

1. General Description of the Project/Program being Submitted

The City of Virginia Beach (CVB) initiated the Energy Accounting and Management Project to meet our combined goals of 1) reducing energy costs, and 2) streamlining the high volume of energy vendor payments. In envisioning this project, CVB identified that:

- Energy monitoring, targeting and reporting are critical to long-term energy management
- Electronic Data Interchange (EDI) capabilities can eliminate paper bill processing and automate payments

We began using this system in September 2012. In our first year of operation, we will receive over 2,000 invoices from our top energy vendor (with usage valued at \$15.5 million) through EDI. All will be approved by the using departments and automatically processed through to electronic ACH bank payments. There will be no paper invoices, no mailing costs between departments, no data entry of invoice information into the financial system, and no checks issued or mailed. All information on energy usage/fees, energy schedules, peak usage, and malfunctions is now being tracked within the energy software to provide the CVB with information to help monitor and control energy consumption.

Additional energy vendors who now submit paper invoices will begin submitting electronic invoices to CVB as the program continues to develop. Paper invoices from vendors who are not ready for EDI (2,000 invoices annually valued at over \$1 million) are being keyed by user departments and information is transferred to the energy system for tracking and the financial system for payment processing. Double entry (energy software, other spreadsheet systems, and financial systems) has been eliminated.

The EDI contract that we negotiated as part of this program, established a turnkey solution for processing EDI not only for all city utility vendors, but for any other future electronic transfers to target systems. This contract is available for use by ALL Virginia localities.

Virginia Beach is the first municipality in Virginia that has implemented the single entry electronic vendor invoice to payment process for this top energy vendor. Part of the uniqueness of our system is a nightly automation process that audits both automated and manually keyed invoices for financial accuracy and completeness.

Management Reports from the energy application allow departments to focus on overdue, missing, overlapping and exception bills. Finance has shifted from a data entry focus to reviewing expense data and payment trends.

2. Local Events and/or Problems

In 2008, in response to the increasing costs of energy, CVB established a **Joint Energy Committee** of public and private sector members that identified key energy issues and goals for the City. The primary goal was reducing current municipal government energy consumption. The committee understood that monitoring energy usage, analyzing historical energy performance, controlling current performance, and projecting future energy budgets based on *actual* expenditures were critical to achieving this goal. Our hope was that we could create a system that would track energy data and use this data to implement methods to conserve energy costs for CVB.

In FY 2010, CVB spent almost \$20 million in energy and utility payments (electric, natural gas and propane) with electric expenses being the highest expenditure. Outside of debt payments, retirement,

and payroll costs, electricity was CVB's top expense at over \$15.5 million annually. Current year costs are over \$22 million for CVB's approximate 3 million square feet of building space. CVB has been an **Energy Star** partner since April 2011 and has initiated a number of new capital building design projects that have LEED Silver or Gold Green Building ratings. The value of this new program is the energy reports that are generated to help identify and reduce energy usage. Virginia Beach strives towards a more sustainable government by creating accountability for energy use.

CVB's Financial Expected Outcomes as a result of using an Energy Accounting and Management System were:

- Improve internal control processes; reduce duplication
- Eliminate data entry and data entry errors with invoices and payments that would help reduce fees from late or incorrect payments
- Eliminate review/approval of individual utility bills and focus on bill exceptions or abnormalities
- Eliminate the need for paper recordkeeping, and streamline records management of high volumes of invoices
- Reduce the number of steps and transportation delays caused by paper processes

3. Describe the role the finance office played in this project.

The Finance Office played a critical role in this project. Specifically, the Finance Office:

- Developed the needed system control requirements and process controls as part of the system design, procedures and training
- Led the use of how the general ledger accounts and financial fields were to be used in the energy software
- Led discussions and identified requirements for records management
- Led the design of financial reports
- Assisted with testing and acceptance of electronic invoice transfer and payment process

4. How much time did each participant devote to project? Were outside consultants engaged?

Each of the participant leads spent about six months on the project. Tasks included developing the project plan, developing the business and project specifications, working with the vendors, system testing, training and implementation.

- The Energy Manager was responsible for the project from initiation through implementation.
- The procurement buyer was responsible for negotiating the EDI and the energy software procurements.
- The IT staff was responsible for project management, analysis, developing interface specifications, developing the interface to the financial application, and network and software deployment.
- The Finance Department staff and Finance AP processing staff were responsible for user acceptance testing during the final phases of the project.
- The EDI Vendor and the Energy Vendor Software Lead were responsible for implementing and customizing the software to meet the specifications of CVB. For the Energy Vendor Software Lead, this task took approximately 6 months of full-time activity.

Energy Manager – Lead

IT Project Lead/Analyst (Outside Consultant) \$72,739

Procurement Buyer
IT Staff
Energy Vendor Software Lead (Outside Vendor)
EDI Vendor Lead (Outside Vendor)
Department Invoice Processing
Finance Lead
Finance Accounts Payable Payment Processing

Technical Significance

A major part of this project was the incorporation of financial and business control requirements in the initial phases of the project. This was vital because we had to ensure that business processes and energy systems were appropriately designed to promote accurate payments, validate our data, and reduce any likelihood of fraud, abuse or misuse. We developed standard control requirements for invoice and payment processes.

Another benefit was the development of a single EDI contract that could service multiple EDI transmission purposes. So often in municipal government, departments with varied customer and business purposes look at a smaller piece of the pie. With this EDI contract, multiple software applications can have data transmitted through to the financial application by using the same EDI vendor's services. This streamlines the development process, standardizes the coding used and simplifies the accounts payable invoice process. Our financial staff is not spending valuable time testing and reviewing different variations of the same interface just because the source software is different.

There are obvious record storage benefits of electronic approvals of payments and promotion of non-paper processes. This project also helps CVB shift focus from the time-consuming task of processing payments for high volume energy vendors to important issues such as skipped bills, missing bills, and reduction of incorrect charges and past due penalties. Our focus is not simply processing data, but using the data to work smarter and achieve better results.

Having the ability to use the historical energy data is helping departments better manage their costs and analyze trends and exceptions for types of energy costs. CVB departments have an increased awareness of energy usage because of their ability to generate charts, graphs and reports on individual or summary data. Where invoices were being processed by administrative staff as a routine process, invoice data is now being analyzed by cost center managers who can develop controls and address needs for energy savings. Technology is being used to minimize the focus on 'back room' operations, while expanding the focus on active management of energy costs.

Documentation

Energy Vendor Software <http://www.energycap.com/products>
Energy Vendor Sample Reports <http://www.energycap.com/support/sample-report-viewer>
EDI Vendor <http://www.xebecdata.com/about/management.htm>
City of Virginia Beach Energy Page
<http://www.vbgov.com/government/offices/green/energy/Pages/default.aspx>

See attached: IT Project Plan
Finance Department Control Requirements for Implementation
Department Invoice Control Requirements
High Level Process Diagram

Energy Initial AP Process Flow
Press Release
Sample Invoice Transfer Report

Cost/Benefit

The project cost \$177,443 to implement, with approximately 60% of those costs going towards vendor software license fees, vendor hosting fees and vendor implementation costs. The remainders of costs were for CVB IT project management, analysis and implementation. These costs were about 0.7% of CVB's annual energy expense. The City of Virginia Beach was able to acquire a Department of Energy ARRA grant to cover the costs of the energy software vendor portion.

Benefits: **Elimination of department staff entering information into an energy system and then manually preparing invoices for payments:** We have eliminated approximately 2,000 annual invoices from manual data entry to-date, with additional invoice data entry elimination planned. Our approximate monthly savings in time equals 150 hours of department data entry. Processing manually received invoices from Receipt to Vendor Payment takes an average of 10 working days to process. Paper payment requests travel to multiple locations for approvals and processing. With this application, the average invoice receipt to vendor payment process was reduced to 5 days.

Data compiled in the application is available to management for review: Both invoice and energy data are now available. Increasing the level of access and accessibility to information has increased management's interest in resolving energy issues more quickly. This sustainable government effort has placed the data in the hands of the managers. Reports and energy tools result in more accountability, faster data access, and heightened awareness of energy usage.

Approximately 5-7 record storage boxes have been eliminated from physical record storage. This is an estimate of the official accounts payable records. Shadow systems and duplicate records in various departments that were used to keep track of energy costs have also been eliminated. With a shared energy enterprise solution, the City is able to reduce records duplication, standardize procedures and capitalize on shared knowledge.

There has been a reduction in incorrect payment accounts or amounts: GL account codes are associated with the meter, department and invoice account within the energy software, so there are no keying errors or charges to incorrect accounts. All credits are passed from the vendor as well, so credits are always correctly applied and current. Along with that, the system tracks missing bills, overdue bills, and skipped bills so CVB has been able to prevent late fees due to mail delays or losses. Validating bills and department authorization for payments are done through the energy software. The potential for fraud and mistakes is reduced considerably by system functions including:

- Separating data entry responsibilities from approver responsibilities, limiting access to invoice processing to approved, trained staff (separation of duties and limits)
- Ensuring correct Fiscal Year posting
- Ensuring duplicate invoices can't be processed
- Ensuring correct GL Account posting

- Generating reports on unusual account activity, due dates
- Maintaining control over vendor payment in the financial system
- Ensuring that invoice data received from EDI is not changed/modified, as each role in the application controls separation of duties and limits abilities to both enter and approve invoices, or process duplicate invoices

Energy Audits also provide:

- Energy Analysis Reports
- Cost Avoidance Reports
- Cost Analysis Reports (Tax, Schedule, Fee comparisons)
- Budgeting Reports
- Billing Reports
- Year-to-Year Analysis and Trending Reports
- EnergyStar Compliance

New Opportunities for Cost Savings

As a result of this implementation, long standing billing problems have been resolved. Inactive accounts and unused meters are being terminated, and data is being used to research the highest priority need for city building energy retrofits.

Complexity

The data migration and process development of this project was very detailed. Stakeholders worked with IT to ensure that both billing and energy usage elements were migrated from utilities in a way that both the energy system and payables system would be able to immediately use the data with little additional manipulation. Developing a detailed understanding of business and system process flows for the cross-functional team and the vendor was critical to the successful design and implementation. Although many municipalities have implemented the energy data portion, Virginia Beach is the first municipality in Virginia that has implemented the single entry electronic vendor invoice to payment process for this top energy vendor.

Users of the energy program require a minimum amount of training (half day or less) for invoice and payment processing. Cost managers have access to an internet based reporting system that allows them to generate cost or energy reports without any formal training.

The software vendor has provided a comprehensive training manual by role, and City staff provides one-on-one assistance when needed. Currently, one full-time equivalent position spends 50% of their time bringing departments on-line with the application, providing city-wide reporting to senior management and maintaining accurate account data within the program.

Originality, Creativity and Innovation

As with any municipality, there are many diverse talents spread across many departments. The key to the success of this project for CVB was to coordinate a cross-departmental project throughout the City. This required innovative and original ideas for this project, preparing and procuring the grant, garnering support from the many City leaders and researching available energy management products. We used a number of creative techniques to build a cohesive project team, and our goal was to of automating what had become an entrenched, manual process in almost every City department. The project employed subject matter experts across the City to provide key information needed to make this a success. Using

dashboard metrics and reports for management review and action provides the true testament to the project's innovative nature.

Other Distinguishing Features

CVB also contracted with an external audit firm to perform an energy audit on energy vendor payments. This helped us ensure that all past payments and credits were appropriate and accurate. Having the correct account and payment schedule information loaded into the energy software while correcting prior discrepancies helped us reduce potential errors in the new process and system.

As part of the process to reduce energy consumption and to streamline processes, the City adopted two policies – 1) Green Building Criteria for New City Buildings and 2) No Idling (Vehicles).

The City also adopted a special tax rate for qualified residential and commercial energy efficient buildings.

Virginia Beach is an **Energy Star** partner, and has eight (8) **Energy Star** certified buildings.