ***Elimination of paper-based processes*** and replacement with automated, online workflows and approvals
8. ***Streamlined business processes*** incorporating established best business practices.
9. ***Self-service capabilities*** and other “e-government” opportunities such as manager self-service, employee self-service, remote time entry and mobile workforce capability.
10. ***Performance measurement*** and improved reporting capabilities.

While some County employees are comfortable with specific current systems and are able to obtain necessary information from them, Plante Moran consultants identified many who are dissatisfied with the current environment, from the end-users who work with the systems daily, to the managers and other stakeholders who have difficulty receiving timely and accurate information regarding the County’s financial condition as well as employee performance. The lack of interfaces between multiple systems in the current environment, the lack of an effective reporting tool available to end-users, and the dependence on antiquated and an out-of-date paper-based environment have left the County with an array of time consuming and manual business processes. Overall, the majority of the unmet needs that are listed above could be met by a public sector-focused ERP system with a common database.

1.1.5 EXECUTIVE SUMMARY OF OPTIONS AND RECOMMENDATIONS

Consistent with project objectives and based on the assessment of the current functional and the technology environment, Plante Moran believes the County has three primary options in regard to the strategic direction of a future financial, procurement and personnel applications environment, with multiple alternatives within three of the options.

OPTIONS DEFINITION AND DESCRIPTION

Options	Description
Option 1: Status Quo with Baseline Cost Estimate	This option represents the County's current investment position with the resources currently in place supporting the Advantage and Ceridian environments on premise today. It also represents the existing mix of third party applications interfaced with Advantage supporting the budgeting, procurement, benefits administration, contract administration, pension administration, revenue collection, treasury, and talent management.
Option 2a: Upgrade Advantage and Upgrade Ceridian	This option represents the County's migration to the latest versions of Advantage for core financials and Ceridian for HR/Payroll. The County would continue to operate its existing best of breed systems for Budget, HR, Benefit and Procurement functions. While deemed an upgrade, this option would essentially be a 're-implementation' of both solutions.
Option 2b: Replace Advantage and Upgrade Ceridian	This option represents a competitive bid/RFP process to replace Advantage for core financials and an upgrade of Ceridian for HR/Payroll functionality. The County would replace any best of breed solutions currently utilized for core financial functionality (Budget, Purchasing) with integrated functionality available within the new core financials suite of applications. Ceridian would be upgraded to the most recent version for HR/payroll functionality. Interface requirements between Ceridian and the new financial solution would be documented in the RFP for core financials and Statement of Work (SOW) for the Ceridian Upgrade.
Option 2c: Upgrade Advantage and Replace Ceridian	This option represents a competitive bid/RFP process to replace Ceridian for HR/Payroll functionality and an upgrade of Advantage for core financials. The County would continue to operate its existing best of breed systems for Budget and Procurement functions. Interface requirements between Advantage and the New HR/Payroll solution would be documented in the RFP for HR/Payroll and SOW for the Advantage Upgrade.
Option 3a: New best of breed ERP Environment	This option assumes the County reinvests in multiple new, best of breed ERP solutions to replace the current Advantage and Ceridian applications. The County would prepare multiple RFPs for these solutions.

Options	Description
Option 3b: New fully integrated ERP Environment	This option assumes the County reinvests in a new, fully integrated ERP solution that would take advantage of the capabilities of a public sector focused ERP solution. The County would prepare an RFP for a solution that incorporates all of the required functionality currently provided by Advantage, Ceridian and key best of breed solutions.

Plante Moran performed a total cost analysis (TCO) for each option presented above. This analysis takes into consideration the one-time cost as well as estimated ongoing costs, for each option based on assumptions defined later in this report. A summary analysis of the total cost of ownership for each option identified in the report is provided in the table below:

Cost Category	Option 1: Status Quo	Option 2, Alternative A: Upgrade Advantage and Upgrade Ceridian	Option 2, Alternative B: Replace Advantage and Upgrade Ceridian	Option 2, Alternative C: Upgrade Advantage and Replace Ceridian	Option 3, Alternative A: New Best-of-Breed Environment	Option 3, Alternative B: Fully Integrated ERP
One Time Cost	N/A	$5,935,000	$11,541,440	$12,538,000	$18,144,000	$17,994,000
Annual On-Going Cost	$4,901,000	$4,739,860	$4,986,860	$4,734,000	$4,956,000	$3,820,800
Five Year TCO[1]	$26,021,000	$26,479,000	$32,590,000	$32,900,000	$38,878,000	$33,979,000

[1] Five year TCO is adjusted for 3% annual inflation.

1.1.6 PLANTE MORAN RECOMMENDATION AND NEXT STEPS

While small improvements could be made or added to the current applications which would mitigate the investment required by changing systems, the primary challenge with maintaining the status quo would be the inefficiencies and lack of centralized information due to multiple systems and side systems. Plante Moran does not view Option 1 as a viable long term strategy.

As such, Milwaukee County should direct its analysis efforts towards evaluating the advantages and disadvantages of changing the current environment to either upgrading the existing primary enterprise systems (and further deploying and integrating current systems) or replacing them with a suite of integrated ERP modules from an ERP provider.

Given the functional and technical complexities associated with interfacing the County's multiple best of breed and standalone systems, as well as the related need to fundamentally re-implement many aspects of the existing financial, procurement and personnel systems, the County would be best served to move toward an ERP approach via a competitive bid process. Overall, this strategy would provide Milwaukee County with the following benefits.

1. Opportunity to Leverage Technology for Business Process Improvement: The strategy of moving toward leading ERP packages will lead to the standardization of business processes across the organization. Because customization increases both current and future software costs, the County can adopt the "vanilla" processes and best practices embedded in the software. An added benefit of this is greater discipline across departments.
2. Comprehensive Functionality: The strategy of moving to an integrated ERP solution is to provide the majority of functional and technological needs of an organization in a comprehensive suite of integrated applications. The major components of an enterprise solution are accounting and finance; payroll/human resources management and purchasing.
3. Reduce Software Fragmentation: Compared to the multitude of standalone systems that comprise the current technology environment, an ERP would be the backbone of a comprehensive administrative systems strategy. In addition, the selection of an ERP system will guide future IT investment decisions, as those investments would need to interface with the ERP software.

Assuming that the results of the study are considered and the recommendations for system selection and implementation presented in the Recommended Next Steps section of this report are followed, we recommend that Milwaukee County consider Option 3: Replace Current Systems with a New Fully Integrated ERP Environment.

2 Current State Assessment

2.1 OVERVIEW OF FINDINGS

This section evaluates the current financial management, human resources, payroll and other administrative systems at the County from a functional perspective. The analysis is based on the results of interviews and group discussions with County staff, industry research, review of County policies and system observations completed by Plante Moran consultants.

The key objectives of our review are to learn how the various systems work together, to determine the extent to which the organization's needs are being met by the current systems, and to identify the current issues and any unmet requirements that any future enterprise system must address. By analyzing the current system, we believe that the County will be better prepared to establish strategic priorities in deciding whether to embark on a systems replacement project.

The approach Plante Moran followed in developing the Feasibility Study focused on:

1. Identifying how the current technology applications support the County's business goals
2. Denoting opportunities for improving the effectiveness of business processes performed at the County in the future.

While the current technology environment supports the daily needs of the County – for instance, vendors/staff are paid and financial transactions are processed – the current system structure has left the County with many challenges. The following is an overview the key strengths, weaknesses, opportunities and threats based on the County's current systems environment, the ERP system selection project status, and the implementation considerations / plans to date:

Strengths	Weaknesses
1. There is a high level of County management support to engage stakeholders in improving business processes 2. IMSD support and other County staff have developed effective workarounds to address many system limitations 3. There is a strong desire to reduce paper-based processes 4. Multiple County staff have experience using newer ERP systems and are increasing ERP awareness throughout the County 5. County stakeholders have shown growing interest in participating in the selection process 6. The 'Intranet' has improved the County's ability to analyze financial data 7. Pent up demand has primed users for system changes to improve their business processes	1. Limited tools for end users to develop reports for access to critical information 2. Lack of integration between many legacy system components 3. Complex ad hoc query capabilities frustrate users and discourage use of current systems 4. Many users lack access to certain system components resulting in a proliferation of redundant systems 5. Departments use side systems extensively to track relevant data across their functional areas 6. Limited ability to integrate with other County systems 7. Limited ongoing training available. As a result, new staff members may not be receiving enough training to fully utilize existing systems. 8. Difficulty in identifying errors and flags in Advantage, which causes inefficiencies. The Comptroller's Office has to spend extra time serving as an Advantage helpdesk to correct errors in the system.

Opportunities	Threats
1. Modern systems have stronger standard reporting capabilities supplemented by robust reporting tools 2. Transition to an information self-service environment 3. Redesign processes during implementation to take advantage of best practices built into new systems 4. Leverage lessons learned from other County technology implementations 5. Strengthen likeliness of implementation success through grassroots project involvement 6. Vendor solutions typically incorporate public sector best practices 7. Improved interfacing with other County systems and external providers 8. Shared database for reporting Countywide 9. Increased automated electronic workflows	1. Legacy County policies and legal decisions may lead to extensive customization, limiting the ability to utilize a commercial off the shelf solution 2. Staff expectations for a future system must be managed in the event that not all requested functionality can be provided 3. System functions alone do not solve problems. This requires process redesign, procedure and policy changes, and changes to roles and responsibilities 4. Expectations must be managed regarding the balance between having robust data tracking capabilities versus a simple user interface 5. Strong institutional and current system knowledge is concentrated in staff nearing retirement 6. General anxiety about change 7. Need for ongoing system support staffing 8. Inherent complexity with data conversion and integration 9. Managing the change required when moving from paper-based processes to electronic processes

2.2 PROCESS PERFORMANCE

The overall goal for business process improvement is to enhance existing business processes performed across the County and to optimize the use of technology to improve services. Recommendations presented in the section are intended to enhance these business processes by:

- Centralizing operations to improve economies of scale
- Automating manual activities to make them more efficient
- Enhancing automation currently in use to further streamline processes
- Reducing error rates and re-work
- Reducing manual reconciliation effort
- Allowing for better reporting to improve decision-making capability

As such, based on the responses to our Questionnaires and interactions during the process owner and cross functional interview sessions, Plante Moran developed a performance rating scale which is used to compare the County's current position relative to best practice. In performing this analysis, Plante Moran used the following scale to indicate whether a process is under performing, stable or best practice. Listed under each performance level are various process characteristics which may be evident at each level.

Process Performance Rating Scale

Under Performing	Stable	Best Practice
• Inconsistent • Inefficient • Not documented • Manual	• Consistent • Some inefficiencies • Documented • Automated	• Optimized • Measured • Continuous improvement • Automated with workflow

The following provides a summary gap analysis based on the details provided in the following section.

Performance Rating

Process Areas	Under Performing	Stable	Best Practice
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Fixed Asset	✓		
Cash receipting		✓	
Inventory Management	✓		
Grant Accounting	✓		
Human Resources	✓		
Payroll		✓	
Time and Attendance		✓	
Contract management	✓		
Project Accounting	✓		
Financial Reporting		✓	
Pension Administration		✓	

✓ - Plante Moran's assessment of current process at the County

2.3 GENERAL LEDGER / FINANCIAL REPORTING/BUDGET CONTROL

The County utilizes the CGI Advantage system for General Ledger and Budget Control functionality. Advantage was implemented over 15 years ago and is still supported by the vendor to this day. The Advantage Financial is a mainframe based system, which requires a nightly cycle for processing transactions posted during the day. The nightly cycle updates all tables, and the general ledger system. The processing schedule delays analysis of financials for current transactions until the next day. The current system is a mainframe based system. A majority of the organization utilizes Advantage for basic financial reporting purposes via the County Intranet; however, many of the departments utilize Excel spreadsheets for budget tracking/reporting, as reporting from Advantage has been described as difficult. Caseware is used as a financial reporting tool, primarily to develop required financial statements for the County's Comprehensive Annual Financial Report (CAFR).

STRENGTHS

The strengths of the current General Ledger / Financial Reporting environment include:

1. **Chart of Accounts Structure:** The Chart of Accounts adequately accommodates required GAAP based on GASB standards for the County's CAFR. However, we are limited to the number of characters for the structure, which limits the number of accounts that we can create.
2. **Audit Trail / Drill-Down Functionality:** Basic audit trail and drill-down functionality is available within Advantage. The primary audit trails utilized are approval logs generated from the system.
3. **Closing Flexibility:** Advantage effectively supports period end closings.
4. **Familiarity with system:** The current Comptroller's Office staff is knowledgeable and familiar with the current system.
5. **Useful query/reporting tools**: Users identified the Intranet financial reporting tool as a major strength that needs to be retained in a new solution. Staff would, however, like additional functionality, such as the ability to better drill further into information from the reports.
6. **Upload tools:** Advantage has functionality to upload journal entries from Excel into the financial system, although that functionality can be cumbersome to use.

WEAKNESSES

The weaknesses of the current General Ledger / Financial Reporting environment include:

1. **Project Labor:** Project Labor Posting requires that Central Accounting post any entries within one month from creation. The project labor posting utilizes an entry number that is identical from month to month. If the entry is not cleared each month, the next month's entry will not be generated, which will require manual calculations outside the system and journal vouchers to update.
2. **Upload Limitations:** The current system has a 100 line limitation when uploading journal entries and budget transfers from an Excel template to the general ledger. Further, the system does not give the ability to enter multiple entries in one upload. Data from an upload entry is only available after an hour, due to the timing of the background mainframe batch processing.
3. **Lack of Real Time Data:** The current system does not provide the ability to view real-time data from uploads, or for any financial transactions, which causes difficulty in analyzing financials.
4. **Limited Query / Reporting Tools:** The current system does not allow the County to extract/query any and all general ledger data elements necessary for tracking and reporting, including user ID's associated with the data entry process. Multiple users identified limitations with report generation for agencies and budget owners for monthly fiscal reporting.
5. **Cumbersome Audit Trail Functionality:** Data associated with the audit trail is not easily viewable as the user must load an additional screen to see more information.
6. **Abundance of Manual Journal Entries:** Currently, monthly recurring journal entries are not automatic and require a level of effort to configure every month.
7. **Chart of Account Limitations:** System flexibility with regards to the chart of accounts is limited. For example, four digit account numbers are restrictive and do not meet the needs for the number of accounts needed. In general, a desire for a review and redesign of the current Chart of Accounts was communicated by multiple process owners.

8. **Separate Technology Necessary for CAFR Reporting:** The County must separately download balance information for actual budget, original budget, final budget, and encumbrances for import into Caseware.
9. **Limited Adjustment Period Functionality:** While not a major issue, users have requested an additional closing period for post-closing entries after the auditors' final review.
10. **Ability to Reverse Incorrect Entries:** When a journal entry is posted to the wrong account it must be manually adjusted via a separate entry posted to the system versus using the entry previously posted to system.
11. **Reversals**: Automated reversals are possible but are cumbersome. Occasionally a reversal will change the journal entry number.
12. **Budget Set-Up and Maintenance requires an interface:** The Adopted Budget file is received manually as an Excel file from BRASS. IMSD must load the file into Advantage, and the final budget edits are made with manual modifications to budget tables or budget adjustments.
13. **Basic Reports, including Trial Balance:** The system does not provide for a basic trial balance as a standard report that is both printable and downloadable for use by accountants.
14. **Year-end processing:** The year-end encumbrance review process is not currently managed in the system resulting in inefficiencies. The AP department sends a list of encumbrances every November to each department confirming whether they should be left open or closed.

OPPORTUNITIES

1. **Improved Reporting:** End-user financial reporting will be greatly improved through either an Advantage upgrade or the implementation of a new system.
2. **Less manual data entry:** A modern ERP system typically provides the ability to upload journal entries and budget transfers from Excel to the general ledger, without a line limitation, as well as the ability to enter multiple entries from one upload. Moreover, modern ERP systems typically have built in integration between the general ledger and other modules, such as budget management, thus reducing the need for data manipulation outside of the ERP system.
3. **Real time processing:** A modern ERP system should allow for automatic update of the general ledger when entries are approved and processed. Currently, batch system processes run overnight making the ledger available the following day.
4. **Query/Ad hoc reporting capability:** A modern system will have the ability to extract/query any and all general ledger data elements, including all user ID's associated with the data entry process.
5. **Recurring Journal Entries:** A modern ERP system should allow for setup of automatic, monthly recurring journal entries.
6. **Chart of Accounts Optimization:** An ERP implementation effort will provide the County with an opportunity to analyze and optimize its current chart of accounts structure, streamlining it to be easier to use and to support its business plans and performance management processes.

Overall, a new system should provide users with improved reporting tools, account and budget validation at the point of data entry, and greater ability to drill down into system transactions.

2.4 CASH MANAGEMENT/INVESTMENT MANAGEMENT/DEBT MANAGEMENT

The County has the responsibility of managing both debt and investment instruments that require significant planning and tracking efforts for ensuring sufficient funds are available to cover liability and contractual obligations. The County Treasurer is responsible for investing the County's cash, resources, and investments. The Capital Finance division within the County is responsible for facilitating the debt financing process in accordance with the County's policies and State statutes.

The County Treasurer's Office currently uses the Tracker software to centrally track the County's investment portfolio. The software generates reports for analysis and tracks individual securities, maturity dates, and interest. Overall, Tracker allows the County to monitor investment advisers and compare them fairly. In addition, Public Financial Management acts as a financial advisor to the County for short term investments.

The Capital Finance Division is responsible for the majority of debt management activities at the County, including annual payments for General Obligation Bond debt service. Airport revenue bond payments are made to a Trustee monthly, who in turn makes the payment to the Depository Trust Company. Overall, the County issues about $40 million in general obligation bonds per year and manages $605 million in outstanding debt overall. The County does not maintain separate accounts for debt capital spending as debt funds are comingled with the County's general cash and investments. The County currently tracks debt capital spending in the general ledger, and utilized excel files to track project specific cost history.

STRENGTHS

The strengths of the current Investment and Debt Management environment include:

1. **Investment Management:** The current Tracker system provides the Treasurer's office with visibility into the County's investment management portfolio.

WEAKNESSES

The weaknesses of the current Investment and Debt Management environment include:

1. **Internal Control Risk Areas:** It appears that cash handling policies are department-specific rather than standardized across the County. This opens up a risk with keeping strong controls over cash handling.
2. **Labor Intensive Process for Tracking Debt Payment and Modeling:** In the current environment, County issued bonds are tracked manually in Excel, although they make up much of the funding for County capital programs. Overall, management has requested that modeling scenarios be performed for debt service as part of the County's five year forecast. This modeling will help in limiting increases in the County budget and ensure compliance with State imposed property tax limitations.
3. **Labor Intensive Process for Tracking Debt Spending and Revenue:** While payments are made and cash receipts are posted to the General Ledger system, much of this same data is transferred to Excel sheet to monitor spend and revenue by project. The spending by project is also associated with the specific bond issue, since a project may be funded by multiple bond issues. When the County needs to divest of any specific assets, it is a very labor intensive process to calculate any remaining debt associated to a specific County asset or to determine if the bond issue is still in compliance with debt covenants. Overall, with the current manual processes and Excel based system, timely response to inquiries from departments on divestments is difficult.

OPPORTUNITIES

A financial system selection and implementation effort will provide the County with the ability to evaluate a system that can meet its upcoming debt and investment management needs. Such an investment would be worthwhile if it increases the County's ability to efficiently manage its debt and investments (striving for a low management/overhead rate).

1. It is very common for ERP vendors to partner with investment management solution providers to offer a direct integration with the ERP system. A direct integration with the County's ERP system would:
    a. Reduce administrative overhead involved in creating journal entries for account updates in the GL and provide greater line item control options.
    b. Provide the County with options to have accounts receivable represented in addition to an expense-side module so a single cash flow analysis could be represented.
    c. Provide a debt management solution to maintain either debt service schedules or debt funded capital project spending. A solution offered by an ERP partner to either of these issues could save time and provide better modeling and management.

THREATS

While the County is looking to an ERP solution for Investment Management, the County's contract with an outside vendor for Investment Management services and monitoring may make the software solution unnecessary. As the County currently works with PFM (Investment Services) for some components of Investment Management, there might not be a true business case to be made in allocating resources to a software system for investment management.

Failure to provide a solution to Debt Payment Management and Debt Spend Tracking could create tax consequences and penalties to the County if the manual process were to fail. The continuation of a manual process may also lead to non-compliance with government regulation.

2.5 BUDGETING

The County's annual operating and capital budgets are developed with BRASS budget software, using extracted financial data from the County's Enterprise Resource Systems (Advantage/Ceridian). Forecasting is completed utilizing the Municast tool, which takes in actuals and develops a five year forecast based on County budget assumptions. Budget adjustments are a manual process usually accomplished monthly via paper fund transfer packets that are reviewed and approved by the County Board.

In the future, the Budget group would like to pursue a performance management/balanced scorecard initiative and implement more of an outcome based budgeting approach.

STRENGTHS

The strengths of the current budgeting environment include:

1. **Familiarity with the process and system**: County staff has familiarity with BRASS system.
2. **System and process stability**: The BRASS system is stable and has few issues. In addition, the budget development process is well known throughout the County.

WEAKNESSES

The weaknesses of the current budgeting environment include:

1. **Budget narrative structure is rigid**: The County requires changes to the current budget narrative structure and would like a system with more flexibility in configuring the current structure.
2. **System is not intuitive**: BRASS can be fairly difficult to learn. When new staff join the County, it can take a while for them to become comfortable with the system.

3. **Position Control Interface**: Lack of integration with Ceridian HPW results in position control being a manual and time consuming process.
4. **Position Control Process Ownership**: Overall, it is not clear where the actual position control resides. Overall, the lack of clarity regarding which department owns the Position Control process makes this an area where the County should redefine responsibility review protocol for existing processes.
5. **Lack of Transparency:** It is difficult for departments to easily see/review their budgets during the budgeting process. When narratives are being developed, departments need a budget merge from DAS in order to finish their requested narratives, rather than the information being readily available.
6. **Budget Fund Transfers:** Budget appropriation transfers are currently uploaded through an Excel spreadsheet by Accounts Payable. Rather than a manual process, departments should be able to enter information directly into a system for processing.
7. **Budget Books:** Assembling the Budget Books is a very manual and time-consuming project, due to the multiple file formats utilized. Currently, all documents must be exported to PDFs, then printed and assembled in the right order. Ideally, any budget documents should be electronic, and automatically assembled by the system.

OPPORTUNITIES

In an optimally configured system, the County would be able to accurately define and track progress performance measure elements while taking advantage of the following additional opportunities:

1. Streamline and make any overhead cost allocations more transparent to easily check completeness and accuracy.
2. Avoid double entries in two systems by using an integrated budgeting system.
3. Improve reporting granularity, accuracy, confidence and speed.
4. ERP systems tend to have increased user-friendliness regarding predefined module functionality and reporting capabilities.

THREATS

1. Lack of buy-in from process owning departments with respect to new business processes that may occur as a result of a new system.
2. Lack of a clear departmental owner of position control processes.

2.6 FIXED ASSET MANAGEMENT

As with many of the functional areas reviewed throughout this section, fixed asset data (tangible and non-tangible) is maintained in many different systems across the County. While there are certain system features available in Advantage that make managing fixed assets more efficient (e.g., ability to flag a purchase order as a fixed asset based on logic programmed into the system), overall, staff experience difficulty in trying to maintain the system on a day-to-day basis. Further, some data in the system is redundant but not tied together or relational. For example, there are at least two fields on the fixed asset record requiring a location; however, when staff make an adjustment to one of the location fields, the other is not automatically updated. Working with each of these problem areas can require additional time for staff to process the receipt and assignment of a fixed asset. County staff do not have a single system report to collect all information regarding the components and eligible costs to be capitalized. Based on the interviews and system observations, there does not appear to be much interaction between accounting staff and the project manager to review all costs that went into the development of the asset.

STRENGTHS

The strengths of the current Fixed Asset Management environment include:

1. **Asset Addition:** Adding an asset in Advantage provides the ability to distribute equity among multiple accounts.
2. **Asset Data:** Advantage has set fields associated with fixed assets that identify group number, useful life in years, and the depreciation method (all straight line).
3. **Asset Sale/Surplus:** Advantage has the ability to track sold or surplus assets and track profit/loss for reporting purposes.

WEAKNESSES

The weaknesses of the current Fixed Asset management environment include:

1. **Asset management & location tracking in the system**: Overall, the County does not have the ability to manage and track assets at the level of detail necessary for reporting, compliance, and forecasting in Advantage; therefore, many departments currently use side systems to track assets in more detail outside the financial system. For example, staff are unable to search assets based on type or account in Advantage. The County also does not have an accurate list of fixed assets by physical location as it is difficult for the staff to validate fixed assets against location tables in Advantage. This often causes users (for example Fleet) to procure or develop alternative systems which track related asset detail in greater depth.
2. **Integration and updates of fixed asset data in the system**: Advantage does not allow all data related to fixed assets to be updated/changed in the system. For example, if a fixed asset is entered in the system incorrectly, staff must delete and re-add which can result in a false expense. Some data do have the ability to be updated, such as some assets within the general fund; however, updates do not flow through to other Advantage modules. Further, some data in the system are redundant but not tied together (or, relational). For example, if staff make an adjustment to one of the location fields, the other is not automatic. As a second example, three different tables are required to be updated within Advantage to set parameters before a depreciation event.
3. **Lack of standardization in tagging assets**: Departments use different procedures to tag fixed assets which makes it difficult to manage/track the assets in a centralized system. For example, fleet assets are capitalized by serial numbers, computers by barcode, and general assets by numerical tags.
4. **Fixed asset data may be out of date or lagging:** Data is not always accurate or updated in real-time which can lead to inaccurate forecasting and reporting. For example, acquisition of an asset is often backdated, but the depreciation is posted to the current month.
5. **Limited visibility to fixed asset information**: Staff do not have visibility into fixed asset documentation handled by other departments. For example, depreciation calculations are not readily available to be calculated by staff; they require a request through IMSD. As a second example, the Comptroller's Office has no visibility through the fixed asset system during construction of an asset. The asset is only entered into the system when construction is completed.
6. **Calculation of fixed asset depreciation**: Manual calculation of depreciation and monthly JV's is sometimes favored because of system limitations. For example, Advantage allows only ten funds to be depreciated at a time requiring depreciation events to be run over the course of two nights.
7. **Costs of assets review**: There is limited interaction between accounting staff and the construction project manager to review and confirm accuracy for all costs associated in the development of the asset.
8. **Inability to add value to assets**: The County no longer leverages betterments because Advantage does not provide the ability to add value to assets.
9. **Transfer of assets between funds**: Only asset transfers within funds are supported by the system. Asset transfers between funds are not supported by the system at the current time.

To accomplish this transfer, an asset disposal and asset recreation are necessary and a correcting journal voucher must be created to adjust the depreciation and loss on disposal.

10. **Asset posting activity is inconsistent:** In some cases asset activity is automatically posted by the system. In some cases activity must be posted via journal voucher.

OPPORTUNITIES

With improved integration and workflow inherent in a modern ERP system, many of the issues listed above will be resolved, and tracking of the County's assets should be greatly improved. The integration of modern ERP modules enables users in various process areas to access data in other process areas, increasing the flow and visibility of data while also preventing double entry and redundancy. A new Fixed Asset system will also allow the Comptroller's office to add value (betterments) and updated useful life and depreciation accordingly. Furthermore, the ability to leverage a geographical tracking system (such as GIS) will allow the County to more accurately track assets by physical location.

THREATS

Maintaining a comprehensive, accurate and up-to-date fixed asset inventory is fragmented and labor intensive.

2.7 PROJECT ACCOUNTING

Currently, the County does not utilize a single project accounting system. As a result of our interviews with County staff, it appears that the project/cost accounting functionality in Advantage does not provide the entire project accounting capabilities that are needed. Further, there are other needs that cannot be met by Advantage: tracking of multiple projects to a single contract, tracking of work orders to a project, and tracking projects across multiple fiscal years. As a result, departments tracking projects utilize in-house systems to complete this function.

Project accounting differs from standard accounting in that it is designed to monitor the financial progress of a project rather than the overall progress of enterprise-wide elements. Here, financial reports are specifically created to track the project process and provide project managers with the ability to accurately assess and monitor project budgets and ensure that the project is proceeding on budget. Project managers can quickly address any cost overruns and revise budgets if necessary.

Project accounting also differs from standard accounting in the time period that it is reported. Standard accounting reports financial progress for fixed periods of time (annually). Projects can last from a few days to a number of years. During this time, there may be numerous budget revisions. The project may also be part of a larger overall project. For example, if an organization were constructing a new building, that would be the larger project. Telecommunications could be handled as its own project, and, as such, with a separate project budget.

Project accounting allows governments to accurately assess the ROI of individual projects and enables true performance measurement. Project managers are able to calculate funding advances and actual versus budgeted cost variances using project accounting. As revenue, costs, activities and labor are accurately tracked and measured, project accounting provides future benefits to the organizations. This proves especially important when including indirect or personnel costs into the total cost of a capital project: These costs can then be included in the total cost of the asset and capitalized.

STRENGTHS

The strengths of the current Project Accounting environment include:

1. **Capital Finance Tool:** Capital finance web tool allows departments to explain carryover entries by account.

WEAKNESSES

The weaknesses of the current Project Accounting environment include:

1. **No Central Project Accounting System**: There is no functional system implemented for Project Accounting that can be used by all departments; therefore, multiple Departments across the County are reporting using rudimentary Excel tools for project accounting activities.
2. **Project Set-Up and Tracking**: The system does not accommodate a hierarchical project structure with phases, sub-projects, tasks, work orders, etc. While Project Managers establish and track this information in their side systems for their own and other departments, the majority of staff do not have access to this information. The system also does not provide the ability to track project or overall department activities and costs over multiple years. Staff indicated a need for improved tracking of project costs, especially to facilitate any potential reimbursements. Some departments are interested in functionality for applying an overhead rate to costs to use for reimbursement requests. Finally, the Primavera (A&E) system data should be updated with project status from the project manager, but this is not enforced.
3. **Project Close Transparency**: The system does not provide the ability to partially close a project or phase of a project. In addition, the system does not provide the ability to schedule a project close at a user-specified date.
4. **Time Tracking**: Employees are able to track time spent on a specific project at the department level, but this does not tie in with the time and attendance module of Ceridian.
5. **Fixed Asset Management**: The system does not initiate the fixed assets process upon project close based on established criteria (e.g., >$5,000 for construction projects). As such, it is challenging to track asset creation date information and initial asset value for depreciation purposes.
6. **Proliferation of side systems**: Using a multitude of side systems has created widespread data integrity issues, resulting in an increase in manual reconciliation between various project management and accounting systems.
7. **Project number and name inconsistency**: Manual processes are used to create project numbers within BRASS for projects that have requested but not approved. In addition, the project table within BRASS is not searchable, so project accounting must review projects line-by-line to see whether a project exists. In addition, the character limit for a project name within Advantage is highly restrictive, and, as such, the project names differ between the various project accounting and management systems.

OPPORTUNITIES

The implementation of an integrated project management and accounting system as modularized components of an integrated ERP will allow employees to charge their time and materials to individual projects and will assist the County to move towards a true cost accounting environment. A simple, standardized narrative description of projects with project numbers for the capital budget would be useful. In addition, define a standard return on investment and be able to accurately assess.

THREATS

Data integrity issues exist within the use of numerous Excel sheets. Mismanagement is a threat, and tracking debt payments by bond issue is difficult, as is scheduling repayments. Typically, data validation is not complete until April or May for the previous calendar year accruals.

2.8 PROCUREMENT AND CONTRACT MANAGEMENT

Milwaukee County Procurement is responsible for sourcing, supplier management, procurement, spending management, and contracting. Advantage is the primary purchasing system in the County, but it is being replaced by SciQuest as the purchasing system of record at the County in 2015 and 2016. Advantage purchase order functionality is utilized; however, the contract management functionality included in Advantage was never fully utilized. As a whole, there is currently a fragmented set of systems and paper intensive processes for standard purchasing and contract management functions such as bid and quote processing, purchase order processing, contract milestone tracking and general PO processing.

Overall, the decentralized evaluation and execution of County purchasing approval guidelines and policies occasionally occurs. For example, staff noted that conflicts between different levels of authority could occur and that some departments have not consistently adhered to the County contract development and approval process. As a result, managers and departments across the county have developed contracts on their own, without Purchasing's input into the negotiation process. This inconsistent execution of procurement policies Countywide exposes the County to significant risks, such as off-contract purchasing and entering into contracts without proper review. Furthermore, contract acquisition types are not defined and therefore make it difficult to standardize the contract management process.

STRENGTHS

The strengths of the current Procurement and Contract Management environment include:

1. **Ability to accept Electronic Signatures:** The County accepts electronic signatures and has implemented Docusign.
2. **Improving eProcurement functionality:** Through the implementation of the SciQuest system, the County expects to have improved reporting capabilities, better visibility to spending, the ability to shop against contracts or price agreements, the ability to advertise posts and the ability to do approval flows based on dollar amount, vendor, hazardous material, account string.

WEAKNESSES

The weaknesses of the current Procurement and Contract Management environment include:

1. **Contract Management:** Advantage is not being used to maintain contracts which limits capabilities for accessing contract data and requires that the County maintain contracts via the creation of a purchase order. Decentralization in the purchasing process along with missing controls in the Advantage system require that both the Purchasing Division and County departments manually monitor open purchase orders. The system does not currently maintain contract expiration data and automatically carries open purchase orders are carried over to subsequent fiscal years.

   In addition, contracts negotiated by selective Departments are not routed through Risk Management, so it's possible that the terms of the contracts put the County at risk. Additionally, since not all departments follow a formal contract initiation process, it is likely that the contracts are also not routed through CBDP to check if it meets disadvantaged business requirements.

   It was widely reported that not all negotiated contracts are stored on a Countywide system, and there is limited visibility into details of a contract. As a result, many times, when a department receives an invoice from a contractor, they turn the invoice into a purchase order and have Accounts Payable make the "purchase" to pay the contractor. Accounts Payable does not know that there is a contract involved and as such cannot check that the payment they are about to make to the contractor actually matches the terms of the contract.

   Finally, vendors providing services to some of the more 'specialized' county departments (e.g. Family Care, etc.) must meet certain criteria in order to legally provide those services for the

County. Systems do not exist at the County to appropriately track criteria and ensure the contracted vendor meets those criteria prior to payment, which introduces risk. While the State certifies the County's network of providers once per year, it is possible for the County to contract with a vendor that does not meet the proper criteria and pay that vendor to illegally perform services for up to a year.

2. **Manual tracking of contract activities:** Accounts Payable monitors contracts. Users in Accounts Payable print contracts out and manage contracts manually. Departments track items in varying levels. Some departments are disciplined in their Contract Management protocols, and others rely on AP to tell them when they have spent all their money.
3. **Inconsistency in Change Order processes:** The actions departments take to process contract change orders vary throughout the County. In addition, there is no enforced process or mechanism for reporting closed/terminated contracts to procurement.
4. **Lack of electronic workflow**: Advantage's configuration is noticeably weak in supporting workflow processes. For example, purchase orders are still paper based and must be routed manually.
5. **Discount Terms:** The existing Advantage system cannot track discount terms.
6. **Batch processing:** The new SciQuest system has limitations put on it by Advantage such as the nightly batch processing of purchase orders and the inability to have more than 6 different accounting strings (funding sources) on a PO.
7. **Emergency Purchases:** There is no mechanism for emergency purchases. The County Board currently requires approval for purchases over $100,000.
8. **Bid and Quote Processing:** The County requires that before it makes a purchase over a certain dollar threshold, it must obtain quotes for the desired item from at least three different vendors, and there is no way to attach vendor quotes to PO's in Advantage. Vendor quotes are stored in e-mails and forwarded to Procurement with a document from Advantage containing information about the purchase order. Overall, bids, RFPs, and solicitations are tracked by name and number in Excel due to this limitation of Advantage. However, there is an effort to resolve procurement solicitations within Marketplace Sourcing which will allow department's to digitally store and retain three quotes on the requisition.
9. **Technology Solicitations**: When a department tries to purchase an IT item through IMSD, the department has no way to track their purchase request and is not alerted as to whether the request has been approved. If the request is not approved, the department does not know why or at what approval level the request is stuck. If the purchase is made, the department does not know where the money comes from and often does not know the purchase has been made until IMSD notifies the department that the purchased item has arrived. However, there is an effort to onboard departments to Marketplace Sourcing which will allow them to have visibility in IT hardware and software purchases which required a PO.
10. **Ability to Search:** The search feature within Advantage is not intuitive. Staff struggle with locating vendors within the Vendor file.
11. **Professional service requisitions:** For professional services contracts, the department negotiates the terms of the requisition with the vendor and notifies Accounts Payable of the results. As such, the requisition process is not standardized and could be open to risk.
12. **Policy Enforcement:** Although there is a County Ordinance outlining specific requirements over $2,000 for a P-card purchase, department employees are unaware that this requirement exists.
13. **Legal terms and conditions:** Currently, there is not a standardized set of legal conditions/terms or confidentiality agreements utilize for all County contracts.

OPPORTUNITIES

The County has reported that the roll-out/implementation of SciQuest is about 60% complete. The County's implementation of a new e-procurement system gives the organization flexibility to evaluate its current purchasing processes and determine where these processes can be improved. Moving forward, the County should consider:

1. **Invest in a document management system:** Investigating/continuing to investigate the potential investment in a document management system to associate documents to purchasing and contract transactions in the new e-procurement system. A document management system is also necessary to take advantage of vendor self-registration capabilities.
2. **Associate commodity codes to account codes:** Associating commodity codes to account codes to enable the organization to classify purchasing data by products and services. The use of commodity codes facilitates the grouping, categorization and analysis of spend data supporting the development of term contracts.
3. **Establishing workflow controls for purchases that do not require a PO:** A control to verify that the vendors W9 is on file before automatically purchasing from a vendor would eliminate the risk that purchases have been made from a vendor without a W9 on file.
4. **Tracking vendor performance:** Currently the County can't track failure to perform situations. Maintaining this additional vendor data can help the County make financial investments that have the highest ROI.
5. **Review purchasing approval workflow**: The purchasing approval workflow should specifically be reviewed and streamlined for low-dollar items in real-time.

2.9 ACCOUNTS PAYABLE

Multiple systems are utilized by the County to handle Accounts Payable functionality although Advantage is the primary system. Advantage is used for almost all payment processing, vendor record, vendor research, reporting, credit memos, contract retainage, W-9 information, cancellation/voids for all payment formats, and P-card transactions. Advantage generates the file for 1099 processing and for processing all payments. Some Accounts Payable functionality will be available through SciQuest in the future, as well.

STRENGTHS

The strengths of the current Accounts Payable environment include:

1. **Familiarity with the process:** Vendors are paid in a timely manner and some staff are accustomed to the process.
2. **Basic Workflow:** Workflow processes are available in Advantage.

WEAKNESSES

The weaknesses of the current Accounts Payable environment include:

1. **Multiple Vendor Files:** Master vendor files are being maintained both in SciQuest and in Advantage.
2. **Transparency:** Limited visibility available to departments to view data (e.g. Departments cannot see invoices against a purchase order requiring them to request a copy of the invoice from Accounts Payable; Departments don't currently have visibility to how much has been paid against a price guarantee or contract).
3. **Vendor file accuracy:** Users have concerns with the quality of general vendor file data within Advantage and have reported that multiple vendor numbers may be used. Users have also indicated that it is hard to query on vendor file information using existing Advantage tables.
4. **Policy Enforcement:** Invoices are being delivered to department offices and loading docks despite a County policy to send to the Accounts Payable office.
5. **Paper intensive process:** Accounts Payable processes are paper-intensive with limited ability to scan and route invoices and send forms electronically to Accounts Payable.

Additionally, contracts must be manually printed and physically delivered to Accounts Payable; as Account Payable will not accept documents electronically signed in DocuSign.

6. **Departments maintain detailed files of purchases:** Certain departments wish to maintain invoices and purchase orders, even though data is maintained centrally.
7. **Accounts Payable processes/system:** Many employees find the Accounts Payable process confusing and the system difficult to use (not intuitive/user-friendly).
8. **Forms not in system:** Required forms (e.g. travel advance, travel expense, and vendor request) are not currently in the system requiring departments to call AP for a recent copy.
9. **Departmental cross-charges:** The mechanism to cross charge another department is confusing to end users and it is difficult to identify the required approvers in each department.

OPPORTUNITIES

Overall, the implementation of a new ERP system will also provide the opportunity for the County to revisit the entire vendor invoice processing function. A new ERP system integrated with a document imaging solution provides significant capabilities in regards to the storage and retrieval of check, contract, invoice and vendor-related information that can be accessed centrally by AP staff or by AP clerks within the departments. Further vendor self-service functionality would provide vendors with direct access to the status of their invoices without having to e-mail or call the County.

THREATS

Data integrity will be key to a successful implementation of an Accounts Payable module. The County may want to consider proactive actions to clean up the existing vendor files in anticipation of a new system implementation.

2.10 MISCELLANEOUS BILLING/ACCOUNTS RECEIVABLE

The primary weakness identified in the receivables area is that there is not a single, enterprise-wide system that is used to provide detailed information on receivables across the County. Advantage is used only to track summary receivables to create the appropriate debits and credits to the revenue and receivable accounts. The problem with this type of approach is that County management cannot obtain a realistic picture of receivables by type (only by department or by total) without contacting each individual department. Of the dozen departments that were interviewed in the accounts receivable cross-functional interview, nearly all were using separate, non-integrated, and different databases or software. In addition, there are minimal standards around invoices, so departmental invoices could be formatted inconsistently and contain different information.

Separate from the redundant data entry and the information deficiencies this approach causes, the County may also be spending significant amounts of funds (licensing, maintenance, etc.) on the purchase and maintenance of these separate systems. At a minimum, it should be possible for the County to procure one standardized system that could be shared by all departments.

Similar to AR, cash receipting is utilized almost countywide, but separate systems are maintained to collect payments. Some departments process credit card payments while others only collect cash and checks. From a cost-effectiveness perspective, the County might be able to maximize its buying power by negotiating a single cashiering system and banking services agreement for use by all County agencies.

STRENGTHS

The strengths of the current Miscellaneous Billing/Accounts Receivable environment include:

1. **Payment Types.** In aggregate, all forms of payment are accepted at select Departments throughout the County. Greater use of credit card and electronic payments across the County will lessen the receivable transaction time and increase the ability for the County to maximize revenue collections.

2. **Use of lockbox.** Departments reported the use of payment lockboxes, a best practice revenue management mechanism.

WEAKNESSES

The weaknesses of the current Miscellaneous Billing/ Accounts Receivable environment include:

1. **Process ownership/standard County revenue policies.** Throughout the interview and documentation review process it was difficult for us to identify the 'process owner' department for County receivables. Some AR functions were located in the Treasurer's office, some with the Court Clerk, some within Department of Administrative Services and ultimately summary receivable information is logged and tracked within advantage by the Comptroller's office. Clearer ownership of the process will assist in standardizing policies and systems County-wide.

2. **Lack of standardization on billing/receivables policy limits revenue maximization.** Overall, it is our experience that the comprehensive nature and/or level integration of the billing components of the ERP system directly impact the speed of collecting and reconciling receipts. While it was reported that there is a process for the collection of outstanding bills, as departments have relative autonomy regarding how they process their billing and collections, the processing time for County accounts receivable management varies widely across the County.

3. **Detailed aging reports are not regularly available.** Many departments reported tracking their 'past-due' invoices in side systems such as Microsoft Excel and Access. It is not apparent that all departments are tracking detailed information related to accounts receivable, such as discounts, days outstanding ("aging analysis"), date the receivable was collected, and payment plans for customers who have been granted an exception to paying their bills in full on their due dates. Overall, the date the receivable was paid is important for determining which receivables were collected within 60 days of year-end for including on the modified-accrual basis of accounting.

4. **Fee management policies.** For past due AR invoices, the County has the ability to calculate interest and penalties in accordance with local and state ordinances. It was reported that not all departments are consistently applying penalties where appropriate.

5. **Invoice/billing format.** The County has a standard invoice format, however it was reported that not all Department are either aware of the format or utilizing it. Standardizing the invoice formal will assist the County in streamlining the payment processing transaction.

6. **Customer records.** As there are currently multiple AR/Cash Receipting systems through the County there are also currently multiple customer files. A central customer file will assist staff across the County with tracking receivables, processing payments and having up to date customer information on hand during the transaction.

7. **Receipt processing.** Front end cash receipting processes vary amongst departments. Consolidating cash receipting into less systems will assist in gaining greater visibility of receipts and provide additional financial controls.

OPPORTUNITIES

Historically, cash collections and accounts receivable (or "revenue management") often was a decentralized process throughout governments. To the extent they were not implemented through the ERP software, various departments of the government tended to have their own software systems for their particular operations (such as for property taxes, water and sewer, library, recreation, or airport software systems), each having different platforms and interfaces for receivables management and cash receipts. These separate systems constrained users of government services from paying for multiple services at a time (often referred to as "one-stop shopping") and limited employees' ability to access information real-time, sometimes frustrating both citizens and government employees. Additionally, this environment made it extremely difficult to understand, at an enterprise level, the current level of outstanding accounts receivable.

Utilization of a centrally accessible means of tracking all countywide receivables would allow all departments' access to a full customer record. In addition, customer data will be more secure as it will all be kept in one location. This would also assist in the creation of a standardized countywide invoice and a standardized process for submitting invoice requests.

Integrating the receivables system into the General Ledger and Cash Receipting applications will reduce the duplication of effort, and allow departments the ability to view up-to-date figures before period end processing.

At a minimum, County Accounts Receivable should be recorded by departments in a centralized system that allows for a standardized aging analysis. After reviewing available collection options, the County should establish procedures that maximize collections. Finally, reviewing and updating the revenue control and management policy establishes proper control over all receipts and receivables and helps ensure sound financial management practices. A policy manual that documents revenue control and management procedures can help implement the policy as well as serve as an effective internal control itself.

THREATS

As governmental entities impose new fees or taxes or change the related calculations, customizations may be necessary for calculating fees and reporting totals. If governmental entities are able to simplify these processes through identifying common calculations for taxes and fees, for example, software vendors may be able to incorporate these into their standard software systems. Otherwise, costs to incorporate unique calculations into software systems could be prohibitive. The cost to perform the calculation manually should be considered as well. Both of these potential costs should be considered and compared to the potential benefits of assessing new fees.

2.11 PAYROLL/TIME AND ATTENDANCE

The payroll area is responsible to ensure that employees have completed time cards and ensure that all supervisors/managers have approved employee time cards. Payroll assigns the correct pay policy to employees to validate that the employee will be paid appropriately according to all federal, state law and county ordinances. Currently, the County utilizes Ceridian HR/Payroll Web for payroll processing. More information regarding the Payroll process can be found in Appendix D of the report.

Ceridian is also utilized as the standard Time Entry system at the County, and the County intends to migrate all departments to the 'cloud' based Ceridian Dayforce Time Entry and Scheduling in the next 12-18 months. Because of public safety union rules, unique accrued OT and Holiday rules, unique

sick policies and labor level reporting requirements, the Ceridian systems have been heavily customized. A further detailed process map of payroll exists in the appendix.

The table below provides an overview of the current time entry and scheduling systems utilized thought the County:

Department	Time Entry System	Scheduling System
BHD	Ceridian	Vastech
DHHS	Ceridian	N/A
OEM	Ceridian	Excel
Facilities	Ceridian	Excel
Transit	HASTAS	Oracle
Sherriff	Ceridian	ScheduleSoft
Airport	Dayforce	Excel
Human Resources	Ceridian (Dayforce)	N/A
Comptroller	Ceridian (Dayforce)	N/A
Fleet	Ceridian	Excel
Parks	Ceridian	Excel
HOC	Ceridian (Dayforce)	ScheduleSoft/Excel
Family Care	Ceridian	Excel
Zoo	Ceridian (Dayforce)	ScheduleSoft/Excel
Courts	Ceridian	Excel/C-CAP

STRENGTHS

The strengths of the current Payroll/Time and Attendance environment include:

1. **Direct Deposit:** The County moved to 100% direct deposit in 2009.
2. **Management of ACA (Affordable Care Act):** The County has selected an ACA reporting vendor (Health E (FX)) to handle 1094 and 1095 processing.
3. **Flexibility:** The County is able to customize the Ceridian system to meet different rules for different County ordinances. In addition, the system allows flexibility for specific scheduling requirements (e.g. rotating schedule on a 49 day period).
4. **Utilization of Managed Services:** The County does not have to maintain the hardware, data or software for the Ceridian System, since it is hosted by Ceridian. All software and compliance regulations are automatically updated by Ceridian. In addition, the County does not have to maintain staff for Ceridian software maintenance and upgrades. Overall, in the Current environment, the County is responsible only for data input and integrity.
5. **Payroll tax filings are done by Ceridian:** The County has hired Ceridian Tax Filings office that keeps up to date on changes in tax regulations.

WEAKNESSES

The weaknesses of the current Payroll/Time and Attendance environment include:

1. **Heavy Customization:** Ceridian HPW system was implemented with a significant number of custom programs, fields, tables, and triggers. This has caused issues with updates and other system functionality. With upgrades that have been implemented by Ceridian, certain customizations may have initially failed. Working with Ceridian, the customizations were repaired to work with the new upgrade, but will continue to require monitoring to ensure they are functioning properly.
2. **Retroactive Calculations:** Retro calculations are done manually even though Ceridian HPW was customized to accommodate retro pays. The customization that was initially developed was created to handle all types of retro pay situations, and therefore is too complicated for calculation of regular retro pay.
3. **Dayforce Utilization:** Some departments are concerned with the rollout of Dayforce across the County. Many users do not feel confident the system was configured to meet individual department's interpretation of pay policies. The County's goal has been to standardize pay policies and practices and Ceridian was the first payroll system to create standardization across pay groups. The implementation of Dayforce is taking the standardization requirements one step further, which has been met with resistance.
4. **Tracking Unique Labor Levels:** Currently, the County must maintain a system that can accommodate five unique labor levels (Org (low org/department), reporting category, activity, function, and job (project number). This is a unique requirement that has required customization of the out-of-the-box Ceridian system.
5. **Absence/Leave Management:** Ceridian contains customizations to maintain sick leave balances due to County policy and legal actions against the County. Separate balances must be maintained for both standard sick leave use and for payout at retirement. Ceridian has been customized to deal with most policy changes and legal actions, however a 2013 legal decision requiring regarding sick leave payout for retirees has yet to be completed.
6. **Overtime/ Holiday Accrual Management:** As a result of existing County ordinance, the County must maintain a customized method for tracking pay period increments for both overtime and holidays. County policy could be changed to require a change in the process to eliminate the cumbersome nature of accruals.
7. **Benefit Compliance System for ACA under Health E(FX) is outside of the Ceridian System:** This system also maintains hours, dollars and positions of employees for benefit identification.
8. **Benefit Administration under Morneau Chappell is outside of Ceridian System (Payroll/ HR System):** Benefit files are transmitted to Morneau Chappell from Ceridian each pay period. In the future, benefit administration data should be maintained within one Payroll/ Human Resource System.
9. **County maintains several different scheduling systems:** Current scheduling systems do not interface with the Time and Attendance system. County should consider one scheduling system for use by all departments.

OPPORTUNITIES

Overall, many of the weaknesses that exist in the HR/payroll processes exist because of the customization of the current system as a result of compliance with complex County policies. Simplifying these policies would allow for a much more standard configuration of the payroll process, regardless of the system that is utilized. .

The County is already moving to standardize its practices for time entry by moving to Ceridian's Dayforce solution.

THREATS

As per County Ordinance (17.22),

> ”All County department heads (or designees) shall report the hours of compensation for which payment is to be made, in accordance with the schedules and specifications for personal services maintained by the director of human resources and approved by the county board. Each department head, or designee, shall certify that the time record for each person is prepared in accordance with county ordinances, the rules of the civil service commission and the appropriate collective bargaining agreement and correctly represents time for which the employee is eligible for payment.”

Currently, some of the validation is done manually outside of the system. There are a limited number of departments who use punch time cards to record time. The punch cards are then entered into the Ceridian Time and Attendance System. Departments, who use out of date time recording methods, will need to transition to currently available time recording systems.

However, the County ordinance, as currently written, might make this difficult to achieve without extensive customization. The County should begin the process of streamlining employee provisions associated with 17.013, 17.014, 17.015, 17.016, 17.017 and 17.018 of Milwaukee County Code. Failure to streamline County Ordinances, and there associated policies could result in a requirement of extensive customization for any future county system. Several of these County Ordinances continue to reference bargaining agreements that have expired. The Ordinances were intended to keep the provisions of the expired agreements until such time that the County could transition to one standard policy for pay.

2.12 HUMAN RESOURCES

Overall, while Ceridian is the HR system of record at the County, the primary function of Ceridian is payroll processing, not personnel or human resources management. As a result, Ceridian houses predominantly general employee information with details being kept in a mix of true best-of-breed systems, separate databases and paper files. Applicant Tracking is also currently primarily managed via Ceridian, however, Cornerstone's Applicant Tracking Module is currently being rolled out county wide.

Modern HR software packages make human capital management far easier than the legacy-based systems. More accurate record keeping (in a single, enterprise-wide system) improves the accuracy of payroll (salary and benefits), employee records and tracking. Training programs can be reviewed online, skill gaps identified, and annual appraisals reviewed for succession and planning purposes.

Because the County does not operate on an integrated program, most of the weaknesses identified in human resources focus on data redundancies through the utilization of multiple systems and paper-based processes, which lead to a duplication of effort to manage and share data. With the introduction of a more HR-focused system with enhanced functionality, “paper processing” duties should be significantly reduced, providing for a greater level of both strategic and analytical duties of HR personnel.

Overall, managing human resources can be costly and time-consuming if the systems used focus on data repositories, Excel spreadsheets and conventional paper-based systems. By comparison, more integrated automated systems are easy to update and navigate, and web-based self-service benefits both management and their employees.

Currently, most of the more specialized HR functions are being maintained outside of Ceridian in standalone systems, which include a homegrown electronic personnel action form (PAF) system, Cornerstone On-Demand (Training & Personal Development), ViTech (Pension administration), COBRA services (COBRA Information management) and Morneau Chapell (Benefits). These are just a few of the different HR related systems currently operating in HR and throughout the County (a more

thorough listing of the systems are included in the appendix). Overall, the County has no single system that could be utilized for a comprehensive and online employee file, thus HR is required to maintain paper-based employee files. Additionally, it is apparent that some departments maintain their own paper-based employee files separate from HR resulting in employee information being stored in several standalone systems. This has created challenges with respect to compliance with open record requests, as well as other requests for information.

Area	System
Human Resource Data	Ceridian
Training and Personnel Development	Cornerstone On-Demand
COBRA management	N/A
Benefits Administration	Morneau Chapell
Benefit Compliance	Health E(FX)
Applicant Tracking	Ceridian/Cornerstone On-Demand
Talent Management	Cornerstone On-Demand
Position Control	Ceridian Position Control
Employee Performance	Ceridian HR
Employee Document Storage	On-Base
Compensation Management	Ceridian
Licenses and Certifications	Ceridian
Contractor Management	N/A
Discipline Management	N/A

STRENGTHS

The strengths of the current Human Resources environment include:

1. **Benefits Administration:** End users report that Benefits administration works well using a third-party provider. This should be a model that the County continues to employ when the benefits to the County outweigh the costs of the service.
2. **Talent management:** Implementation and roll out of Cornerstone On-Demand will provide the County with additional HR functionality that is limited in Ceridian HPW.
3. **Applicant Tracking System**: The Cornerstone On-Demand applicant tracking and new employee onboarding modules are currently being implemented county wide. Implementation of these modules, if enforced county wide, will provide managers more functionality and centralized tracking of position requirements such as any required licenses or certifications.

WEAKNESSES

The key weaknesses of the current environment include:

1. **Employee File:** Ceridian maintains one master employee file, however, departments keep paper files outside the system to be able to capture the level of employee information they require for day-to-day management.
2. **Position Control:** The position control capabilities within Ceridian are extremely limited, particularly its inability to tie positions to the budget. Overall, it appears that position budgeting and authorization is implemented or approved by the Budget Department, while day-to-day position record maintenance is implemented or controlled by Human Resources. While agnostic on whether this should continue to be the case into the future, an improved position control system would include position record maintenance implemented via system-based workflow between HR/Budget and department end users; system-based and maintained tables for positions, classifications, and all relational benefits, including differentials, which is shared by all users (e.g., the department, HR, Budget) with security based roles. Such standardization would:

a. improve information reliability;
b. streamline the annual position budgeting process via query of common maintained position and benefit records;
c. streamline day-to-day position and benefit record maintenance via automated workflow; and,
d. provide greater transparency to department end users regarding position status/availability.

Information should auto-fill from default data for new hires and changes to employees' positions. For example if a change is made to one job class, it should be changed in each position record under that job class.

3. **Applicant Tracking:** Users reported multiple limitations with the current applicant tracking environment. The current system will provide a list of applicants, but staff must track and manage the list in a spreadsheet outside of the system, which leads to a lack of visibility as to the status of job solicitations. In addition, there are no standard interview questions or rejection letters provided to applicants. The new Cornerstone On-Demand Applicant Tracking and Onboarding modules are expected to be rolled out early in 2016.
4. **Volunteer/Intern Management:** Volunteer Management is a decentralized process, with limited centralized HR control.
5. **Lack of true Electronic Workflow:** All Personnel Actions are now managed via 'electronic' forms in the County's homegrown electronic personnel action form (PAF) system, however, the workflow capabilities are limited and remain mostly manual.
6. **Lack of Electronic Document Management:** The employee record is kept in paper since the current system does not accommodate scanned images or electronic attachments to the employee file. The County is currently implementing OnBase for electronic personnel files, however, it is expected to take a substantial amount of time to get all files scanned into the system.
7. **Licenses and Certifications:** The County uses multiple systems across departments to track required licenses and certifications.
8. **Compliance Reporting Limitations:** The current system does not easily track federal compliance related items such as EEO job categories, which makes reporting very tedious/laborious.
9. **Employee Performance Management:** Employee goal plans and performance evaluations are a paper-based process. While ratings/comments are captured in Advantage/Ceridian, the annual evaluations are facilitated outside of the system.
10. **Contractor Management:** The County currently treats contract employees inconsistently, setting some up as true contract employees and others up as AP Vendors. The inconsistency makes it difficult for the County to track any County Assets assigned to contract employees.
11. **Discipline Tracking:** Ceridian is being utilized to track discipline. All associated grievance or disciplinary documentation is housed in the County's SharePoint system.
12. **Data Integrity and Security:** There are currently approximately 70 people who are able to edit information in Ceridian HPW. Key users expressed concerns that there is an inconsistent use of fields (especially user-defined fields). Historical measurements and changes (time in position, transfers or rehires over a defined period, etc.) are practically impossible to analyze without making broad assumptions about the data. Additionally, not all users are aware of how the custom triggers in Ceridian HPW work and how an entry in one field can impact data in another. Furthermore, there is currently a general lack of focus placed on securing employee/retiree private, confidential information.
13. **Lack of Analytics:** Ceridian HPW does not have analytics available. Users must download data into Excel and create their own tables and graphs.
14. **Succession Planning:** Ceridian HPW has limited succession planning functionality. As a result, succession planning is a manual process.
15. **Compliance-Related Information:** While the County is using Health E(FX) for ACA reporting, there is no clear strategy for addressing ACA reporting for retirees in the long term.

16. **Limited Manager Self-Service Functionality:** Managers must track down data from multiple systems to have a realistic view of the performance of their employees. As part of the implementation of a new HR system, the County should strongly consider using the employee and manager self-service functions. Many HRM processes rely on the PAF forms to be entered into the system and checked. Self-service will reduce paper and increase accuracy, since data is entered once. Further, cycle-time for entering PAFs will reduce significantly.
17. **Benefits Administration Segregation:** Benefits administration for retirees is segregated from the primary benefits administration platform and housed in an add-on module in the pension system. As a result, benefits does not have a single system of record for administration of the entire population. Ultimately, these complexities require two competing full-file transfers to vendors and manual intervention and/or custom programing at the point of upload to the vendors.
18. **Compensation Management:** Currently there is limited functionality for Human Resources or county leadership to manage employee compensation effectively. This leads to significant challenges with effectively managing employee pay and labor budgets effectively.
19. **Significant Customization of Current Systems:** The large amount of customization that was done when the current HPW system was implemented have create several inherent productivity, process and data accuracy related issues. These include several "triggers" customized into HPW that create field dependencies and increase system inefficiency, slow the entry of transactions, and significantly impede accurate reporting.

OPPORTUNITIES

If fully deployed, a public sector focused ERP system will provide functionality that can resolve many of the items listed above. Some of these automated functionalities include:

1. Automated performance management, including cascaded goal setting, employee performance evaluations and ongoing performance reviews.
2. Tracking for investigations, disciplinary action, FMLA, grievances, reasonable accommodations, etc.
3. Workflows for policy distribution, employee changes and improved data integration for auto-populating information, and
4. Manager and Employee Self Service
5. Effective, automated reporting capability to enhance data-based decision making and strategic planning.
6. More effective compensation and labor cost management.

Overall, with new software integration and workflow, many of the issues listed above will be resolved and a savings of resources should be realized. In addition, modern Human Resource software will provide administration tools for retiree health & welfare benefits, which will improve overall efficiency.

THREATS

Currently, the County outsources benefit administration to Morneau Chappell (formerly Ceridian Benefits Services). Key benefits staff have indicated a strong desire to continue to outsource benefits administration. The County should review other benefit administrators as the number of reputable vendors has increased in the last three years.

Overall, it is apparent that a significant discovery process related to Current County ordinance that leads to the requirements for custom programming, user defined fields, and the multiple/conflicting uses for a single data element will be necessary to identify all threats. Ordinances, Policies and procedures will also need to be changed or eliminated to remove these custom triggers and work-arounds, and adopt a model more closely aligned with those in other Public Sector organizations.

2.13 PENSION ADMINISTRATION

The County uses a combination of V3, Ceridian HPW, and manual systems for pension administration.

STRENGTHS

The strengths of the current Pension Administration environment include:

1. **Familiarity with the Process/Systems:** Staff feels that current business processes are working well and the monthly disbursement files are accurate and timely.

WEAKNESSES

The weaknesses of the current Pension Administration environment include:

1. **Interface Issues:** Lack of integration with Ceridian HPW system has resulted in data not matching between V3 and Ceridian HPW. For example, users are concerned that addresses in Ceridian are not up to date and that W-2's are being sent to the wrong address.
2. **Underutilized Functionality**: Even though significant customization was done to the V3 system, there are some critical components of the system that are not being fully utilized (e.g., COBRA)

OPPORTUNITIES

1. The County may want to consider issuing a separate RFP for a Best of Breed retirement system. Most systems are capable of interfacing with ERP systems the County will likely consider.

THREATS

1. The V3 system took three years to configure at a cost of $12M. Since the system went live, there have been issues with the quality of the system configuration and implementation. Users are concerned with the resources needed to obtain a system that will meet their needs and be compliant to existing County ordinances.

2.14 INVENTORY MANAGEMENT

Currently the County does not have a centralized inventory management system. Many departments expressed a need for a better way to track their inventory and to have a clearer picture of the inventory lifecycle, including when re-ordering should occur. While it is still unknown if there is enough inventory on-hand to warrant a sophisticated inventory tracking system, at a minimum, County departments should be providing the accounting or finance staff a total amount of inventory on-hand when physical inventory counts are performed in order to update balance sheet and expense amounts.

STRENGTHS

The strengths of the current Inventory Management environment include:

1. **Fuel Inventory System:** Departments are happy with current fuel inventory system in FleetFocus.

WEAKNESSES

The weaknesses of the current Inventory Management environment include:

1. **Limited Visibility of Inventory**: Many departments do not formally track inventory, making an annual physical inventory count difficult to obtain.
2. **Reporting is Difficult:** Not all users have access to Crystal reporting for inventory reporting purposes or training on Crystal reports.

OPPORTUNITIES

In order to manage inventory efficiently and effectively, governmental entities are interested in the following overarching capabilities:

1. Transparent communication of inventory amounts on hand;
2. Minimal costs for managing and storing inventory;
3. Automated processes for requesting inventory;
4. Ability to track inventory items such as computers and tools assigned to staff;
5. Ability to calculate different methods of costing inventory, such as first-in, first out (FIFO), lasting, first-out (LIFO), and weighted average;
6. Notifications when inventory levels are too low;
7. RFID codes for tracking inventory items such as books; and,
8. Ability to track proactive plans for maintenance and the actual performance of maintenance activities.

THREATS

Overall, it will be important for the County to have a complete list of inventory to convert. Failure to do so could lead to potential issues with missing assets and confusion during standard transactions such as an asset transfer. While inventorying fixed assets is a major effort and not specifically attributable to a system, it will be important to better inventory the County's assets in order to leverage many of the benefits of an integrated ERP.

2.15 GRANT ACCOUNTING

Multiple departments throughout the County reported that they are heavy recipients of Grant Funds. Frequently, these grants require tracking and reporting of specific costs for reimbursement. Funding from sources similar to grants, such as the State's reimbursement for maintaining highways, roads, and streets, is subject to similar requirements. Failure to properly monitor grant funds and associated costs can result in forfeiture of funds, and/or other sanctions. Overall, County departments are utilizing a hybrid of the Advantage system, BRASS, and excel spreadsheets to manage grant budget, reporting and compliance activities.

STRENGTHS

The strengths of the current Grant Accounting environment include:

1. **Document Management:** DocuSign system has helped with expediting several grant processes.

WEAKNESSES

The weaknesses of the current Grant Accounting environment include:

1. **Lack of Grant Accounting Functionality:** Advantage does not have a Grant module implemented. As a result, County departments are tracking all of their grants in Excel.
2. **System Access for Grant Reporting:** Not all department managers have access to Ceridian and are unable to easily obtain payroll data needed for grant reporting.
3. **Communication of County Processes:** County staff are unsure about the correct grant closeout process.
4. **Missing out on potential grants:** Several County departments have requested assistance with identifying potential grants that the County may want to apply for.

OPPORTUNITIES

In order to efficiently track projects, grants, and overhead costs, governmental entities are interested in the following overarching capabilities:

1. Workflows that route project and grant approvals, expenditures, and receipts to the appropriate personnel based on the type of grant and internal governance policies and procedures;
2. Centralized document management, for finance, legal, and department staff to have access to grants, contracts, and other related documentation;
3. Software modules for grant management that minimize the activity in, or "strain on," the general ledger;
4. Ability to track grant budgets, revenues, expenditures, and balances over multiple years;
5. Ability to assign overhead and labor costs to projects and grants based on time tracking in time and attendance software modules or metrics in other software systems; and,
6. Minimal use of side/redundant systems.

THREATS

Functionality for grant accounting is increasingly improving in ERP systems, but is not yet highly sophisticated in typical ERP systems. It must be noted that utilizing functionality within ERP systems for grant accounting could impact a significant number of employees, thus training, communications, and other direction from leadership will be necessary to fully realize the benefits of best practices.

Additionally, it does not appear that the County has a complete list of fixed assets by physical location, which is required by a new FTA regulation.

2.16 IMSD – IT INFRASTRUCTURE

The County of Milwaukee's IT infrastructure is in a period of transition. The network is largely comprised of private fiber and a Metro Ethernet network that serves all relevant County buildings. It is the intent of the IT department to transition the County's server room infrastructure to an "Infrastructure as a service" model within the next 12-18 months. Regardless of the status of this transitioning product, the new ERP will be hosted in one of these offsite, virtual environment and will have the needed connectivity and bandwidth available that the successful ERP vendor will require. Similarly, the County complete refresh of all of the County's PC infrastructure in 2014, so that all of the PCs in the County that would be used with a new ERP system are close to up to date.

The remainder of the County's technology Standards are as follows:

***Email*:** Office 365

***Hypervisor Software*:** VMWare

***Document Management*:** OnBase

Collaboration: Sharepoint Online

***Desktop*:** Windows 7, with Microsoft Office 2013

Internet Browser: Internet Explorer, Chrome, and Firefox

Database: TBD

3 ERP Marketplace Assessment

3.1 INTEGRATED ERP ENVIRONMENT

The purpose of the Marketplace Assessment is to provide the County with an overview of the current financial system and ERP software vendor marketplace. Information provided in this marketplace assessment was gathered from prior Plante Moran project and consulting experience, feedback from County staff during interviews, and external research.

Generally, enterprise financial system solutions evolved out of a desire to provide the functionality of two or more systems, such as Financials and Human Resources, in an integrated software solution. Enterprise software solutions experienced its first major growth in private sector businesses in their manufacturing and supply chain operations. Many of these "Tier 1" ERP solution providers offer broad solutions designed specifically for the private sector. Over the past several years, these solutions were enhanced, configured and tested in public sector organizations. With these enhancements, these solutions originally developed for private sector organizations could now be deployed in a public sector setting.

There are also a number of "Tier 2" ERP software providers that originated and offer specific vertical solutions designed for the public sector including fund accounting encumbrance accounting, sophisticated budgeting, grants management, etc. and capabilities which are pervasive in this segment. These solutions are typically characterized as "Tier 2" solutions and are normally deployed in medium sized public organizations. Over time, there has been increased focus from these Tier 2 vendors towards developing niche solutions designed to compete with the Tier 1 providers. A third tier of software providers also exists that are implemented in small organizations and will not be discussed in this report due to the lack of relevance to the County. Medium size government agencies, such as the County, often select financial management solutions identified as either Tier 1 or Tier 2 solutions.

The most basic differentiation between Tier 1 and Tier 2 providers lie within the depth of functionality, breadth and complexity of the software.

Tier 1 providers have a broader offering that often include modules for Customer Relationship Management (CRM), Enterprise Asset Management (EAM), Learning Management, Analytics and Reporting, Data Warehousing, and Project Management modules. While Tier 1 providers offer robust core financial modules, as well as HR and Payroll, typically they rely on third party vendors for functionality specific to government activities in other functional areas. Most, but not all, Tier 1 providers have a large network of implementers available to implement their solution, many of which have dedicated public sector practices. The most significant challenge with Tier 1 solutions is that government agencies often find that they are not able to dedicate enough technical resources to leverage expansive capabilities of the system to meet their needs. Due to their flexibility (thus complexity) Tier 1 implementations are most successful at organizations with structured IT software governance and/or ERP process governance, not typically demonstrated in organizations which have implemented a fragmented software approach. In addition to the necessary governance, strong IT project management is also critical for Tier 1 deployment. In several instances, Plante Moran has worked with public sector clients who have implemented Tier 1 ERP systems and the following situations have prevented them from realizing the full benefit of these systems; thus diminishing their return on investment:

- The governmental body did not budget the necessary capital to implement the solution and optimize current business processes due to cost factors related to capital budget and resource constraints.
- The operating costs to maintain Tier 1 solutions relative to software maintenance and support consumed operating budgets thus creating a situation where hiring the necessary internal resources to maintain and enhance these systems (e.g., data mining, workflow, custom reporting, etc.) was not feasible.

Users of Tier 2 solutions often find that these solutions are more prescriptive; e.g., governmental best practices are designed within the application. This is intuitive since Tier 2 solutions were designed for use within the government sector. They may offer less flexibility and configurability than Tier 1 system but, as a result, are typically less cumbersome to implement within their organization, because of their native public sector design and more prescriptive implementation approach. Tier 2 vendors tend to have their origin based in the government sector and have been improving and updating their software products to offer a greater range of modules and functionality. As such, the Tier 2 vendors are touting themselves as viable alternative solutions to Tier 1 providers. However, beyond enhanced functionality, the scalability of the services being offered by Tier 2 solution providers is a strong consideration when determining the best overall solution. Unlike Tier 1 solution providers, nearly all Tier 2 solution providers implement their own software and do not rely on third party implementers.

The software marketplace has seen the emergence of solutions being touted as Tier 1.5's, or "one and a half." Originally positioned as Tier 1 or Tier 2 solutions, these vendors have now positioned themselves between the two tiers and often offer enhanced functionality in areas such as HR and Payroll. They are also offering modules that are able to scale up to a larger client's complexity and transaction volume but at a lower cost and time to implement as compared to a Tier 1 provider.

Many of the solution providers will propose modules in the first two areas noted above as components of their overall solution set that are characterized as "best-of-breed" solutions. For HR/Payroll specifically, there are a number of niche solutions that have frequently been implemented by public sector organizations to complement their existing financial system investment to obtain a "best-of-breed" approach.

3.2 BEST-OF-BREED

A modification to Integrated ERP for delivering enterprise information solutions is the "best of breed" approach. This solution architecture is based upon selecting the best individual product solution for each functional requirement within the organization. The County's current environment represents a "Best of Breed" approach, utilizing a combination of systems, for example: Advantage (Financials), Ceridian (HR/Payroll), BRASS (Budget) and custom/side systems that are not state-of-the-art. Because a business enterprise operates in an integrated, rather than "stovepipe" fashion, creating an enterprise information solution using a "best of breed" strategy involves designing, implementing, and supporting the required technology integration. This, in fact, has represented a significant challenge for the County. Hence, the County should seriously consider the various potential benefits and challenges inherent in a "best of breed" approach.

In some cases, there isn't a choice, and the organization must integrate "best of breed" products to address requirements. This is the case when the functionality is specialized enough so that it does not exist in extended ERP systems, e.g., GIS, DCS/SCADA, and LIMS. This is one of the reasons why ERP vendors and 3rd Party software companies have developed Enterprise Application Integration software, as well as why consulting firms offer network integration programming assistance.

Benefits of "Best of Breed." The "Best of Breed" solution strategy enables the organization to select the optimal solution for a particular problem or function within the enterprise. Hence, on a requirement-by-requirement basis, there is less compromise required. This can also have some benefits related to sizing the solution. The customer can avoid "overkill," or "gold plating" solutions on the one hand or, on the other hand, have an insufficient technology fit relative to requirements, that may later result in the development of supplementary, or side systems to make up for product limitations. Because of the more exact "fitting" of the solution to the discrete problem, the initial license and implementation costs may be more appealing. A critical element is the importance of identifying and understanding the organization's functional requirements.

Challenges of "Best of Breed." The countervailing perspective, as previously described in this chapter's description of ERP systems, is that the whole of the enterprise solution is greater than the sum of its parts. Hence, optimal individual product selections may not result in the best enterprise-wide

information solution. This can be reflected in both the technical challenges required for creating and maintaining an integrated solution, the likely limitations of even an integrated “best of breed” solution, and the total cost of ownership.

“Best of Breed” solutions, being created and implemented by different firms lack the single integrated enterprise database common to ERP solutions. With ERP solutions, integration is designed into the product and data is shared in real-time between the application modules. With “best of breed” solutions, the customer must design and manage application integration. Current technology makes this somewhat easier with industry programming and database standards, and well as Enterprise Application Integration software. However, design, customization and maintenance of integrated systems is far from trivial. Without integration, a “best of breed” approach can’t be considered an enterprise information system.

Integration of systems can exist at a variety of different levels. One should be careful not to allow vendor claims of product “integration” to be taken at face value. The devil is in the details. The following are examples of some of the problems and implications relative to the integration challenge:

- End user ability to drill-down into the underlying data may be more limited if data resides on multiple platforms and databases.
- Report development and crosscutting analysis of data across the organization is more complex and will most likely require the development of an enterprise data warehouse.
- Workflow technology may be more limited across platforms. Microsoft Office email products can be used as a common “pipeline” backbone for workflow notifications. However not all vendors have workflow capabilities that are integrated with off-the-shelf Office products.

A more global issue is that when a customer adopts a “best of breed” strategy, they assume primary responsibility for identifying, creating, enhancing, and maintaining product integration. One of the inherent benefits of the ERP approach being sold by vendors, and demanded by the market, is in providing and supporting an integrated enterprise solution. As a result, the market applies additional pressure to drive creative responses to integration challenges. To some degree both ERP and “best of breed” vendors have created discrete integration solutions. This is usually in response to individual client requests, and if there is sufficient demand, vendors may productize and provide varying degrees of support for these solutions. However, as previously noted, the nature of these interfaces needs to be carefully evaluated.

An additional consideration is accurately estimating the total cost of ownership. The cost of the solution is typically identified as including initial licenses, training and implementation costs, as well as, ongoing costs for maintenance support. In addition, a significant cost may be related to developing and maintaining interfaces between systems. IT staff or consultants must create and document point-to-point interfaces between applications or implement and maintain Enterprise Application Integration software. Developing integration capabilities is a type of customization and, as a result, must be tested when relevant software application product upgrades are implemented. Hence, the total cost of creating an integrated, “best of breed” solution should include these total lifecycle costs, including the opportunity cost of applying IT staff and resources to create and maintain these interfaces.

3.3 ALTERNATIVE SOFTWARE DELIVERY OPTIONS: HOSTING (“CLOUD”)

In the past ten years alternative software delivery models have made their way into the ERP marketplace, the most popular of which are hosted solutions. While the popularity of hosted enterprise solutions did not materialize in the early part of this decade as many had predicted, organizations are slowly embracing hosted solutions in order to relieve some of the burden of an overworked business and technical staff. There are a variety of hosting models available to the public sector today, many of which have been used interchangeably by vendors providing enterprise software to the public sector and all identified as ‘the cloud.’

In general, the market for full scale ERP delivered via 'the cloud' is still immature in the public sector. However, SaaS has proven successful for more specialized applications such as document management, CRM, and selected human resources applications. Private Cloud Computing is among the highest interest areas across all cloud computing according to Gartner, with 75% of respondents in Gartner polls pursuing a strategy in this area. One of the major goals is the evaluation of virtualization-driven value and benefits. In addition, Software as a Service is rapidly gaining adoption; leading Gartner to forecast more than 50% of respondents will have some form of SaaS based application strategy by the end of 2015. Factors driving this adoption are the high priority organizations are putting on customer relationships, gaining greater insights through analytics, overcoming IT- and capital budget-based limitations, and aligning IT more efficiently to strategic goals.

Overall, hosted solutions are gradually becoming a popular way to acquire modern software while containing costs, especially amongst small-mid market public sector organizations.

3.4 ERP VENDOR CONSOLIDATION

Consolidation among public sector software vendors has left a fewer number of vendors providing customized services to the Public Sector than in prior years. Organizations such as Harris, Oracle, SunGard Public Sector, and Tyler Technologies have acquired competing software offerings over time and, to varying extents, marketed, licensed, implemented and supported each of them. As such, the remaining vendors have a larger installed base per vendor. It is anticipated that, over time, these vendors will reduce, not increase, the number of ERP solutions that they will maintain and support for the public sector. This consolidation of solution offerings is typical in the software industry as a result of their desire to create a sustainable business model. Thus, it is important during the due diligence and contract negotiation process, to consider any the future product plans available from software providers, with the purpose of maximizing solution longevity and avoiding expensive capital outlays for upgrades and for replacements.

3.5 SUMMARY COMPARISONS

Summary Comparison: Tier 1 versus Tier 2

The following table identifies some of the key differences between Tier 1 and Tier 2 software providers on issues such as support requirements, cost of implementation services, cost of major version upgrades, software support channel, and other factors:

Characteristic	Tier 1 Vendors	Tier 2 Vendors
Sample Representative Vendors:	• Oracle (Fusion, PeopleSoft, JD Edwards and Oracle e-Business Suite) • Workday • Advantage • Infor/Lawson – (1.5) • CGI – (1.5) • Others	• SunGard Public Sector (e.g. OneSolution) • Tyler Technologies MUNIS and Eden • Tyler/New World Systems • Harris (e.g. Innoprise, etc.) • Others
Design Considerations	• Developed product for private sector and later adapted for public sector • Many modules specific to public sector • Larger organizations with greater R&D budgets, offer more robust technology • Robust development tools	• Primarily designed for public sector • More prescriptive functionality and less conducive to customization without altering source code

Characteristic	Tier 1 Vendors	Tier 2 Vendors
	• Scalable to leverage most robust development and database environments	• Often leverage common municipal technology standards (e.g. MS SQL database). Some support Oracle • Environments leverage 3rd party tools (database, report writer, etc.)
Ongoing Technology Support Resource Requirements	• Most require multiple technology FTE to support • Also impacted by level of integration with other organizational systems	• Requires fewer technology FTE to support • Also impacted by level of integration with other organizational systems
Software Functionality	• Core modules have robust functionality • May lack public sector specific features (e.g. encumbrance rollover, GASB 34 reporting, etc.) • License costs per user typically more expensive than Tier 2	• Incrementally less robust functionality for core components • HR/Payroll solutions are frequently less robust as compared to Tier 1 offerings • Many vendors offer additional public sector modules, such as fleet management, request for service, etc. • License costs per user typically less expensive than Tier 1
Implementation Services for New Installation	• Requirement for multiple full time staff to implement • Requires significantly greater implementation vendor resources than Tier 2 to implement including key staff that are full-time to the project • Software implementers are typically integrators / channel partners • Implementation services cost ratio comparison to license fees often many times software cost (frequently 3:1 or higher)	• Vendor "Homework" approach has organization responsible for many implementation tasks • Frequently implemented with organization resources not dedicated to the project • Rarely requires full-time vendor staff to implement • Software vendors also implement their own solutions • Implementation services ratio typically closer to 1:1. 2:1 would be more robust services approach
Staff required for Implementation[2]	• 10+ FTE	• 3-7 FTE
Ongoing support staff required	• 6-14 FTE	• 1-3 FTE

[2] Based on Plante Moran's experience working with other clients on ERP selection and implementation initiatives.

Characteristic	Tier 1 Vendors	Tier 2 Vendors
Cost Model for Major Version Upgrades	• Most major upgrades include significant license fee costs • Most major upgrades require significant levels of vendor services to assist	• License fees for version upgrades often included with maintenance fees • Most major upgrades require moderate levels of vendor services
Software Support Channel	• Mixed, some direct, some through implementer / value added reseller channel	• Primarily direct vendor support
Hosting Options	• Generally hosted internally, some offering ASP. Workday is one of the only multi-tenant web-based options.	• Generally hosted internally, some offering ASP. Few multi-tenant web-based options.

Summary Comparison: On-Site vs. Hosted

Characteristic	Advantages	Disadvantages
On Premises / Internally Hosted Financial Applications Environment	• County has design control of application architecture to focus on reliability, availability and scalability • Optimal solution for "heavy-weight" applications (not necessarily designed for thin-client deployment), typical of Tier 2 solutions. • Application are generally more customizable and more easily able to be integrated to County best of breed business applications • Direct data access for custom reporting • Ongoing maintenance costs are less substantial that with hosted solutions • Application upgrades can be performed and coordinated on the County schedule incrementally more so that with a vendor hosted solution • Leverages existing technology, people, and contracts	• System reliability, security, maintenance, and management will remain the responsibility of the County • Higher capital costs – particularly for hardware and related operating and database software • The time required to implement a new County hosted environment is typically longer than with the vendor hosted model • Workstation replacement cycles must be maintained to more reasonable levels
Vendor Hosted Environment	• Shared services model will allow the County the benefit of additional technology and tools to enhance the security and administration of the	• If the County's network or Internet service is down, then its employees lose access to the application.

Characteristic	Advantages	Disadvantages
	environment, which otherwise may be unaffordable • Decreased technical administration workload for County IT staff. Cost savings associated with reduced demands on IT personnel • Typically, there are fewer workstation software installation requirements potentially lengthening workstation replacement cycles. • The ASP vendor is responsible for installing the system and its subsequent support. Any type of technical issue can often be immediately isolated to the software client or host application providing the software. • The County is able to predict and control costs more accurately, depending on the negotiated subscription contract & fees.	• Uptime and disaster recovery become more critical • Changes to meet the County's unique requirements may not be possible. The County may have to adapt certain system administration processes to be consistent with vendor processes. • Database or information security risks increase with the ASP model. Distributed responsibilities for security practices make for a more complex environment. • Integration to County hosted best of breed business applications becomes more complex • While reducing County technical support effort, will require County IT managers to increase effort with maintaining the vendor relationship. The County would need to manage a Service Level Agreement on an ongoing basis and specifically during periods of contract discussions or consulting during customization. • Volatility of future costs: ASP is a subscription service and fees are paid over a period of time. The County can negotiate an initial purchase price and annual fees, but has less control over subsequent subscription fees and is subject to rate hikes after the predetermined contract period ends.

3.6 ERP UTILIZATION ACROSS THE PUBLIC SECTOR

Plante Moran identified a group of counties in the U.S. similar to Milwaukee County in the sizes of their operating budgets and populations. Surveys were emailed to 18 counties requesting information about: general data about their county, their current ERP system(s), implementation experience, results, on-going support, lessons learned, challenges, etc. The surveys were sent to the head of IT or Finance.

7 counties (39%) of the 18 counties responded to the survey. Their input is greatly appreciated. In appreciation of their participation, we told the Counties the aggregate survey results will be distributed to the participants upon completion of the results being compiled. We anticipate this to be distributed within the next month or so.

Several of these counties use a single, comprehensive financial, HR, and payroll solution that either integrates or interfaces with other modules or systems throughout the organization. Others do not use a single system for all these business functions. The counties that responded represent only a sampling of counties across the U.S. that have successfully implemented an enterprise system.

The table below lists the governments that responded to the survey, followed by their individual responses:

Government	Population	Budget (All Funds)	ERP Software
Waukesha County, WI	385,000	$112M	New World Systems – Financials Ceridian – HR/Payroll
Montgomery County, MD	1M	$1.9B	Oracle EBS
Hennepin County, MN	1.2M	$1.8B	Oracle PeopleSoft
Oakland County, MI	1.2M	$900M	Oracle PeopleSoft
Orange County, CA	3 M	$12B	CGI Advantage
St. Louis County, MO	1M	$800M	Tyler MUNIS
DeKalb County, GA	800,000	$610M	Oracle EBS

3.6.1 WAUKESHA COUNTY, WI

General Organization Profile	
Today's Date:	11-19-15
Name of Organization:	Waukesha County
Name: Phone: Title:	Michael Biagioli (262) 548-7610 IT Manager / CIO
Population:	385,000
Total Employees:	1700
Total number of ERP users (Core Financials):	133
Total number of ERP users (HR/Payroll):	Our HR/Payroll is not part of our ERP Package
Number of Departments:	27
Total Expenditures, All Funds:	$112,000,000
Total General Fund Expenditures:	$18,500,000

Current ERP System	
Current ERP System Vendor/Software (Core Financials and HR/Payroll):	New World for Financials / Ceridian for HR/Payroll
Year (s) Implemented:	New World production in 2013 / Ceridian 1996
Implementation Project Budget:	$2,040,000
Scope/Modules Implemented:	All financials / Budget Prep / Purchasing
Hosting (On-site or Off-site/Cloud)	On Site
Previous System(s):	Oracle Government Financials

Implementation Experience	
General Overview/Reason for moving toward a new ERP system:	Oracle was getting too expensive to continue. Tier Two vendors had matured to the point where it made sense to move.
Challenges Encountered During Implementation:	Needed to have the Budget prep modules installed to develop the 2013 Budget, made the project a bit more complicated. The document imaging module was not sized to handle the volume of Invoices we generated. Worked with New World and got this resolved. Needed to redo our Charter of Accounts, but that was accomplished. Turn over for the Vendor at times presented us with changing team members, but it made little impact on our overall schedule. We were far better at Project Management than the vendor, so we took the lead on several fronts.
Benefits/Process Improvements as a Result of Implementation:	Almost every function with the business process was improved. This is the first system implemented at Waukesha County, were no user wanted to go back to the old system. Analytics and reporting is far superior. It definitely is less expensive than before.
Additional Lessons Learned:	We made a wise move to hire an independent Project Manager with one task, get the system installed. Somewhat expensive, but in the end, well worth every dollar spent.
Number of Functional FTE required to implement:	15 / but no one was full time dedicated to the project.
Number of Technical FTE required to implement:	5 / Only 1 was full time dedicated to the project
Has the system lived up to your expectations?	I would have to say YES

On-Going Support	
How many FTE's are supporting the ERP system?	1 full time technical / 3 functional that are only part-time.
Is a single department responsible for overseeing the governance of the ERP system?	DOA
How is training managed for the ERP system?	We use Uperform for self-guided training
What are the biggest challenges the organization faces regarding ongoing support?	Keeping the documentation current. Turn-over will happen and that documentation and history will be critical to the support of the system.

3.6.2 MONTGOMERY COUNTY, MD

General Organization Profile	
Today's Date:	November 30, 2015
Name of Organization:	Montgomery County Government
Name: **Phone:** **Title:**	Karen Plucinski 240-773-3386 Division Chief, ERP
Population:	1 million
Total Employees:	Merit System Employees Assignment Category Count Full-Time 8,268 Part-Time 847 **Grand Total 9,115**
Total number of ERP users (Core Financials):	1,065
Total number of ERP users (HR/Payroll):	1,438
Number of Departments:	30
Total Expenditures, All Funds:	$1,956,879,619 https://reports.data.montgomerycountymd.gov/omb/download
Total General Fund Expenditures:	$1,133,242,438

Current ERP System	
Current ERP System Vendor/Software (Core Financials and HR/Payroll):	Ciber, Inc. Oracle EBS, Hyperion, PeopleSoft, OBIEE
Year (s) Implemented:	Oracle EBS Financials January 2009 Oracle EBS HR/Payroll July 2010 Oracle Warehouse /Order Management – February 2016
Implementation Project Budget:	ERP - $80,897,000 Infrastructure -$14,877,000 $95,774,000
Hosting (On-site or Off-site/Cloud)	on-site
Previous System(s):	Mainframe and Stand-Alone Systems

Implementation Experience	
General Overview/Reason for moving toward a new ERP system:	Mainframe system out dated and many stand-alone systems
Challenges Encountered During Implementation:	• Defining business processes • Integrated system, increased understanding, coordination and partnership among all functional modules and business owners end-to-end business process • Complexity of a tightly integrated ERP system vs stand-alone systems • Cultural change in the way we do business • Skill Set – moving from data entry to data analysis, analytical problem solving
Benefits/Process Improvements as a Result of Implementation:	• Single Source of Data – providing for increased data accuracy and reliability • Enhanced transparency in operations and information • Eliminated many manual processes such as: payroll keypunching, mailing of paychecks, etc • Implementation of Employee Self Service (on-line) – pay slips, W2s, emergency contacts, etc. • Retired legacy systems

	• Improved business efficiencies
Additional Lessons Learned:	• Creation of Steering Committee • Funding through Capital Improvement Budget (CIP) instead for operating budget • Detailing the most experience employees from 5 department to the implementation team • Creation of a Change Management within the Project • Granting authority to the ERP project director to make decisions – on time and on budget • Vanilla out of the box, no customization
Number of Functional FTE required to implement:	31 (does not include integrator staff)
Number of Technical FTE required to implement:	28 (does not include integrator staff)
Has the system lived up to your expectations?	To a large extent; we are continuing to institutionalize and mature its use throughout the enterprise.

On-Going Support	
How many FTE's are supporting the ERP system?	Combination of technical/functional employees and contractors = 59
Is a single department responsible for overseeing the governance of the ERP system?	The Executive Steering Committee recommended to the Chief Administrative Office to place the ERP team under the Department of Technology Service with governance by a Governing Board
How is training managed for the ERP system?	Required Role based training managed by the Change Management team
What are the biggest challenges the organization faces regarding ongoing support?	• Complexity of four (4) unique platforms • Continual re-engineering, implementation and enhancements • Continual new releases, updates and patches • Increased coordination among eight (8) business operations

3.6.3 HENNEPIN COUNTY, MN

General Organization Profile	
Today's Date:	12/3/2015
Name of Organization:	Hennepin County
Name: **Phone:** **Title:**	Elizabeth Sands 612-596-0529 Financial Manager
Population:	1.2 million
Total Employees:	8900
Total number of ERP users (Core Financials):	950
Total number of ERP users (HR/Payroll):	8900
Number of Departments:	27
General Comments:	The 950 count for financials includes many users who only have inquiry roles and rarely if ever use them. Active user count is probably more like 300-400.
Total Expenditures, All Funds:	$1.8 billion
Total General Fund Expenditures:	$618 million

Current ERP System	
Current ERP System Vendor/Software (Core Financials and HR/Payroll):	Oracle PeopleSoft
Year (s) Implemented:	HR/Payroll 2009; Financials 2011
Implementation Project Budget:	$30.5 million over three years (includes time of county staff)
Scope/Modules Implemented:	HCM: Payroll, Human Resources, Benefits, Time and Labor, Position Management, Learning Management, Performance Management. Financials: General Ledger, Commitment Control, Project Costing, Purchasing, eProcurement, Accounts Payable, Employee Expenses, Billing, Accounts Receivable, Grants, Contracts, Cash Management; in process of implementing eSupplier Portal, Strategic Sourcing, Supplier Contract Management
Hosting (On-site or Off-site/Cloud)	On site
Previous System(s):	Infor ERP

Implementation Experience	
General Overview/Reason for moving toward a new ERP system:	Legacy systems were over 25 years old and mainframe based
Challenges Encountered During Implementation:	Payroll: implementing pay rules for very large number of bargaining units. Finance: moving departments to new

	purchasing business processes (entering a purchase order before purchase, rather than just processing invoices after received)
Benefits/Process Improvements as a Result of Implementation:	New system has much more employee self-service. Much less paper-based processing.
Additional Lessons Learned:	We dedicated staff to the project during implementation; but were very naïve about how many staff it was going to take to continue to support the system after implementation. We created an ERP service center that over time, has grown to have more staff than we had during the implementation.
Number of Functional FTE required to implement:	22 (at the peak of project when both HR and FIN were active)
Number of Technical FTE required to implement:	12
Has the system lived up to your expectations?	Yes. We have ongoing challenges with some parts of the system but in general it's been good.

On-Going Support	
How many FTE's are supporting the ERP system?	~60 (includes 17 transactional staff for payroll, AP, AR)
Is a single department responsible for overseeing the governance of the ERP system?	There is an Executive sponsor group with department directors from Office of Budget and Finance, HR, IT, and Internal Audit. The ERP manager reports to the OBF director and the bulk of the ERP budget is within OBF (HR business analysts are in the HR budget).
How is training managed for the ERP system?	End user training: During implementation we offered a combination of auditorium presentations and hands on classes. Currently most training is from training materials available online and hands on training is provided by new employees' coworkers who perform the same duties. ERP staff training has been an ongoing investment.
What are the biggest challenges the organization faces regarding ongoing support?	PeopleSoft has moved to a new release strategy where bug fixes and enhancements are released every couple months. Since applying fixes and enhancements requires a lot of testing effort we are still trying to figure out how often we'll be able to apply updates. The concept is that it's less effort than a full version upgrade because it's done more often. In practice it will probably mean that we're continually in testing mode.
Other comments?	Feel free to call if you have questions about any of this.

3.6.4 OAKLAND COUNTY, MI

General Organization Profile	
Today's Date:	11/25/2015
Name of Organization:	Oakland County Government
Name: **Phone:** **Title:**	Mark Kanczuzewski 248-858-7876 Contract Project Manager
Population:	1.2 M
Total Employees:	4916
Total number of ERP users (Core Financials):	522
Total number of ERP users (HR/Payroll):	4638
Number of Departments:	19
Total Expenditures, All Funds:	$851,858,342 for FY 2014
Total General Fund Expenditures:	$335,291,533 for FY 2014

Current ERP System	
Current ERP System Vendor/Software (Core Financials and HR/Payroll):	Peoplesoft 9 Peoplesoft Tools 8.48.08
Year (s) Implemented:	1998 HR/Payroll; 2005 Financials
Implementation Project Budget:	$11,165,545
Scope/Modules Implemented:	HR: Self Service, Benefits, Core HR, Retirement, Time and Labor, Payroll for North America, Enterprise Learning Financials: General Ledger, Purchasing, eProcurement, Accounts Payable, Accounts Receivable, Project Costing, Asset Management, Cash Management
Hosting (On-site or Off-site/Cloud)	On site
Previous System(s):	HR/Payroll – Mainframe; Financials – Performance Series

Implementation Experience	
General Overview/Reason for moving toward a new ERP system:	IT and Business Management decision based on the age of the solution and better integration with other solutions.
Challenges Encountered During Implementation:	There were many challenges during the system implementation. The general areas were: • Resource availability – IT and Functional staff • Consultants Experience/Knowledge – awareness of different options to be able to implement based on way of doing business.

	• Decision Making – choosing appropriate direction in timely manner based on how staff would use application. • Limited functional source system experts.
Benefits/Process Improvements as a Result of Implementation:	• Greater functionality in a new ERP system. • Improved and more detailed reporting. • Better interface/interaction with other systems/applications. • Architectural improvements using the latest hardware available at the time.
Additional Lessons Learned:	Choose a system that fits the size of your expected use to ensure maintenance and support is manageable and reasonable in cost. Know the organizations strategic goals to ensure the solution will work with other systems now.
Number of Functional FTE required to implement:	25
Number of Technical FTE required to implement:	6 for HR 4 for Financial plus 8 from the vendor depending on module implemented.
Has the system lived up to your expectations?	Yes

On-Going Support	
How many FTE's are supporting the ERP system?	3
Is a single department responsible for overseeing the governance of the ERP system?	No
How is training managed for the ERP system?	There is no on-going training or participation in conferences since no major upgrades have taken place.
What are the biggest challenges the organization faces regarding ongoing support?	• When considering the total cost of ownership, include the maintenance cost of keeping up-to-date software and hardware releases over the full lifecycle of the application. OC essentially needed to freeze software and hardware upgrades due to this cost. • Consider training classes for staff to continue to support the application, technology and infrastructure. • Continued customizations to the application have increased the complexity of during support.

3.6.5 ORANGE COUNTY, CA

General Organization Profile	
Today's Date:	December 2, 2015
Name of Organization:	County of Orange
Name: **Phone:** **Title:**	Phillip Daigneau 714-834-6277 Director of Information Technology
Population:	3,000,000+
Total Employees:	17,000+
Total number of ERP users (Core Financials):	1500
Total number of ERP users (HR/Payroll):	800
Number of Departments:	26
Total Expenditures, All Funds:	$ 12,345,507,022.26
Total General Fund Expenditures:	$ 2,882,101,364.06

Current ERP System	
Current ERP System Vendor/Software (Core Financials and HR/Payroll):	CGI Advantage Finance / Procurement currently on 3.7 upgrading to 3.10 HR / Payroll currently on 3.8 upgrading to 3.11 in fy 16 – 17 Performance Budget 3.10 implemented in 2014
Year (s) Implemented:	Initially implemented 2.x in 1999, FS 3.7 was implemented in 7/2009 HR 3.8 was implemented in 4/2011 PB was implemented in 9/2014
Implementation Project Budget:	$39,000,000 for the FS implementation 2009 $19,000,000 for the HR implementation 2011 $1,500,000 for the PB implementation 2014
Scope/Modules Implemented:	FS – All core systems HR/Payroll – All core system Performance Budget
Hosting (On-site or Off-site/Cloud)	On-Site
Previous System(s):	AMS (CGI) Advantage 2.3

Implementation Experience	
General Overview/Reason for moving toward a new ERP system:	Required upgrade moving away from the existing Mainframe solution
Challenges Encountered During Implementation:	Change in business process
Benefits/Process Improvements as a Result of Implementation:	Leverage current technology solutions and stay current with vendor supported levels.
Additional Lessons Learned:	Engage users, create extensive training programs for users
Number of Functional FTE required to implement:	FS – 18 HR – 12
Number of Technical FTE required to implement:	County Staff – 12 Vendor Staff – 12
Has the system lived up to your expectations?	Yes, the county could better leverage the currently solution by expanding the utilization of the procurement modules (Vendor Self Service)

On-Going Support	
How many FTE's are supporting the ERP system?	Functional support – 14 Security support – 4 Technical - 12
Is a single department responsible for overseeing the governance of the ERP system?	Yes, all responsibility resides in the Auditor-Controller's office
How is training managed for the ERP system?	There was class room training upon implementation along with detailed job aids
What are the biggest challenges the organization faces regarding ongoing support?	Budget to maintain the system current. We have several years of budget reduction and are now faced with an upgrade going from 3.7 to 3.10 on FS and 3.8 to 3.11 on HR

3.6.6 ST. LOUIS COUNTY, MO

General Organization Profile	
Today's Date:	November 24, 2015
Name of Organization:	St. Louis County
Name: **Phone:** **Title:**	Jennifer Keating 314-615-5044 ERP Manager
Population:	999,725
Total Employees:	4,603 (2014), 2300 retirees
Total number of ERP users (Core Financials):	696 (includes 288 HR/Payroll staff below – almost all have Financial access)
Total number of ERP users (HR/Payroll):	288
Number of Departments:	23
Total Expenditures, All Funds:	$755,537,363 (2014)
Total General Fund Expenditures:	$371,644,044 (2014)

Current ERP System	
Current ERP System Vendor/Software (Core Financials and HR/Payroll):	Tyler MUNIS
Year (s) Implemented:	2008, 2009 and on-going
Implementation Project Budget:	Approximately $4.2 million (project came in under budget)
Scope/Modules Implemented:	Currently use: Payroll, HR Management, GL, Budget, AP, Cash Management, Fixed Assets, Employee Self Service, Payroll, General Billing, AR, System Admin, CAFR Statement Builder, Requisitions, Purchase Orders, Tyler Cashiering, Tyler Content Manager (TCM), and Treasury Management.
Hosting (On-site or Off-site/Cloud)	On-site
Previous System(s):	Legacy mainframe system

Implementation Experience	
General Overview/Reason for moving toward a new ERP system:	Support of current mainframe system ended.
Challenges Encountered During Implementation:	Duration of implementation rushed – needed to extend the timeframe (St. Louis County set timetable). Forced the system to work for our processes rather than adapt to system.
Benefits/Process Improvements as a Result of Implementation:	Electronic document storage, workflow approvals, audit trails, cost and time savings.
Additional Lessons Learned:	Many, many, lessons. Here are two principles:

	1. Take time with decisions. Almost all of the decisions will be things you cannot easily change later and you should weigh each decision in the long term and try not to take shortcuts. In particular, take your time with the chart of accounts, permissions, workflow, and anything else that requires a structured table. 2. Try to adapt your processes to that of the system. If you use the system how it was intended and designed, it works a lot better. We tried to make the system adapt to us by using fields and processes in ways that were not intended and we have had to undo most of it.
Number of Functional FTE required to implement:	We had a team of 6-10 county staff for each major implementation area (HR-Payroll, Financials, Budget, Procurement, Treasury and System Admin).
Number of Technical FTE required to implement:	1
Has the system lived up to your expectations?	We have been satisfied with the system and it lives up to our expectations. Tyler continually provides enhancements through annual upgrades, and, if needed, we are able to submit additional enhancement requests.

On-Going Support	
How many FTE's are supporting the ERP system?	6
Is a single department responsible for overseeing the governance of the ERP system?	Yes (Division within a department)
How is training managed for the ERP system?	Process owners train on specific modules; ERP Division trains on basics and registers end-users for Tyler University.
What are the biggest challenges the organization faces regarding ongoing support?	Support staff does not always know site-specific procedures and site customization.

3.6.7 DEKALB COUNTY, GA

General Organization Profile	
Today's Date:	19 November 2015
Name of Organization:	DeKalb County, GA
Name: **Phone:** **Title:**	John Matelski 404.371.6210 Chief Innovation & Information Officer
Population:	735,000
Total Employees:	6000
Total number of ERP users (Core Financials):	275
Total number of ERP users (HR/Payroll):	300
Number of Departments:	50
General Comments:	We use both Oracle EBS & PeopleSoft
Total Expenditures, All Funds:	$610,812,000
Total General Fund Expenditures:	$56,816,000

Current ERP System	
Current ERP System Vendor/Software (Core Financials and HR/Payroll):	PeopleSoft 9.1 Oracle EBS 12.1.3
Year (s) Implemented:	15 years PeopleSoft/11 Years EBS
Implementation Project Budget:	$20 MIL + for both implementations
Scope/Modules Implemented:	PeopleSoft – HR, Benefits, Pension, Payroll EBS – iProc, iExpense, iSupplier, Sourcing, Core Purchasing, AR, AP, EAM, INV, GL, Public Sector Budgeting, Fixed Assets, Projects and Grants, HR,
Hosting (On-site or Off-site/Cloud)	On site
Previous System(s):	Mainframe Home Grown Systems.

Implementation Experience	
General Overview/Reason for moving toward a new ERP system:	Integrated workflows, migrate away from paper antiquated processes.
Challenges Encountered During Implementation:	Training and testing were the biggest challenges that we faced.
Benefits/Process Improvements as a Result of Implementation:	While we still have some manual processes, the implementation automated 50-65% of our manual processes.

Additional Lessons Learned:	Have a strategy in place to support applications using in-house of staff augmentation consultants. Develop a training strategy/plan. Establish a governance board.
Number of Functional FTE required to implement:	Both implementations were handled by Oracle
Number of Technical FTE required to implement:	Both implementations were handled by Oracle
Has the system lived up to your expectations?	Yes

On-Going Support	
How many FTE's are supporting the ERP system?	5 FTE, 1 – Oracle DBAs 1- PeopleSoft DBAs, 2 Staff Augment PeopleSoft Resources, 1 Oracle DBA Staff Augment, 1 Oracle Functional Finance SME Staff Augment, 1 Manager
Is a single department responsible for overseeing the governance of the ERP system?	IT assumes this ownership
How is training managed for the ERP system?	Not very well. However, we are in the process of implementing and rolling out UPK to handle training for both EBS and PeopleSoft.
What are the biggest challenges the organization faces regarding ongoing support?	Ability to attract resources at County's pay structure.

4 Options Analysis

Consistent with project objectives and based on the evaluation of the current functional and the technology environment, the County has three primary options in regard to the strategic direction of a future applications environment, with variations/alternatives within multiple options. These are defined at high level in the table below and analyzed in additional detail throughout this section of the report. Key assumptions were necessary in preparing these estimates and these are represented in the Detailed Cost of Ownership Details within each option and alternative.

Option	Summary of Options/Alternatives
Option 1: Status Quo with Baseline Cost Estimate	• This option represents the County's current investment position with the resources currently in place supporting the Advantage and Ceridian environments on premise today. It also represents the existing mix of third party applications interfaced with Advantage supporting the budgeting, procurement, benefits administration, contract administration, pension administration, revenue collection, treasury, and talent management.
Option 2a: Upgrade Advantage and Upgrade Ceridian	• This option represents the County's migration to the latest versions of Advantage for core financials and Ceridian for HR/Payroll. The County would continue to operate its existing best of breed systems for Budget, HR, Benefit and Procurement functions. While deemed an upgrade, this option would essentially be a 're-implementation' of both solutions.
Option 2b: Replace Advantage and Upgrade Ceridian	• This option represents a competitive bid/RFP process to replace Advantage for core financials and an upgrade of Ceridian for HR/Payroll functionality. The County would replace any best of breed solutions currently utilized for core financial functionality (Budget, Purchasing) with integrated functionality available within the new core financials suite of applications. Ceridian would be upgraded to the most recent version for HR/payroll functionality. Interface requirements between Ceridian and the new financial solution would be documented in the RFP for core financials and Statement of Work (SOW) for the Ceridian Upgrade.
Option 2c: Upgrade Advantage and Replace Ceridian	• This option represents a competitive bid/RFP process to replace Ceridian for HR/Payroll functionality and an upgrade of Advantage for core financials. The County would continue to operate its existing best of breed systems for Budget and Procurement functions. Interface requirements between Advantage and the New HR/Payroll solution would be documented in the RFP for HR/Payroll and SOW for the Advantage Upgrade.
Option 3a: New best of breed ERP Environment	• This option assumes the County reinvests in multiple new, best of breed ERP solutions to replace the current Advantage and Ceridian applications. The County would prepare multiple RFPs for these solutions.
Option 3b: New fully integrated ERP Environment	• This option assumes the County reinvests in a new, fully integrated ERP solution that would take advantage of the capabilities of a public sector focused ERP solution. The County would prepare an RFP for a solution that incorporates all of the required functionality currently provided by Advantage, Ceridian and key best of breed solutions.

Further details are described within each option analysis including their advantages and disadvantages and other key factors for the County's consideration.

4.1 OPTION 1: STATUS QUO WITH BASELINE COST ESTIMATE

OVERVIEW

The County always has the option to consider the 'status quo' environment and remain on its current versions of Advantage and Ceridian and additional best-of-breed systems. This option represents the County's current investment position with the resources currently in place supporting the environments on premise today. It also represents the existing mix of best of breed or third party applications interfaced with Advantage supporting the budgeting and procurement functions and the third party applications interfaced with Ceridian for human resources, talent management and benefit administration. The County is paying a premium for the addition of best of breed solutions when core ERP functionality exists but cannot be fully realized.

ADVANTAGES

Included below is a list of the most significant advantages to continuing with the status quo at the County:

1. **Limited Operational Impact:** This option would not impact the financial and human resources functions which have a broader internal user base.
2. **Lowest total cost of ownership:** Excess cost burden over five years is approximately $26 million in external and internal funding. This is the lowest five year TCO of any of the options and alternatives presented in this report.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to continuing with the status quo at the County:

1. **For core financials, this option is not realistic**: Both Advantage and Ceridian will have limited support over the next few years. However, as a result of the original CGI/Advantage fix for the 'Y2K' issue, Advantage's new 'last year' for processing is year 2019 as it will not accept dates in Year 2020 (as the system assumes it's year 1920). Overall, without a major upgrade or very technical programming solution, the County will be unable to utilize Advantage in the year 2020.
2. **High Maintenance Costs**: The County's investment in supporting its fragmented ERP environment is significantly higher than the vast majority of peer communities Plante Moran evaluates as it conducts its needs assessments in terms of employees, operational complexity, and ERP requirements represented by the County and inventoried in this evaluation. In essence, the County is investing approximately $5M per year on supporting systems which a majority of end users feel do not meet their needs.
3. **Interface Complexity**: The number of interfaces the County requires demands a system architecture that facilities data exchange and the present, legacy environment is not optimized in this manner.

OPPORTUNITIES

1. **Training and Support**: Identify staff training requirements and reporting needs within all business units to support the systems administration for the next three years. Seek to provide tactical training options to the County's team especially in the areas of financial reporting and analysis.

OPTION 1: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope, we have estimated internal and external cost projections for the County to remain in its existing environment/status quo as represented below.

Option 1: Status Quo	Advantage - Current Costs	Ceridian - Current Costs	Best of Breed – Current Costs
One-Time Cost Summary			
Software License	Not Applicable	Not Applicable	Not Applicable
Implementation	Not Applicable	Not Applicable	Not Applicable
Hardware	Not Applicable	Not Applicable	Not Applicable
Total One-Time Cost	**Not Applicable**	**Not Applicable**	Not Applicable
Ongoing Cost Summary			
Annual Software License and Maintenance	$290,000	$703,000	Not Applicable
Other Annual Support Services	$1,510,000	$214,000	$1,089,000
Internal Staffing Costs	$945,000	$150,000	Not Provided
Total Ongoing Cost	**$2,745,000**	**$1,067,000**	**$1,089,000**
Other One-Time Costs			
System Selection & Implementation Management	Not Applicable	Not Applicable	Not Applicable
Project Contingency	Not Applicable	Not Applicable	Not Applicable
Total Other One-Time Costs	Not Applicable	Not Applicable	Not Applicable
First Year Total Cost	***$2,745,000***	***$1,067,000***	***$1,089,000***
5-Year Cumulative Cost (Estimated)	**$14,574,000**	**$5,665,000**	**$5,782,000**
TOTAL 5-YEAR ESTIMATED COSTS			**$26,021,000**

Assumptions for Option 1:

- Current costs for CGI, Ceridian and a number of best of breed systems have been supplied to Plante Moran from Milwaukee County.

  The cost for the following best of breed systems have been included in Option 1:

  a. Brass and Caseware
  b. Cornerstone Learning Management
  c. Applicant Tracking
  d. SciQuest
  e. MS Benefits
  f. V3
- Internal Staffing costs for Ceridian were not provided, for the purpose of this analysis $150,000 was estimated and included in the Internal Staffing costs for the Ceridian system.

- Estimated 5-year costs assume a 3% annual inflation rate.

For several reasons, the County does not appear to have the luxury of maintaining the status quo and continuing to use the existing Advantage/Ceridian system and host of side systems ‘as- is’ for several more years. Multiple critical county systems are nearing the end of their lifecycle, and the County will have increased difficulty in obtaining support for this software if it does not upgrade.

4.2 OPTION 2: UPGRADE

OVERVIEW

The County could decide to increase its current Advantage/Ceridian investment and pursue a number of upgrade alternatives.

- *2a: Upgrade Advantage and Ceridian*
- *2b: Upgrade Ceridian and Replace Advantage*
- *2c: Upgrade Advantage and Replace Ceridian*

4.3 OPTION 2, ALTERNATIVE A

Upgrade Advantage and Ceridian and Retain Existing Best-of-Breeds.

This option represents the County's migration to the latest versions of Advantage for core financials and Ceridian for HR/Payroll. The County would continue to operate its existing best of breed systems for Budget, HR, Benefit and Procurement functions. While deemed an upgrade, this option would essentially be a 're-implementation' of both solutions.

ADVANTAGES

Included below is a listing of the most significant advantages to upgrading the current Advantage/Ceridian environment and retaining the existing best-of-breed portfolio:

1. **Quicker Implementation:** The County could move quickly to begin work on the project. Even if the County would decide to bid the project with alternative consulting vendors the upgrade project would still move more quickly than one requiring selection of a new ERP system and implementation services.
2. **Builds on Existing Expertise:** This alternative takes advantages of existing Advantage and Ceridian expertise among the general County staff and also the IMSD staff.
3. **Builds on Existing Vendor Relationships**: This alternative also allows the County to build on an existing relationship with Advantage and Ceridian, rather than begin a new relationship with a new vendor. The County retains ownership of its Advantage licensing and has flexibility as to the environment it chooses to manage its applications.
4. **Potential Expansion of the Utilization of Modern Cloud Technology**: The County would be able to investigate updating its existing Advantage solution to the Advantage 360 multi-tenant/'cloud' platform.
5. **Improved Functionality**: The County would experience increased/improved functionality by upgrading its two primary enterprise solutions.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to upgrading the current Advantage/Ceridian environment and retaining the existing best-of-breed portfolio:

1. **Mismatch of Technology to County's Business Requirements**: Users reported a high level of dissatisfaction with both the Advantage and Ceridian solutions. While some of the dissatisfaction was related to usability of the system, a majority of the imitations were reported as functionality deficiencies. While upgrading will provide improved functionality, the County would likely not define its business requirements in detail as it would via a competitive procurement process.
2. **Proliferation of Best-of-Breed Systems**: The County continues to invest in best of breed solutions that duplicate capabilities available by the core Advantage functionality available (e.g. Budgeting, Procurement, Contract management, etc.). The addition of specialized best of breed applications increases the County's overhead to test, manage, and coordinate the version control for each system interface.
3. **Complexity of Interface development and Support**: The specialization necessary to manage each additional best of breed application requires ongoing training that must be

coordinated between the business unit (core application stakeholders) and information technology so institutional knowledge is retained.

4. **High Cost of Ownership**: Excess cost burden over five years exceeds $26 million in external and internal funding.
5. **Position Control Challenges**: In any upgrade scenario, challenge with Position control will likely still exist and interfaces must be designed and developed to regularly update position information between the Ceridian, Advantage and BRASS systems.

OPTION 2, ALTERNATIVE A: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope coupled with existing Advantage/Ceridian pricing information already provided to the County, we have estimated internal and external cost projections for the County to upgrade its current investment.

Option 2, Alternative A: Upgrade Advantage and Upgrade Ceridian	Upgrade Advantage	Upgrade Ceridian	Best of Breed
One-Time Cost Summary			
Software License	Not Applicable	Not Applicable	Not Applicable
Implementation	$4,350,000	$2,076,000	Not Applicable
Hardware	$218,000	Not Applicable	Not Applicable
Total One-Time Cost	**$4,568,000**	**$2,076,000**	**-**
Ongoing Cost Summary			
Annual Software License and Maintenance	$290,000	-	-
Other Annual Support Services	$1,510,000	$1,210,860	$634,000
Internal Staffing Costs	$945,000	$150,000	Not Provided
Total Ongoing Cost	**$2,745,000**	**$1,360,860**	**$634,000**
Other One-Time Costs			
System Selection & Implementation Management	$457,000	$38,000	Not Applicable
Project Contingency	$457,000	$38,000	Not Applicable
Total Other One-Time Costs	**$914,000**	**$76,000**	**-**
Total One-Time Cost	**$5,482,000**	**$453,440**	**-**
5-Year Cumulative Cost (Estimated)	**$16,966,000**	**$6,147,000**	**$3,366,000**
Total 5-Year Estimated Costs			**$26,479,000**

Assumptions for Option 2, Alternative A:

- Costs for upgrading CGI are estimated and are derived from Plante Moran's historical data of system costs for similar public sector entities, as identified by FTE, total budget, and population.
- Quoted upgrade costs have not been received by the County for CGI. Typically, implementation costs account for 75% of the total one-time cost (excluding hardware), and maintenance is typically 20% of the software license fee. However, in this scenario we've

estimated maintenance to be equal to the current, negotiated maintenance cost for CGI as typically current customers are able to negotiate maintenance rates.

- Quoted costs for upgrading Ceridian (plus Benefits) have been provided to the County and are displayed in the upgrade costs for this option.
- Internal Staffing costs for Ceridian were not provided, for the purpose of this analysis $150,000 was estimated and included in the Internal Staffing costs for the Ceridian system.
- The cost for the following best of breed systems have been included in Option 2a:
    a. Brass and Caseware
    b. Cornerstone Learning Management
    c. Applicant Tracking
    d. SciQuest
    e. V3

  MS Benefits has been excluded as benefits functionality was included in the proposed upgrade costs from Ceridian.
- Ongoing costs are assumed to be waived in year 1.
- Estimated 5-year costs are adjusted for 3% annual inflation.
- Hardware costs are assumed to be 5% of the sum of the one-time Software License and Implementation costs (rounded to the nearest thousand).
- System Selection & Implementation Management is assumed to be 10% of the implementation cost.
- Contingency is assumed to be 10% of the implementation cost.

4.4 OPTION 2, ALTERNATIVE B

Upgrade Ceridian and Replace Advantage via a Competitive Procurement Process

This option represents a competitive bid/RFP process to replace Advantage for core financials and an upgrade of Ceridian for HR/Payroll functionality. The County would replace any best of breed solutions currently utilized for core financial functionality (Budget, Purchasing) with integrated functionality available within the new core financials suite of applications. Ceridian would be upgraded to the most recent version for HR/payroll functionality. Interface requirements between Ceridian and the new financial solution would be documented in the RFP for core financials and Statement of Work (SOW) for the Ceridian Upgrade.

ADVANTAGES

Included below is a listing of the most significant advantages to upgrading the current Ceridian HR/payroll environment only, but also selecting a new Financial Management Solution:

1. **Quicker Implementation:** The County could move quickly to begin work on the project. Even if the County would decide to bid the project with alternative consulting vendors the upgrade project would still move more quickly than one requiring selection of a new ERP system and implementation services.
2. **Builds on Existing Expertise**: This alternative takes advantages of existing Ceridian expertise among the general County staff and also the IMSD staff.
3. **Builds on Existing Vendor Relationship:** This alternative also allows the County to build on an existing relationship Ceridian, rather than begin a new relationship with a new vendor for HR/Payroll functionality.
4. **Improved Functionality**: The County would experience increased/improved functionality by upgrading Ceridian and replacing Advantage.
5. **Fresh Start:** With the move to a new product for core financials, the excitement of a “fresh start” makes the implementation somewhat more likely to be successful. And in this case, staff involved would have the additional motivation of being able to implement a public sector focused system that could meet some of the reported unmet needs.

DISADVANTAGES

1. **Mismatch of Technology to County's Business Requirements**: Users reported a high level of dissatisfaction with the Ceridian solutions. While some of the dissatisfaction was related to usability of the system, a majority of the limitations were reported as functionality deficiencies. While upgrading Ceridian will provide improved functionality, the County would likely not define its business requirements in detail as it would via a competitive procurement process.
2. **Complexity of Interface development and Support**: The specialization necessary to manage each additional best of breed application requires ongoing training that must be coordinated between the business unit (core application stakeholders) and information technology so institutional knowledge is retained.
3. **High Cost of Ownership**: Excess cost burden over five years exceeds $32 million in external and internal funding.
4. **Position Control Challenges**: In any upgrade scenario, challenge with Position control will likely still exist and interfaces must be designed and developed to regularly update position information between the Ceridian, Advantage and BRASS systems.
5. **Change Management Challenges:** This option will cause disruption to County financial system users within the organization as processes, procedures, and training needs would likely require an extended amount of re-engineering.
6. **Extended Duration of Implementation Project**: Establishing a transition of this magnitude will require staff augmentation that will increase staff support requirements in order to complete a complete migration which will require several months to perform.

OPTION 2, ALTERNATIVE B: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope coupled with existing Advantage/Ceridian pricing information already provided to the County, we have estimated internal and external cost projections for the County to upgrade its current investment.

Option 2, Alternative B: Replace Advantage and Upgrade Ceridian	Replace Advantage with New FMS	Upgrade Ceridian	Best of Breed
One-Time Cost Summary			
Software License	$2,200,000	Not Applicable	Not Applicable
Implementation	$6,600,000	$377,440	Not Applicable
Hardware	$440,000	Not Applicable	Not Applicable
Total One-Time Cost	**$9,240,000**	**$377,440**	**-**
Ongoing Cost Summary			
Annual Software License and Maintenance	$1,760,000	-	-
Other Annual Support Services	$352,000	$1,210,860	$164,000
Internal Staffing Costs	$1,350,000	$150,000	Not Provided
Total Ongoing Cost	**$3,462,000**	**$1,360,860**	**$164,000**
Other One-Time Costs			
System Selection & Implementation Management	$924,000	$38,000	Not Applicable
Project Contingency	$924,000	$38,000	Not Applicable
Total Other One-Time Costs	**$1,848,000**	**$76,000**	**-**

Total One-Time Cost	**$11,088,000**	**$453,440**	**-**
5-Year Cumulative Cost (Estimated)	**$25,572,000**	**$6,147,000**	**$871,000**
Total 5-Year Estimated Costs			**$32,590,000**

Assumptions for Option 2, Alternative B:

- All costs are estimated and are derived from Plante Moran's historical data of system costs for similar public sector entities, as identified by FTE, total budget, and population.
- Ongoing costs are assumed to be waived in year 1.
- Estimated 5-year costs are adjusted for 3% annual inflation.
- Quoted costs for upgrading Ceridian (plus Benefits) have been provided to the County and are displayed in the upgrade costs for this option.
- Internal Staffing costs for Ceridian were not provided, for the purpose of this analysis $150,000 was estimated and included in the Internal Staffing costs for the Ceridian system.
- The cost for the following best of breed systems have been included in Option 2b:
    a. Cornerstone Learning Management
    b. Applicant Tracking
    c. V3

  MS Benefits has been excluded as benefits functionality was included in the proposed upgrade costs from Ceridian. In addition, Brass and Caseware as well as SciQuest have been excluded as these systems support functionality that is commonly available in newer financial systems.
- Software license costs are assumed to be 25% of the total one-time cost (excluding hardware).
- Implementation costs are assumed to be 75% of the total one-time cost (excluding hardware).
- Hardware costs are assumed to be 5% of the sum of the one-time Software License and Implementation costs (rounded to the nearest thousand).
- Contingency is assumed to be 10% of the implementation cost.
- System selection costs are assumed to be 10% of the implementation cost.

4.5 OPTION 2, ALTERNATIVE C

Upgrade Advantage and Replace Ceridian via a Competitive Procurement Process

This option represents a competitive bid/RFP process to replace Ceridian for HR/Payroll functionality and an upgrade of Advantage for core financials. The County would continue to operate its existing best of breed systems for Budget and Procurement functions. Interface requirements between Advantage and the New HR/Payroll solution would be documented in the RFP for HR/Payroll and SOW for the Advantage Upgrade.

ADVANTAGES

Included below is a listing of the most significant advantages to upgrading the current Advantage environment only, but also selecting a new Ceridian solution for HR/Payroll:

1. **Quicker Implementation:** The County could move quickly to begin work on the project. Even if the County would decide to bid the project with alternative consulting vendors the upgrade project would still move more quickly than one requiring selection of a new ERP system and implementation services.
2. **Builds on Existing Expertise**: This alternative takes advantages of existing Ceridian expertise among the general County staff and also the IMSD staff.

3. **Builds on Existing Vendor Relationship:** This alternative also allows the County to build on an existing relationship CGI Advantage, rather than begin a new relationship with a new vendor for Core Financials functionality.
4. **Potential Expansion of the Utilization of Modern Cloud Technology**: The County would be able to investigate updating its existing Advantage solution to the Advantage 360 multi-tenant/'cloud' platform.
5. **Improved Functionality**: The County would experience increased/improved functionality by upgrading CGI Advantage and replacing Ceridian.
6. **Fresh Start:** With the move to a new product for HR/Payroll, the excitement of a "fresh start" makes the implementation somewhat more likely to be successful. And in this case, staff involved would have the additional motivation of being able to implement a public sector focused system that could meet some of the reported unmet needs.

DISADVANTAGES

1. **Mismatch of Technology to County's Business Requirements**: Users reported a high level of dissatisfaction with the Advantage solutions. While some of the dissatisfaction was related to usability of the system, a majority of the limitations were reported as functionality deficiencies. While upgrading Advantage will provide improved functionality, the County would likely not define its business requirements in detail as it would via a competitive procurement process.
2. **Complexity of Interface development and Support**: The specialization necessary to manage each additional best of breed application requires ongoing training that must be coordinated between the business unit (core application stakeholders) and information technology so institutional knowledge is retained.
3. **High Cost of Ownership**: Excess cost burden over five years exceeds $32 million in external and internal funding. .
4. **Position Control Challenges**: In any upgrade scenario, challenge with Position control will likely still exist and interfaces must be designed and developed to regularly update position information between the Ceridian, Advantage and BRASS systems.
5. **Change Management Challenges:** This option will cause disruption to County time card users (nearly all of the County employees) within the organization as processes, procedures, and training needs would likely require an extended amount of re-engineering.
6. **Extended Duration of Implementation Project**: Establishing a transition of this magnitude will require staff augmentation that will increase staff support requirements in order to complete a complete migration which will require several months to perform.

OPTION 2, ALTERNATIVE C: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope coupled with existing Advantage/Ceridian pricing information already provided to the County, we have estimated internal and external cost projections for the County to upgrade its current investment.

Option 2, Alternative C: Upgrade Advantage and Replace Ceridian	Upgrade Advantage	Replace Ceridian with New HRMS	Best of Breed
One-Time Cost Summary			
Software License	Not Applicable	$1,400,000	Not Applicable
Implementation	$4,350,000	$4,200,000	Not Applicable
Hardware	$218,000	$280,000	Not Applicable
Total One-Time Cost	**$4,568,000**	**$5,880,000**	**-**
Ongoing Cost Summary			
Annual Software License and Maintenance	$290,000	$1,120,000	-
Other Annual Support Services	$1,510,000	$224,000	$495,000
Internal Staffing Costs	$945,000	$150,000	Not Provided
Total Ongoing Cost	**$2,745,000**	**$1,494,000**	**$495,000**
Other One-Time Costs			
System Selection & Implementation Management	$457,000	$588,000	Not Applicable
Project Contingency	$457,000	$588,000	Not Applicable
Total Other One-Time Costs	**$914,000**	**$1,176,000**	**-**
Total One-Time Cost	**$5,482,000**	**$7,056,000**	**-**
5-Year Cumulative Cost (Estimated)	**$16,966,000**	**$13,306,000**	**2,628,000**
Total 5-Year Estimated Costs			**$32,900,000**

Assumptions for Option 2, Alternative C:

- All costs are estimated and are derived from Plante Moran's historical data of system costs for similar public sector entities, as identified by FTE, total budget, and population.
- Ongoing costs are assumed to be waived in year 1.
- Estimated 5-year costs are adjusted for 3% annual inflation.
- Quoted upgrade costs have not been received by the County for CGI. Typically, implementation costs account for 75% of the total one-time cost (excluding hardware), and maintenance is typically 20% of the software license fee. However, in this scenario we've estimated maintenance to be equal to the current, negotiated maintenance cost for CGI as typically current customers are able to negotiate maintenance rates.
- Internal Staffing costs for Ceridian were not provided, for the purpose of this analysis $150,000 was estimated and included in the Internal Staffing costs for the Ceridian system.
- The cost for the following best of breed systems have been included in Option 2c:
    a. Brass and Caseware

b. SciQuest
c. V3

MS Benefits, Learning management and applicant tracking have been excluded from this analysis as this functionality is commonly found in newer HR system.

- Staffing costs for an Advantage upgrade are assumed to be the same as the current costs to support Advantage.
- Software license costs are assumed to be 25% of the total one-time cost (excluding hardware).
- Implementation costs are assumed to be 75% of the total one-time cost (excluding hardware).
- For the Ceridian replacement, the Annual Software License and Maintenance costs are assumed to be 20% of the sum of the Software License and Implementation costs. The Other Annual Support Services costs are assumed to be 20% of the Annual Software License and Maintenance cost.
- Hardware costs are assumed to be 5% of the sum of the one-time Software License and Implementation costs (rounded to the nearest thousand).
- Contingency is assumed to be 10% of the implementation cost.
- System selection costs are assumed to be 10% of the implementation cost.

4.6 OPTION 3: NEW ERP ENVIRONMENT

OVERVIEW

Through a competitive RFP process, the County could procure and implement either a best-of-breed or fully ERP solution that includes both Core ERP and Extended ERP Modules. By changing systems, the County would maintain and support the current environment through the future system selection and implementation effort. The system selection would be a competitive procurement with stakeholder input to define requirements and measure vendor compliance in fulfilling them. It would require a capital investment and necessitate ongoing sustained investment through software maintenance and continued internal technical support.

Overall, in Option 3, the County would replace current systems with modern Public Sector Focused ERP System and pursue one of the alternatives below:

1. Option 3, Alternative A: Replace the Current enterprise systems with a New Best of Breed ERP Environment
2. Option 3, Alternative B: Replace the Current Enterprise Systems with a New Fully Integrated ERP Environment

4.7 OPTION 3, ALTERNATIVE A:

Go to market and procure two new best of breed systems

This option assumes the County reinvests in multiple new, best of breed ERP solutions to replace the current Advantage and Ceridian applications. The County would prepare multiple RFPs for these solutions.

ADVANTAGES

Included below is a listing of the most significant advantages to replacing the Current County ERP Systems with a ‘best-of-breed’ strategy:

1. **Improved Functionality**: The County would experience increased/improved functionality by upgrading CGI Advantage and replacing Ceridian.
2. **Fresh Start:** With the move to a new product for HR/Payroll and Core Financials, the excitement of a “fresh start” makes the implementation somewhat more likely to be successful.

And in this case, staff involved would have the additional motivation of being able to implement a public sector focused system that could meet some of the reported unmet needs.

3. **Government-Oriented**: The Tier 1.5 or Tier 2 ERP system focused on a government market would be more responsive to structuring solutions to meet the needs of the municipal industry best practices.
4. **Deeper Functionality:** Moving in a best of breed direction will ensure the County pursues deep functionality over full integration. This could be very advantageous if the County is unable to change some of the more unique requirements, especially in the HR/Payroll areas.

DISADVANTAGES

1. **Complexity of Interface development and Support**: The specialization necessary to manage each new best of breed application requires ongoing training that must be coordinated between the business unit (core application stakeholders) and information technology so institutional knowledge is retained.
2. **High Cost of Ownership**: Excess cost burden over five years exceeds $38 million in external and internal funding is extreme.
3. **Position Control Challenges**: In any best of breed replacement scenario, challenges with Position control will likely still exist and interfaces must be designed and developed to regularly update position information between the new financial and HR systems.
4. **Change Management Challenges:** This option will cause disruption to County users (nearly within the organization as processes, procedures, and training needs would likely require an extended amount of re-engineering.
5. **Extended Duration of Implementation Project**: Establishing a transition of this magnitude will require staff augmentation that will increase staff support requirements in order to complete a complete migration which will require several months to perform.
6. **Existing Investment Lost**: The investment made to interface the present systems (including recently implemented SciQuest) would be lost and the third party systems would have to be re-interfaced.

OPTION 3, ALTERNATIVE A: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope coupled with past actual pricing taken from selected Tier 1.5 and Tier 2 vendor proposals to similar sized entities as the County, we have estimated internal and external cost projections.

Overall, the County may decide to continue with Advantage and Ceridian, but in view of the total cost of ownership differential as well as the problems that it has had in maintaining and optimizing Advantage/Ceridian in the past, Option 3 will allow the County to pursue a fresh start, lowering the total cost of ownership and improving functionality for County end users.

Option 3, Alternative A: New Best-of-Breed Environment	Replace Advantage with New FMS	Replace Ceridian with New HRMS
One-Time Cost Summary		
Software License	$2,200,000	$1,400,000
Implementation	$6,600,000	$4,200,000
Hardware	$440,000	$280,000
Total One-Time Cost	**$9,240,000**	**$5,880,000**
Ongoing Cost Summary		
Annual Software License and Maintenance	$1,760,000	$1,120,000
Other Annual Support Services	$352,000	$224,000
Internal Staffing Costs	$1,350,000	$150,000
Total Ongoing Cost	**$3,462,000**	**$1,494,000**
Other One-Time Costs		
System Selection & Implementation Management	$924,000	$588,000
Project Contingency	$924,000	$588,000
Total Other One-Time Costs	**$1,848,000**	**$1,176,000**
Total One-Time Cost	**$11,088,000**	**$7,056,000**
5-Year Cumulative Cost (Estimated)	**$25,572,000**	**$13,306,000**
Total 5-Year Estimated Costs		**$38,878,000**

Assumptions for Option 3, Alternative A:

- All costs are estimated and are derived from Plante Moran's historical data of system costs for similar public sector entities, as identified by FTE, total budget, and population.
- Ongoing costs are assumed to be waived in year 1.
- Estimated 5-year costs are adjusted for 3% annual inflation.
- Staffing costs for a future ERP are assumed to be the same as the current costs to support Advantage.
- Internal Staffing costs for Ceridian were not provided, for the purpose of this analysis $150,000 was estimated and included in the Internal Staffing costs for the Ceridian system.
- Software license costs are assumed to be 25% of the total one-time cost (excluding hardware).
- Implementation costs are assumed to be 75% of the total one-time cost (excluding hardware).
- Hardware costs are assumed to be 5% of the sum of the one-time application license and implementation costs.
- Contingency is assumed to be 10% of the implementation cost.
- System selection costs are assumed to be 10% of the implementation cost.

4.8 OPTION 3, ALTERNATIVE B:

Go to market for a fully integrated public sector focused ERP solution

This option assumes the County reinvests in a new, fully integrated ERP solution that would take advantage of the capabilities of a public sector focused ERP solution. The County would prepare an RFP for a solution that incorporates all of the required functionality currently provided by Advantage, Ceridian and key best of breed solutions.

ADVANTAGES

Included below is a listing of the most significant advantages to replacing the existing applications environment with an integrated ERP at the County:

1. **Streamline the County's Technology Investment and Improve Functionality:** The County selects an integrated ERP solution that fulfills the needs currently serviced by Advantage and Ceridian in addition to divesting itself from a majority of the best of breed systems the County owns and is obligated to pay licensing maintenance, invest in internal/external staff support, and train staff to effectively utilize.
2. **Most Government-Oriented**: The Tier 1.5 or Tier 2 ERP system focused on a government market would be more responsive to structuring solutions to meet the needs of the municipal industry best practices.
3. **Less Complex ERP**: A Tier 1.5 or Tier 2 ERP system would be less complex to learn, configure.
4. **Fresh Start**: With the move to a new product, the excitement of a "fresh start" makes the implementation somewhat more likely to be successful.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to replacing the existing applications environment with an integrated ERP at the County:

1. **Change Management Challenges:** This option will cause disruption to County users within the organization as processes, procedures, and training needs would likely require an extended amount of re-engineering.
2. **Extended Duration of Implementation Project**: Establishing a transition of this magnitude will require staff augmentation that will increase staff support requirements in order to complete a complete migration which will require several months to perform.
3. **Existing Investment Lost**: The investment made to interface the present systems (including recently implemented SciQuest) would be lost and the third party systems would have to be re-interfaced.

OPTION 3, ALTERNATIVE B: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope coupled with past actual pricing taken from selected Tier 1.5 and Tier 2 vendor proposals to similar sized entities as the County, we have estimated internal and external cost projections.

Option 3, Alternative B	Fully Integrated ERP
One-Time Cost Summary	
Software License	$3,570,000
Implementation	$10,710,000
Hardware	$714,000
Total One-Time Cost	**$14,994,000**
Ongoing Cost Summary	
Annual Software License and Maintenance	$1,506,000
Other Annual Support Services	$364,800
Internal Staffing Costs	$1,950,000
Total Ongoing Cost	**$3,820,800**
Other One-Time Costs	
System Selection & Implementation Management	$1,500,000
Project Contingency	$1,500,000
Total Other One-Time Costs	**$3,000,000**
Total One-Time Cost	**$17,994,000**
5-Year Cumulative Cost (Estimated)	**$33,979,000**

Assumptions for Option 3, Alternative B:

- All costs are estimated and are derived from Plante Moran's historical data of system costs for similar public sector entities, as identified by FTE, total budget, and population.
- Ongoing costs are assumed to be waived in year 1.
- Estimated 5-year costs assume a 3% annual inflation rate.
- Staffing costs for a future ERP are a combination of support costs to replace advantage ($1,350,000) and estimated support costs for Ceridian ($150,000 x 4 FTE's).
- Software license costs are assumed to be 25% of the total one-time cost (excluding hardware).
- Implementation costs are assumed to be 75% of the total one-time cost (excluding hardware).
- Hardware costs are assumed to be 5% of the sum of the one-time application license and implementation costs.
- Contingency is assumed to be 10% of the implementation cost.
- System selection costs are assumed to be 10% of the implementation cost.

4.9 PLANTE MORAN RECOMMENDATION

While small improvements could be made or added to the current applications which would mitigate the investment required by changing systems, the primary challenge with maintaining the status quo would be the inefficiencies and lack of centralized information due to multiple systems and side systems. Plante Moran does not view Option 1 as a viable long term strategy.

As such, Milwaukee County should direct its analysis efforts towards evaluating the advantages and disadvantages of changing the current environment to either upgrading the existing primary enterprise systems (and further deploying and integrating current systems) or replacing them with a suite of integrated ERP modules from an ERP provider.

Given the functional and technical complexities associated with interfacing the County's multiple best of breed and standalone systems, as well as the related need to fundamentally re-implement many aspects of the existing financial, procurement and personnel systems, the County would be best served to move toward an ERP approach via a competitive bid process. Overall, this strategy would provide Milwaukee County with the following benefits.

1. Opportunity to Leverage Technology for Business Process Improvement: The strategy of moving toward leading ERP packages will lead to the standardization of business processes across the organization. Because customization increases both current and future software costs, the County can adopt the "vanilla" processes and best practices embedded in the software. An added benefit of this is greater discipline across departments.
2. Comprehensive Functionality: The strategy of moving to an integrated ERP solution is to provide the majority of functional and technological needs of an organization in a comprehensive suite of integrated applications. The major components of an enterprise solution are accounting and finance; payroll/human resources management and purchasing.
3. Reduce Software Fragmentation: Compared to the multitude of standalone systems that comprise the current technology environment, an ERP would be the backbone of a comprehensive administrative systems strategy. In addition, the selection of an ERP system will guide future IT investment decisions, as those investments would need to interface with the ERP software.

Assuming that the results of the study are considered and the recommendations for system selection and implementation presented in the Recommended Next Steps section are followed, we recommend that Milwaukee County consider Option 3: Replace Current Systems with a New Fully Integrated ERP Environment.

5 Recommended Next Steps

5.1 ERP SYSTEM EVALUATION APPROACH

To implement the recommendations presented herein, the following approach is recommended:

1. **Review and obtain a complete understanding of the ERP Feasibility Study.** The report and accompanying options and alternatives should be reviewed in their entirety to gain an understanding of what is being presented and to prompt discussion and feedback on elements of the report.
2. **Garner support for the recommendations.** Within the report, there are numerous recommendations that will direct the use of staff time and other resources at the County. Support for the recommendations will be essential in its success. In addition, there will likely be numerous existing ordinances and polices that must be reviewed and potentially changed. Support for making these changes must come from the County leadership including County Board Members, the Executive Steering Committee and Department Directors.
3. **Establish capital budgets and obtain funding.** As part of the initial implementation of the plan and on an on-going basis, funding will need to be obtained to implement the initiatives in the plan.
4. **Execute.** Once approval for the project has been obtained and initial capital funding requests initiated, the implementation of recommendations can occur. The County will need to assign specific resources to fulfill the roles recommended.
5. **Continue with system procurement.** Best practice system selection approaches and implementation approaches should be considered in the selection of a new system to replace current Advantage/Ceridian and related systems.

5.2 PROJECT STRUCTURE AND GOVERNANCE

Execution of the recommendations and implementation of a new system will require a well-coordinated and well-organized governance structure in which to operate and manage the project. For the new system being considered by the County, many staff at the County will be impacted. Complex system implementations are most successful at organizations with structured project governance.

The process and technology changes will be significant and will impact all departments. There will also likely be policy changes that will need to be considered and implemented to receive the full benefits.

Strong project management is also critical for deployment, and becomes increasingly important with the new system investment. As a result, it will be critical to form a project structure that incorporates the following:

1. Considers the needs of a variety of stakeholders
2. Provides the ability to make decisions in the most efficient and effective manner
3. Ensures that project communication is flowing to the right individuals at the right time including those that are part of the project team and those external to the project team
4. The project team structure is empowered by management to enforce policies

Recommended Strategies:

1. Confirm a formal governance structure to coordinate the selection of the new system using the current ERP System Feasibility Study teams as a basis, with the intent that structure can be leveraged and specific roles can be re-defined for future design, implementation and maintenance phases of the system lifecycle.
2. As part of the RFP process, request information from vendors as to the optimal County staffing structure and time commitment required for a successful system implementation including on-going support and maintenance of the system.
3. Prior to launching the implementation phase of the project, establish expectations with the County staff as to the time commitment that will be required for a successful implementation.
4. With the assistance and advice from the selected vendor(s), institute an implementation governance structure that is well-staffed and supported by executive management within the County.
5. Establish policies to sunset legacy solutions, supplemental applications and side systems, in conjunction with the new system implementation so that they do not perpetuate an environment of dual information tracking.
6. Establish data retention requirements to guide and manage the scope of required data conversion.

5.3 REQUEST FOR PROPOSAL (RFP) TACTICS

The Request for Proposal (RFP) for a new system will encompass a number of sections including a list of the scope of software modules to procure and a list of detailed software specifications supplemented by other tables including interface requirements and migration paths for existing systems. We recommend the organization of potential modules as they relate to the continued assessment for inclusion in various phases of the project to be organized as follows:

1. Core Modules: These modules are ones whose existing legacy software resides in Advantage/Ceridian that are intended to be replaced as part of the project through the RFP process although their replacement will likely occur in various stages of software implementation.
2. Expanded Modules: These modules are ones that are being considered for further evaluation during the RFP process and may or may not be replaced as part of the project depending on a number of factors.
3. System Interfaces Required: These modules are ones that are not within the scope of the project but may have interfaces to the implemented new solution. At some point in the future, the County may consider replacement of these modules or a marketplace assessment to determine the current vendor solution set that exists for these areas.

Recommended Strategies:

The following strategies should be considered by the County as it continues through the RFP and due diligence activities leading up to the selection of a future ERP solution:

1. **Vendor clarity in RFP**. Ensure that software vendors are clear as to the strategy of the organization as it relates to the procurement of replacement software.

2. **Open procurement process.** Preliminary project cost estimates for Tier 1.5 vs. Tier 2 vendors vary significantly. The County should define both functional and technical requirements as part of the RFP process and allow both tier vendors propose their respective solutions. Then the County will be able to evaluate the solutions based on the selection criteria and conclude on the most appropriate level of investment. The ERP Marketplace Assessment section further details the differences between the tiers.
3. **Identify other vendor capabilities and solution scope**. Within the RFP, include additional questions pertaining to the capabilities of vendors in other areas not considered as part of the initial scope of the project (e.g., system interface required modules) but which may be available from the vendors.
4. **Balance a strategic vendor decision with a preliminary investment**. Include all modules which the County may consider as part of a new system procurement and structure the RFP to provide "a la carte" pricing. This will allow the County to evaluate the full scope of the vendor solution to aid in the strategic decision of the vendor platform, however make a subsequent conclusion on phasing the investment.
5. **Progressive elaboration**. As the County learns more about the work of the project, planning can progress, becoming more elaborate, over time. Using consultant templates and expert judgment can assist with leveraging lessons learned from other similar local public sector organizations; however specific implementation planning requirements will be increasingly defined throughout the project phases.
6. **Evaluate financing options.** As part of the RFP process, the County may wish to consider financing options that are available from the vendor or other third party to provide a more palatable payment stream to fund the capital cost of the project.
7. **Leverage a prime vendor approach towards implementation.** Regardless of the solution set that is selected, to the extent possible the County should work to maximize contracting with a single, prime vendor who has prime responsibility for the implementation of the entire solution set that is purchased by the organization. It is reasonable to expect that a substantial portion of the current manual processes and side systems could be incorporated within a new system. With the prime vendor approach, the County would have the opportunity to choose separate personnel system, financial and purchasing functions should be combined and it is envisioned that the software marketplace offers solutions that would provide the County the opportunity to integrate all these major functions if desired.
8. **Software and services solutions.** Ensure that information is gleaned from providers of new system solutions in areas of both product and service as part of the RFP and due diligence activities. Specifically, this would include the following:
    a. Review their product offerings as requested in the RFP.
    b. Identify and contact relevant references of a comparable size to the County.
    c. Develop vendor demonstration agendas that are geared towards identifying how the vendors will achieve specific the County outcomes.

For multi-product solutions, assess the degree in which these various products have operated with each other at other clients.

5.4 PHASING

Due to the integration and data access that they can provide, many systems, particularly ERP systems, are complex and require organizational commitment to successfully implement them. It is not uncommon for organizations the size of the County to take between 18 to 24 months to implement such systems. The implementation of a new system presents a number of options as to when certain modules are deployed frequently based on when the various business cycles are executed within the County such as:

- Fiscal year-end
- Calendar year-end
- CAFR development
- Budget development
- Open enrollment

Recommended Strategies:

Although there is no perfect answer as to when certain modules should be deployed, the following best practices should be considered related to the implementation phasing set of activities:

1. **Implement complimentary modules together.** There is a natural implementation phasing of like modules as part of the deployment of a new system. For example, core financial modules should be implemented together. Likewise, HR/Payroll modules, to the extent incorporated, should be implemented together as well. This is another example of factors to be considered when determining an overall implementation approach.
2. **Avoid "Big Bang Approach".** The deployment of a new system is a very significant project requiring a large amount of staff and vendor time to implement as it will impact people, process, policy and technology. Careful phasing of implemented modules should be performed versus a "big-bang" approach of implementing all software at the same time to minimize overall project risk and to ensure optimal utilization of resources. The County may wish to consider separating core financial modules, payroll and personnel, and procurement functions into separate phases. Integrations to other the County systems should follow, as the system modules are implemented over time.
3. **Evaluate opportunities for "Quick-Win" implementations.** There are a number of opportunities to obtain quick-win implementations of a new system that provide visible evidence of project success and minimize the risk of bringing all modules up simultaneously. Frequently, modules such as Debt Service Management and Investment Management are isolated to a limited number of individuals, are relatively simple to deploy and do not have significant interaction with the core financial system. Opportunities for these quick-wins should be explored during the vendor selection phase of the project and more closely during system implementation. Certain "quick-wins" may need to be initially implemented in stand-alone mode with or without temporary bridges in place and then later integrated when the core system is live.
4. **Implement considering natural business cycles.** A natural tendency is to implement the financial components of a new system such that go-live is on a fiscal year-end to have all transactions for a year on one system. In general, there are many cases where this is not the ideal situation as the post go-live challenges with implementing a new system impede significant activities that are required for year-end close. HR/Payroll solutions tend to go-live on a quarterly basis and the County may wish to consider going live at a calendar year break due to the processing of W-2 statements for employees. Regardless, natural business cycles should be considered as part of the phasing of new system modules.

5.5 STAFF BACKFILL

Frequently, staff who are the most desirable to lead a new system a replacement project are also the ones who also have the most knowledge of the legacy environment and are viewed as key in maintaining the integrity of the existing environment. This is true at the County.

Recommended Strategies:

1. **Factor backfill costs in project budget.** The County should consider the feasibility of additionally factoring backfill costs into the overall project budget that is presented to the County Council as part of the entire project budget.
2. **Consider recent retirees to provide backfill.** To the extent feasible, evaluate the opportunity of using any recently retired staff to provide backfill support for the project or to provide assistance in critical areas deemed important for the project due to their institutional knowledge. This may include areas such as data cleansing, where institutional knowledge is relevant, or for addressing day to day operational responsibilities, while current the County subject matter experts focus their attention on the new system implementation effort.
3. **Consider workload sharing.** Based on normal business cycles, certain County staff may become especially busy addressing operational requirements. During these times, to the extent that other County staff can re-focus their efforts to assist them in their operational duties, it can mitigate the bottlenecks which can result and increase staff availability to participate on the project. Additionally this can help with staff cross-training, and collectively "upgrade" staff skills in each work area. To the extent that the County can proactively initiate such approaches in advance of the new system implementation project, it can provide benefits to allow subject matter experts to more easily transition to their project roles.

5.6 DATA CLEANSING / CONVERSION

Legacy systems frequently have data stored in a variety of formats either electronically within the system or in hard-copy format that is deemed as critical, and has data retention requirements. Vendors will generally provide two approaches towards the conversion of client data. In one method, vendors will provide a template format to the County and request that all data to be converted is provided in the requested format regardless of the number of data sources that currently house this information. In the second method, vendors will manage both the extraction and conversion of information into the template format. In both cases, the data conversion process will be iterative in terms of extracting, converting, reporting and reviewing.

Likewise, cleansing of the data prior to the data conversion activity during implementation, though time consuming, will generally make this process occur more smoothly. Regardless of the methods taken, data conversion is considered a critical part of system implementation and one that can be a critical risk to the project if not managed correctly. A certain amount of data cleansing can occur after data is extracted using programming.

Recommended Strategies:

1. **Data conversion requirements.** Define general data conversion requirements in the RFP and work with the tentative finalist vendor during the last stages of the selection to finalize the scope of conversion within the Statement of Work (SOW) with the vendor.
2. **Historical information.** Avoid converting all historical information to the new environment. Establish and use data retention guidelines to drive the scope of conversion. Instead, consider the conversion of summary information as a first course of action unless detail is needed.

3. **Historical data access.** Consider alternative options of accessing historical information other than electronically. This may include printing of reports to electronic files or the creation of a data warehouse.
4. **Design conversion specifications.** Develop a cross-walk between legacy and new system data as part of the conversion process. For example, this may include development of an interface that allows users to enter in an old account that then displays the same account in the new structure. Likewise, an old vendor number could populate a field in the new system to act as a cross-reference.
5. **Data cleansing.** Begin data cleansing activities as early as possible. For example, the County may wish to start reviewing its existing vendor file and eliminating duplicates or vendors who no longer exist. During the implementation phase of the project, most vendors will provide specific instructions related to data cleansing activities.
6. **Use of data warehouse.** As a separate internal project, consider the use of a data warehouse for housing of legacy data for historical reporting purposes. If this route is chosen, clear responsibilities for separately acquiring and implementing the data warehouse will be required to consider both vendor and the County staff involvement.

5.7 INTERFACE DEVELOPMENT

Interfaces related to the deployment of a new system can exist in various forms as follows:

1. Standard imports or exports provided by the vendor's solution with entities and systems outside of the County (e.g., benefit providers, other governmental entities, etc.).
2. Interfaces between the vendor's solution and applications that are not being considered for replacement as part of the project.
3. Interfaces between the vendor's solution and applications that are being considered for replacement as part of the project that may or may not be provided by the prime vendor.

Decisions as to who will develop and provide on-going support for system interfaces are another important factor to consider. Certain vendors will provide toolsets that assist in the development and management of system interfaces.

Recommended Strategies:

1. **Identify interface requirements early.** Define potentially needed interfaces between the new system and external entities in the RFP. This would include existing as well as desired new interfaces that would be populated in the Application Interface Table of the RFP.
2. **Define full scope of interfaces.** Define potentially needed interfaces between the new system and other County systems not being replaced in the RFP. This would include existing as well as desired new interfaces that would be populated in the Application Interface Table of the RFP. Identify other candidate interfaces in the RFP with systems that may or may not be replaced.
3. **Prime vendor and interfaces.** Ensure that the prime vendor is responsible for the delivery of all system interfaces during implementation.
4. **Shadow support staff.** County staff should shadow vendor staff during system implementation to develop an understanding of their conversion tools such that the County can maintain those interfaces designated for the County support going forward.
5. **Leverage existing interfaces.** Consider allowing the software vendors to maintain interfaces that exist between their product and entities outside of the County (e.g. benefit providers, IRS, etc.) and, as an option, other systems not being considered for replacement by the County.

6. **Process redesign consideration of interfaces.** In conjunction and as a result of the implementation's business process redesign activities, perform the necessary work to further inventory the system interface requirements, develop an system interface plan, design and develop the system interfaces, test and accept the interfaces and implement them in conjunction with the "out of the box" system implementation.

5.8 REPORT DEVELOPMENT

Although the selected vendor will likely provide a significant number of reports and queries through their base system there will be a need for the County to have existing reports customized and to have additional reports developed that are not available as part of the core set of reports. The skill sets required for report development include not only the report development tools but also an understanding of the database and/or views which the reporting tools access. Likewise, if the County pursues the use of a separate data mart / data warehouse in order to perform more complex analysis, additional skill sets will be needed.

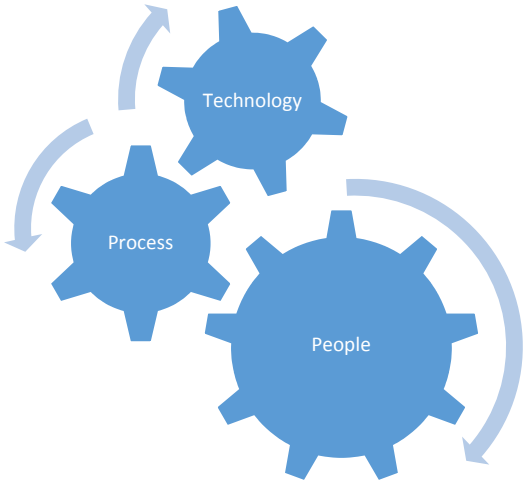
When software vendors demonstrate their solutions, the expectation of users being able to perform ad-hoc reporting themselves is heightened as the vendors will present the process as simply involving the point and click of a few buttons to generate the desired results. In reality, the process of using the tool and developing an understanding of the database/view takes a period of time.

Recommended Strategies:

1. **Establish expectations around reporting.** Reset staff expectations that traditional reporting should not necessarily be the first or most appropriate method towards obtaining the financial, procurement or HR information that they seek. Instead, as part of the overall training approach, ensure that staff understand the self-service, inquiry and portal functions available in the system, and when to use them. Reset staff expectations that not all reports will be available at the go-live transition and that all users will be able to generate ad-hoc reports.
2. **Ad-hoc reporting tools team.** Identify a joint team of process owners and technical support staff to be trained on the ad-hoc reporting tools during the implementation. These staff will likely be generating custom-developed reports for some time after the go-live period.
3. **Assess ad-hoc reporting tools.** Obtain a clear understanding during the selection process as to the reporting options available with each vendor solution and, for each reporting option, who typically is using the tool.
4. **Custom reports.** Work with the software vendor during the implementation phase of the project to develop a select set of custom reports, with their assistance, to improve knowledge transfer as to both the product and database structure.

5.9 CHANGE MANAGEMENT

Project success comes from having a very clear idea of how management would like to run the County, and then using redesigned processes and a new system to facilitate the way the County has envisioned it. When process and software implementations do not meet expectations it is often due to people issues, and not necessarily the technology. Research indicates a correlation between the success of a change initiative and how well the people side is managed throughout the change. That is why applying a change management methodology is critical to the success of such an initiative. A rigorous change management methodology is critical to supporting the successful launch of new processes and systems. The purchase and implementation of a new system and related technology is done to assist in meeting organizational objectives and improving performance. Organizational performance is also impacted by the people of an organization and the processes used to complete work. Throughout the project, the goal is to balance these components, as illustrated:



5.10 COMMUNICATION PLANNING

As part of the first steps of change management planning, the County should develop communications plans intended to guide project communications from process redesign through post-implementation. By its nature, the project will affect many staff across the County.

Acknowledging the diverse County audiences that will be involved and impacted by this project, a Communication Plan should be developed to create awareness and make the project relevant by effectively communicating the impacts to both internal and external stakeholders. Sample objectives for a Communication Plan may include:

1. Accurately distribute information in a timely manner concerning important project benchmarks and progress to employees.
2. Use various media to provide multiple sources from which information concerning the project can be accessible.
3. Ensure all information available is updated and accurate.
4. Reduce confusion among employees by providing a sole directive and source from which all project information originates.
5. Provide clear channels of communication within which County project staff can operate to lead to an expedited solution to issues that arise during the selection and implementation and after its completion.
6. Encourage feedback from employees across the County

Recommended Strategies:

1. **Assign a communication coordinator.** The County should assign a communications coordinator to the project management office to maintain and execute the communications plan.
2. **Identify and empower change agents.** A Communications and Change Management Team should recommend the appointment of key “change agents” within each Department to nurture 'buy in' and get Department staff committed to taking relevant actions. Such team members will be involved in educating Department staff about the impacts and benefits of the project and be “inspiration agents” by helping Department staff find ways to discover their potential, overcome barriers, and celebrate successes. These staff should monitor "what is working", "what isn't working" and "what do we need to change" – and provide regular feedback on progress to Department staff.

5.11 PROCESS RE-DESIGN

The ERP System evaluation activities that were conducted surfaced several opportunities for improvements in the management and execution of existing processes. Through the course of conducting process owner process user review sessions, process-specific as well as the County-wide issues and opportunities were surfaced. The County should re-engineer appropriate business processes in conjunction with the implementation of the new ERP, as part of a successful change management approach.

The mapping of "to be" business processes and certain high level process redesign can be performed in advance of the implementation, either prior to or during the time that the County is facilitating a RFP process. Along with process redesign, the County should select key performance indicators (KPIs) that will be used to measure the County's performance along with targets that are based on best practices. Ideally, the County will measure performance according to selected KPIs prior to implementation, six months after implementation, one year after implementation and quarterly thereafter (some organizations evolve to monthly, especially once business intelligence and dashboard solutions are implemented).

The County should keep in mind the following:

1. The earlier process redesign is performed in the selection process, the more information the County will have about the "to be" process which can serve as a basis for selection, along with other factors such as cost, functionality, technology, implementation timeframe, etc.
2. If performed early in the process (e.g., prior to selection), management at the County will likely face trade-offs in terms of cost versus ability to support "to be" processes.
3. The County will need to remain flexible in terms of which parts of the "to be" process are actually implementable, given the new system capabilities. In fact, the vendor solution may provide features resulting in a better, more efficient "to be" process.

During the implementation phase of the project, there may be significant levels of review conducted by the selected vendor(s) to understand existing County processes and how their software can be used to improve the efficiency and effectiveness of these processes. While vendors may offer additional optional services to provide enhanced levels of implementation support to their customers, it is generally considered the responsibility of the client to develop the actual procedural documentation that defines exactly how these processes will operate with the selected system for use by process owning and process end-user staff.

5.12 ERP SYSTEM TRAINING

The County should develop appropriate training plans in conjunction with the implementation of the new system. The County does not currently have a formalized enterprise wide training program for existing financial, procurement and human resources systems.

The process of providing training to on the new system should occur in in conjunction with the implementation of the new system. Training should be both functional and technical. Functional training should be for both process owners and process end users. It will also be critical to provide the necessary technical training to the County IT and departmental "power user" staff.

Recommended Strategies:

1. **Establish training expectations.** During the RFP development and due diligence activities associated with reviewing vendor responses, ensure that any specific training expectations are articulated to the vendors. As part of the due diligence phase with the finalist ERP vendors obtain a clear understanding as to the level of training activities they will conduct during the implementation phase of the project and the specific training materials.

2. **Training team.** During the implementation of the new system, formulate a Training Team which will focus both on the implementation training requirements on the development of an ongoing internal training program for continued exploitation of the capabilities of the new system over time. Consider the use of a “train the trainer” approach, whereby the County would save on vendor implementation expense, as well as encourage process owners to become knowledgeable about the key aspects of the system.
3. **Budget for future training.** In future budget cycles, consider including an ongoing training budget specific to the system, to assist in maximizing the ongoing leveraging of the County’s investment.

6 Appendices

6.1 APPENDIX A: PROJECT PARTICIPATION

In addition of the many project management planning meetings and informal communications, phone discussions, email communications and other inquiries, the following groups, teams and individuals participated in the interview process and development of the ERP System Feasibility Study report.

Meeting	Participation / Invitations
Project Sponsor	• Steve Kreklow
Executive Steering Committee	• Laurie Panella • Scott Manske • Raisa Koltun • Teig Whaley-Smith • Kerry Mitchell • Steve Kreklow
Project Management Office	• Coco Kalinowski • Laurie Panella • Tracey Carson • Paul McAllister • Brian Birchbauer
Department Heads	Department Heads with primary responsibility for Process Owner and Process User departments and offices.

Meeting	Participation / Invitations
Process Owners	Various subject matter experts and end users from process owning departments including: • Michael Blickhahn • Pamela Bryant • Rick Ceschin • Sue Drummond • Ted Fancher • Chris Fleissner • Matthew Hanchek • Jerry Heer • Steven Kreklow • Patrick Lee • Scott Manske • Vincent Masterson • Kerry Mitchell • Marian Ninneman • Rick Norris • Luis Padilla • Amy Pechacek • Rex Queen • Mark Tillman • Susan Walker

Meeting	Participation / Invitations
Process Users	Various end users who participated in the on-site interviews from the process user departments as follows: • Aging • Child Support • Combined Court Operations • Comptroller • Corporate Counsel • County Board • County Executive • County Executive - OEM • County Executive – Vet Services • Department of Administrative Services – A&E • Department of Administrative Services – CBDP • Department of Administrative Services – CBO • Department of Administrative Services – Econ development • Department of Administrative Services – Facilities • Department of Administrative Services – Fiscal – Perf Strategy • Department of Administrative Services – IMSD • Department of Administrative Services – Office of Persons with Disabilities • Department of Administrative Services – Procurement • Department of Administrative Services – Risk Management • Department of Health and Human Services – BHD • Department of Health and Human Services – DCSD • Department of Health and Human Services – Housing • District Attorney • Election Commission • Ethics – Personnel Review Board • Family Care • House of Corrections • Human Resources • MCDOT – Airport • MCDOT – Fleet • MCDOT – Highway • MCDOT – Transportation Services • MCDOT – Transit • MCSO • ME • Parks • Register of Deeds • Treasurer • Zoo

6.2 APPENDIX B: PROJECT CHARTER

PROJECT NAME: ERP Feasibility Study

MISSION STATEMENT:

The project will identify the future business systems environment that will support County staff in the delivery of services and activities, establish best practices, and significantly improve the efficiency and effectiveness of County's service delivery and business processes.

PROJECT OVERVIEW:

The County will conduct an ERP system needs assessment that will provide alternatives for a future direction and business case for the County's Financial and Human Resources Systems environment.

PROJECT OBJECTIVES:

- Identify challenges, including people, process and technology with current County financial and human resources related business processes
- Identify opportunities for process improvements, with and without new technology
- Identify system and support requirement needs for a new systems environment.
- Identify options for the County to consider in migrating to a new systems environment
- Identify realistic budgetary costs associated with alternative proposed systems environment
- Develop a business case for moving forward with a new systems environment
- Move financial system off of the mainframe.
- Identify proposed systems that ensure limited/no customization.
- Develop a long-term ERP system support model that is affordable and will contribute to effective HR and financial process.
- Identify methods to maximize knowledge transfer during the implementation process to ensure the County is fully able to maintain, operate and improve the ERP in the post implementation environment.

BUSINESS DRIVERS:

1. One current view of the data. Eliminate conflicting information, redundant systems (spreadsheets, multiple systems with the same basic functionality, etc), and inability to access data.
2. Significantly reduce process time through business process reengineering and best practices in the ERP system
3. Users & vendors can see where their transaction is in the process. Fewer phone calls/e-mails for status.
4. Eliminate paper-based processes & forms
5. Quality is moved to the front of the transaction
    a. Data is entered into the system only once
    b. Data is entered into the system as close to the point of origin as possible

   c. The system includes appropriate edits, prompts, menus and controls to ensure that data is entered correctly.

6. Challenges and risks with maintaining a legacy Maintaining Z Series environment
7. Challenges of maintaining appropriate system security and integrity of data.
8. System Availability and Service Level Objectives are defined and met.
9. Meet the need for basic metrics and analytics not currently available.
10. Need for increased engagement of employees and leaders in our business processes.
11. Need for complete and accessible documentation of business process and a more broad and complete understanding of these processes among County employees

PROJECT INFLUENCES:

- Existing processes have been in existence for an extended period of time that are paper-based and are based on existing technology
- Inertia/resistance to change
- Budgetary challenges
- Legal or Regulatory Constraints
- There is a consensus building culture versus best practice adoption

CRITICAL SUCCESS FACTORS:

- Ensuring that all of the needs of the County are thoroughly defined, documented and understood by the vendors
- Business process reengineering takes place as appropriate in a timely manner
- Consultant understanding of what the County is trying to accomplish
- Obtaining buy-in from the departments on the process for defining their needs
- Gaining ownership by the departments on the project
- Transparent communication on the needs assessment
- Ability to change relevant processes, policies and procedures as needed during the implementation process.

PROJECT CONSTRAINTS:

- Staffing resources
- Budgetary constraints
- Legal restraints that impact County financial and human resources operations

PROJECT SCOPE:

- ***In-Scope:*** This project will impact the business processes that the County employs to accomplish most financial and human resources related tasks including:

Functionality in Scope	
General Ledger	Human Resources
Budgeting	Payroll
Accounts Receivable	Time and Attendance
Accounts Payable	Contract and Document Management
Purchasing	Project/Grant Accounting
Fixed Asset Management	Treasury Management
Cash Receipting	Financial Reporting
Inventory Management	Pension Administration
Grant Accounting	

- ***Out-of-Scope:*** The following areas are deemed to be out of scope for this project:
  - Customer relationship management (CRM system)
  - Law enforcement processes that are not associated with budgetary, financial, payroll, or human resource management.
  - Jail management system (jail & inmate operations)
  - Land development and land management processes and systems
  - Court specific processes and systems that are not associated with budgetary, financial, payroll or human resource management.
  - Project management systems
  - Enterprise Asset Management and Fleet Management
  - Tax Billing & Collection (Real, Personal Property, etc.)
  - Maintenance management processes and systems

Consider the following <u>GUIDING PRINCIPLES</u> during ERP needs assessment. Revisit these principles at each stage of the project. The ERP Executive Committee shall not be held to these principles, since project direction may change:

The County shall adhere to the following principles throughout the planning, design and implementation of the project:

a. We will embrace process improvement strategies and implementation of new and best business practices within the constraints of budgetary limitations.
b. Information is a County asset and a government record to the extent that it is not confidential or private
c. Establish common processes & practices across the County.

d. Focus on process and transaction quality; build quality at the source.
e. Provide relevant, timely, and consistent management information.
f. Minimize resources allocated to transactional activities; focus more on information to sustain the business.
g. The Project Steering Committee shall be composed of County leadership staff who are committed to dedicating appropriate staff resources to ensure the success of the project. The project budget shall provide funds to back-fill positions assigned to the project. This funding will allow personnel to be dedicated to the project.
h. The County shall embrace financial accounting and personnel management best practices.
i. Decisions related to project activities and system implementation shall be developed for the betterment of the entire County.
j. Department needs shall be given adequate consideration in the development of project policies and activities.
k. The Project Steering Committee commits to maintaining communication throughout the project
l. The County's IT architecture & standards shall be followed
m. Investments in Technology shall optimize capacity, efficiency, and Cost Efficeincy.
n. The County is committed to providing staff training to become proficient in their functions.

PROJECT MILESTONES AND DELIVERABLES:

- Phase 1 - ERP Needs Assessment Report Development:
  - Draft Needs Assessment
    December 21, 2015
    - Issues and Opportunities
    - ERP Marketplace Assessment
    - Options and Alternatives
    - TCO and ROI

  - Present Draft Report Findings and Recommendation (ESC): Jan 6, 2016
  - Present Final Report (ESC, Departments, Process Owners): Week of 2/22, 2016
  - ESC to Determine Next Steps (TBD)

- Phase 2 – Analysis and Design
  - Start date to be determined
  - This phase will be a 8 week time frame

PROJECT ORGANIZATION STRUCTURE

Following are the roles that will be employed for the project. These roles are essential for the success of the project and are intended to define the project reporting structure and lines of authority for decision-making.

The management component of the project consists of the Executive Sponsors, the Project Steering Committee and Project Managers. The Project Managers report directly to the Project Steering Committee. Leadership is further broken down into Functional Team leads. Further description of the teams, membership and responsibilities are outlined below.

Project Role	Individual(s)	Responsibility
Executive Steering Committee	Scott Manske Raisa Koltun Teig Whaley - Smith Kerry Mitchell Steve Kreklow Laurie Panella	• Review and approve Project charter • Maintain the project vision • Act as the project champion • Energize the project leadership and teams • Be visibly committed to the project • Provide a strategic perspective when defining the needs for a future ERP system and associated processes • Remove project roadblocks • Lead conflict resolution process when process ownership is in question • Secure alignment across departments • Coach the project leadership • Review and approve the final report deliverable
Executive Sponsor	Steve Kreklow	• Validates and approves the project goals and objectives • Sets the direction and approach for future state vision • Reviews the project progress, adjusts vision as needed and resolves issues as escalated by the ESC (a tie breaker if you will) • Securing the appropriate funding
Project Steering Committee (Phase II)	To be reviewed and approved by the ESC	ERP system projects require executive level support from all organizational areas significantly impacted by a new system. The Project Steering Committee should provide incentives to Countywide staff to view the project as a top priority. To the extent possible, the Project Steering Committee is comprised of senior-level managers who have the ability to make the decisions regarding changes in organizational policy and procedures, and to: • Steer the Project Managers • Address issues presented by the Project Manager • Clear roadblocks that jeopardize project success • Create the conditions to make the Project Managers successful in their role

Project Role	Individual(s)	Responsibility
		• Review and decide on proposed changes to organizational policies and procedures that will be impacted by the project • Review and provide feedback on the consultant's report • Review significant project recommendations (e.g., recommended vendor solution)
Project Manager (Phase II)	TBD	It is critical that the project manager be at the center of all project communications and activities so that (s)he is current on the status of the project. All communications and questions about the project shall be directed to the project manager. • Ensure that prompt and clear communications to County department staff is conducted • Act as the focal point for collection of needed documentation for review by the consultant • Manage project milestones & activities • Manage the project budget • Communicate project status, issues and risks to the appropriate stakeholders • Document and track to resolution project issues and decisions • Escalate issues in a timely manner to the Project Steering Committee or Executive Steering Committee as appropriate • Oversee planning activities associated with project • Ensure that project deliverables are reviewed by appropriate County staff • Provide progress updates to County management, Project Steering Committee, County Council and other interested stakeholders • Manage the configuration of the SharePoint site • Work with the team leads in communicating decisions that need to be brought to the Project Steering Committee for review and resolution
ERP Leads ('Champions')		• Work with the Subject Matter Experts to coordinate the activities of their respective teams • Provide information on current County processes, systems and redundant systems used • Challenge project staff to reevaluate how business is currently performed to maximize the capabilities of the ERP applications installed.
Project Administrator	Erin Schaffer	• Schedule various meetings between the consultant and County staff and other necessary project-related meetings • Ensure availability of appropriate resources to support project meetings • Act as a liaison between the outside consultant and the County related to various project logistics • Ensure project communications are distributed

Project Role	Individual(s)	Responsibility
Subject Matter Experts **(Phase II)**	TBD	With a focus on a specific component of the ERP system, the process area team leads work with the project manager to drive the process. Each of these resources must have very strong expertise in his/her assigned functional area and be able to clearly express current challenges and needs as they relate to ERP system areas. • Provide information on current County processes, systems and redundant systems used • Participate in interview sessions with the consultant to articulate challenges, needs and desires for a new ERP system and associated processes • Identify departmental individuals that should be included in the cross-functional sessions • Develop an understanding of how a future ERP system and associated processes might operate • Identify and communicate potential procedural or policy changes that may require decisions related to implementation of a new ERP system • Review and provide feedback on the Needs Assessment report
Training Team (Phase II)	TBD	Works with the project team to develop and deliver role-based instructional and online training. This effort includes: • Participating in appropriate project activities required to gain knowledge of the ERP system and aligning business processes • Developing appropriate training materials and job aids • Delivering training via instructional-led training sessions • Providing appropriate post-training customer support, including: o Leading or participating in refresher training/ workshops o Providing peer-based support through responding to questions and requests for assistance • Providing feedback and recommendations to the project steering committee on training effectiveness and staff feedback
Change Management Lead (s) **(Phase II)**	TBD	Drive, manage and monitor readiness strategies and activities, as outlined in future Organizational Change Management, Communications and Training Plans. • Provide regular reporting to the project steering committee on the overall readiness of department staff, key activities and issues
		Work with departments to track and monitor readiness for departmental staff, including: • Employee readiness assessments • (highlights current & future job roles, readiness level, training gaps, tasks/actions required to mitigate issues and prepare staff for the changes) • Business processes & policies changes

Project Role	Individual(s)	Responsibility
		(coordinate with ERP leads) o Monitors how changes impact employees and assists in the development or execution of key activities needed to mitigate issues and prepare staff o Ensure workgroups/ employees have the needed procedural documentation/ job aids • Employee acceptance & support o Coordinates employee-wide and departmental employee outreach activities o Monitors and escalates issues that may require one-on-one meetings with employees, “soft skills” o workshops o Works with project team members to develop a solid support structure within the workgroup to provide peer-based employee support following post-implementation • Training & support o Facilitate communications and plans with the training lead on the development and execution of the training plan, and to ensure employees have learning paths/ attend the appropriate training workshops and activities
Technical Team	Nick Wojciechowski, Paul McAllister	• Provide information on the County’s current IT infrastructure during the Needs Assessment phase • Provide information regarding the current ERP systems environment • Define technical requirements for a new ERP system • Define current County technical standards
Outside Consultant	Plante Moran	• Facilitate the needs assessment phase of the project • Apprise the project manager of current and potential project risks and discusses means of mitigating these risks • Work with the project manager in scheduling, planning and conducting on-site visits • Provide leadership and guidance to the County throughout the project • Develop project deliverables

6.3 APPENDIX C: APPLICATION INVENTORY

As part of the ERP Feasibility Study, an inventory of all key current software systems has been developed to support the areas in scope for the project, as defined in the project charter. For each current system the analysis identifies a recommended preliminary migration plan for the current application based on all factors. .

Legend for Current Applications

Legend Code		Description
R	Replacement	The County is intending on replacing this application
C	Consider	The County is considering replacing this application with an ERP solution, based on the strength of the finalist vendor offering and cost / benefit of the replacement module
M	Maintain	The County is intending on retaining the application, not replacing it thru the ERP effort
I	Interface	The County is intending on keeping the application and interfacing/integrating it with the selected ERP solution.

#	Current ERP Application	Application Notes-Description	Likely Future?	Expected ERP Module
1	Acadia System	Law enforcement learning for HR	C	Human Resources
2	Access Card	Issuing access cards to facilities	M	N/A
3	ATS	Employee on-boarding for HR	R	Human Resources
4	Aurora	Uploads payroll into system to give HR ability to print report for applicant tracking	R	Human Resources
5	Avatar	Hospital EMR for housing (originally CMHC)	M	N/A
6	BadgePro	Creates zoo employee badges used for identification and access to buildings and gate entrances	M	N/A
7	BRASS	Budget development/controls and grants	R	Budgeting

#	Current ERP Application	Application Notes-Description	Likely Future?	Expected ERP Module
8	Capital Finance Intranet Site	Financial reporting, budgets, vendor payments, fiscal reports/analysis, commodity codes; develops series of reports available on intranet for employees and budget	R	Debt Management, Project Accounting, Procurement, Financial Reporting
9	CARS	State reporting software for housing; State transportation Database for transportation; Accounting State of Wisconsin System for disability services	M	N/A
10	Caseware	Financial reporting/CAFR	C/I	Financial Reporting
11	CBS	HR benefits and administration	C	Human Resources
12	C-CAP	Court employee scheduling and cash receipts	C	Cash Receipting
13	Center for Digital Government (CDG)	Demographic information and integrated disbursement system	M	N/A
14	Ceridian	Time and attendance reporting; payroll for Corporate Counsel; employee data for DA; resource hours for A&E Ceridian documents have moved to SharePoint which the DA can't access	R	Time and Attendance
15	Ceridian HPW	Pensions, W-2s, retirement service credits, demographic information, deductions, power query functions for benefits, new hires and promotion's, licensure tracking of score and date, performance data, position control	R	Human Resources
16	Ceridian Recruit	HR; Applicant tracking of centralized offer letter with list of requirements before starting County does not plan on migrating existing data into new system	R	Human Resources
17	CGI Advantage	Accounting & financial reporting including purchasing, cash receipts, post revenue, expenditure, JVs, AR collections, data for budgets transferred from Advantage to BRASS; cash collection & receivables of benefit premiums	R	General Ledger, Accounts Payable, Fixed Assets
18	CityWorks	Enterprise asset management; New Work Order system for facilities	M/I	N/A
19	Clear, Citrix	Death searches	I	N/A

#	Current ERP Application	Application Notes-Description	Likely Future?	Expected ERP Module
20	COBRA Services	Benefits	C/I	Human Resources
21	Colfax	Scanning system interfaced with V3	M	N/A
22	Core FTP	Pension/death searches	M	N/A
23	Counterpoint	Cash receipting	R	Cash Receipting
24	Crystal Reports	Reporting Tool for Fleet Focus	M	N/A
25	DayForce	Benefits Time and Attendance to be rolled out which maintains different hierarchy for approvals (central payroll/ comptroller's managing initiative to go live)	R	Human Resources, Payroll, Time and Attendance
26	DefBen	Old pension system for referencing	C	Pension Administration
27	Docusign	Contract Management, document signing tracking	R	Contract Management
28	DudaMobile	converts website pages to mobile site ($85/year package)	M	N/A
29	ECHO	case notes, demographic information, income, quantifying/qualitative data	M	N/A
30	eSNAP	Grant reporting	M	N/A
31	Excel	Budgeting, manipulation of data for better use HOC - operational trust, balance sheet account, cashiers schedule Disability Services - track services Aging - tracks statistics DA- Reporting system, track orders, batch accounting, budgeting, accrual analysis, single audits (dictated by comptroller's office), capital finance, expense reports, position hierarchy tracking A&E- job authorizations, water utility management Pension- Dashboard including activities for entire year, tracks items, plan calculations, validate system calculations HR - Benefits, tracking of manual billing and premiums outside of DIA, end of session evaluations for trainings, Employee Relations - reporting discipline, performance, certifications, driver's license validation, corrective action, investigations,	R	Core Financials, Human Resources, Payroll, Financial Reporting

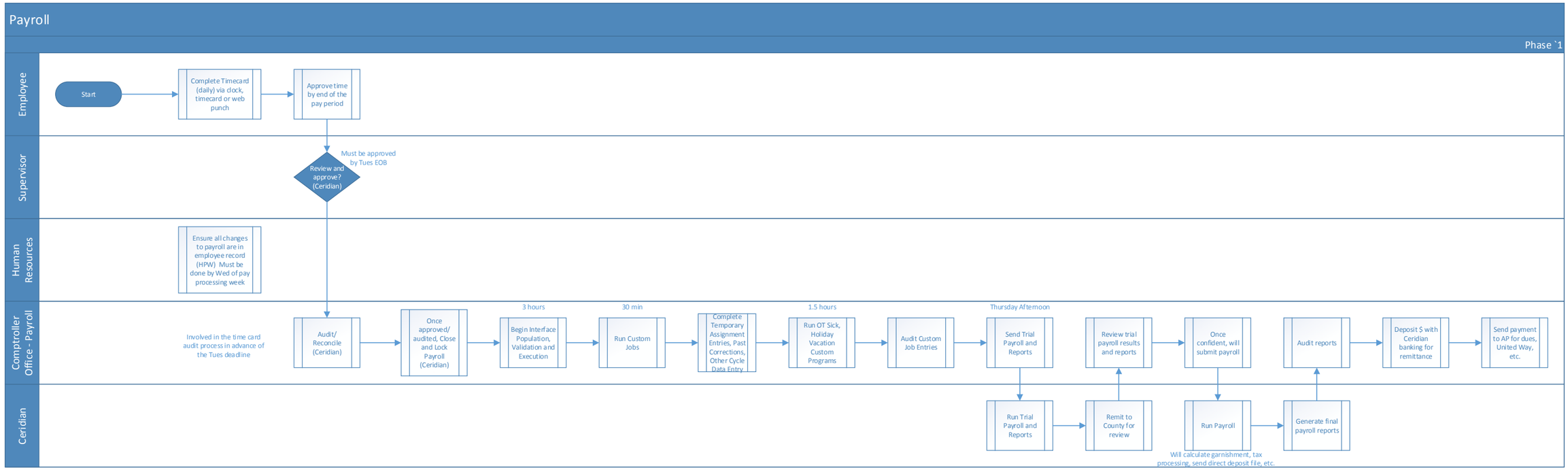
#	Current ERP Application	Application Notes-Description	Likely Future?	Expected ERP Module
		compensation including pay levels, salary budget data, and payroll data Election Commission- campaign finance reports, voting machine reimbursement Facilities- Verify work hours and budgeting Persons with Disabilities- FileMaker reports		
32	FileMaker Pro	Manage mailing lists (4,000 people); rent facilities to public (financials, past renters, invoices, receipts)	R	Accounts Receivable
33	First Advantage	Post-employment drug screen testing vendor	M	Human Resources
34	Fleet Focus 6.4	Fleet management system (due for upgrade May 2016)	M	N/A
35	FMLA Source	Outsourced approval/tracking system for family/medical leave	M	N/A
36	Galaxy System	controls access to gates, building, locks and determines facility access	M	N/A
37	GCR	airport cash receipting system	C	Cash Receipting
38	Green Cards	legacy retirement system; part of Genesis system	C	Pension Administration
39	HASTAS	Time entry	C	Time and Attendance
40	Health eFx	ACA reporting company	M	N/A
41	Healthforce/Health Streams, PerformanUsed	Behavioral healthee' training	M	N/A
42	Human Services Reporting System (HSRS)	State system for disabilities	M	N/A
43	IMSD Purchase Request	Process invoice copier company	R	Purchasing
44	InfoMaker	A&E Reporting tool	R	Financial Reporting
45	Inspect and Track	Bar code reader for inventory, predetermined	C/I	Inventory Management
46	Internet Explorer	Order items online	M	N/A
47	IRR	State system for aging	M	N/A

#	Current ERP Application	Application Notes-Description	Likely Future?	Expected ERP Module
48	JPM	Grant accounting at DCSD (yet to be fully implemented)	M	N/A
49	Keep Account	Inmate trust accounting system	M	N/A
50	Keystone	Zoo-wide key management system	M	N/A
51	LCP Tracker	Payroll for contractors	R	Payroll
52	Ledgistar	Create agendas and related documentation for committee review	M	N/A
53	LMS (Cornerstone)	Training, performance evaluations, employee and leadership training, development and applicant tracking; Migrates into Cornerstone from Ceridian Recruit	C/I	Human Resources
54	Loan Ledger	Monitor loans provided by the County	R	Accounts Receivable
55	Mailcom	Direct deposit notices and pension statements	M	N/A
56	Microfiche	1968-1999 pension data	C/I	Pension Administration
57	MIDAS	Cash receipts for family care, case notes for disability services, client data for aging	M	N/A
58	Morneau Shepell	Online enrollment, vendor interface, premium billing, will continue to outsource benefits administration (previously Ceridian Benefits System)	M	*Likely a new vendor
59	MS Access	Misc. billing, budget planning; Tracking inactive applicants and individuals on waitlist for housing	R	Budgeting
60	MS Outlook	email, calendar, schedule meetings, send info on new policies and procedures for county wide-corrective action, new exit interview strategy, updating policies	R	Human Resources
61	MS Word	Employee Relations- vacation slips, vacation accrual balances Persons with Disabilities- Newsletters, report writing, creating forms that are uploaded onto Titan system DA - reports and forms up A&E- Documents and memo, contracts and agreements	R	Human Resources
62	Municast	Budget Planning- advanced type of spreadsheet for financial planning and forecasting	C/I	Budgeting
63	Nortel	Statistics for call traffic; call content tracked through Midas	M	N/A
64	NCR Counterpoint	POS and inventory system	C	Cash Receipting

#	Current ERP Application	Application Notes-Description	Likely Future?	Expected ERP Module
65	Obra	Pensions	M	N/A
66	Onbase	Budget planning, workflows, employee relations, document management, campaign reporting Facilities- Three-way purchasing system HR- employee records DA - Onbase for ordering A&E- processing utility invoices	R	Budgeting and Human Resources
67	One-Drive	Collaboration	M	N/A
68	Oracle DB	Transit employee scheduling	C	Time and Attendance
69	Oracle BI	Reports	C	Financial Reporting
70	PeachTree	Financials	M	N/A
71	PerformanNumber	Performance evaluations, monthly training report for title of sessions and number of participants	R	Human Resources
72	PetroVend	Fuel management	I	N/A
73	Police Server	MSCO safety	C	Human Resources
74	PPS	State system used for Disability Services	M	N/A
75	Practice Master	Case management	M	N/A
76	Primavera	Project management	I	N/A
77	Pro Phoenix	Purchased to transfer from police server, officers used for filling out reports; MSCO Safety - jail management	I	N/A
78	PROTECT	Case management	M	N/A
79	QuickBooks	AR/Billing tool for multiple depts. invoices for MSOA safety; golf activities for parks & rec	R	Accounts Receivable
80	Real Estate Assessment Center	Real estate	I	N/A
81	Reuters	Used for death searches	M	N/A
82	Sage	Financials	M	N/A

#	Current ERP Application	Application Notes-Description	Likely Future?	Expected ERP Module
83	ScheduleSoft	Scheduling (zoo uses different version that HOC)	R	Time and Attendance
84	SCRIPTS	Disability Services- Mainframe for Third Party Administrator (TPA)	R	Human Resources
85	Service Point	HUD Reporting software with case management and homeless database	I	N/A
86	SharePoint	Goal setting for depts., succession and performance planning DA- Computer equipment purchases, fixed assets document management	I	N/A
87	SVRS	Voter registration and election results	M	N/A
88	Synthesis	Service scheduling/case management system	I	N/A
89	TABS	Billing County Insurance	R	Accounts Receivable
90	Text File	Text file sent to Aon/Buck	M	N/A
91	Titan	Managing county's website	M	N/A
92	US Bank	Treasury management	I	N/A
93	Vastech	Scheduling	R	Time and Attendance
94	Vendor portals	Benefits, UHC, optum, web-based (no direct interface)	R	Human Resources
95	VFA	Budget planning, facilities database, assist developing capital plan, deferred maintenance	R	Budgeting
96	Vitech Pension	Benefits, pension system, Would like to relocate into same system as H&W, retirement, contributions, service credits, demographic information	M	N/A
97	Vitech Benefits	Would like to relocate into same system as H&W, but still interface with the Vitech Retirement side, including contributions, service credit data, demographic information, etc	R	Human Resources
98	WIT	Tracking system for disability services	M	N/A
99	Yardi	Rental property management	M	N/A
100	Fiddler Technologies	Cashiering and indexing of real-estate documents. No interface between Fiddler and Advantage	I	N/A

6.4 APPENDIX D: PAYROLL PROCESS MAP



{Thank You!}

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