



PROGRESS REPORT ON SELECTED SYSTEM DEVELOPMENT PROJECTS IN THE COMMONWEALTH

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Auditor of Public Accounts
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REPORT SUMMARY

This report reflects our on-going review of \$204 million in Commonwealth information technology (IT) systems development projects. Our review goal is to detect problems at the earliest possible point and alert decision makers of this information, thereby reducing potential project failures. We have chosen to highlight five projects across four different agencies in this report because they are experiencing schedule delays, budget concerns, or have other risks:

- Virginia Employment Commission Unemployment Insurance Modernization
- Department of Human Resource Management PMIS Migration from Unisys
- Alcoholic Beverage Control Financial System Replacement and Licensing System Replacement
- Department of Accounts Cardinal Payroll Project

For each of these highlighted projects, agency management is aware of the delays or concerns and the project team has been operating transparently to keep stakeholders aware of all associated risks. The project teams continue to inform us of decisions that affect these projects, invite us to attend project team meetings, and properly report the project's status to the Virginia Information Technologies Agency.

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HIGHLIGHTS OF SELECTED SYSTEMS DEVELOPMENT PROJECTS

Unemployment Insurance Modernization

Virginia Employment Commission

The Virginia Employment Commission (Commission) is continuing to develop the Unemployment Insurance Modernization project (UI Mod), which will replace multiple existing mainframe-based software systems with a web-based platform and reengineer the Commission's business processes. The UI Mod project began in 2009 with the anticipated completion in 2013 and an overall budget of \$58.5 million. The Commission currently estimates the final phase will go-live in January 2019 with an overall budget of \$68.2 million.

The UI Mod project consists of three main phases:

- Imaging and Workflow, implemented in December 2011
- Tax, implemented in November 2015
- Benefits, in development with estimated completion of January 2019

The Commission and HCLA, the UI Mod project vendor, originally scheduled the Tax and Benefits phases of the project to go into production in December 2012 and May 2013, respectively. However, the project team did not achieve these dates, which resulted in multiple extensions. The Commission completed the second phase of the UI Mod project, Tax, in November 2015, leaving the final phase, Benefits, remaining. The project team has tentatively scheduled Benefits for a January 2019 implementation.

Although the Commission and HCLA have continued to work together to establish the current plan for the completion of the UI Mod Benefits phase, the tentative implementation schedule has been awaiting final approval from HCLA for over a month. The excessive time to approve the final project plan, as well as the excessive time to complete the overall project, adds additional risk to the project. As time extends, technological demands change, legislative mandates change, and agency needs change; therefore, increasing the risk of a successful implementation. However, the Commission remains committed and engaged.

PMIS Migration from UNISYS

Department of Human Resource Management

The Department of Human Resource Management (DHRM) is nearing the end of its project to migrate the Personnel Management Information System (PMIS), Benefits Eligibility System (BES) and other related subsystems off the Commonwealth's Unisys mainframe platform and onto a web-based environment. The project will not deliver any new functionality since its main objective is to create the same systems in a new environment.

All agencies in the Commonwealth have migrated their systems off the Unisys mainframe platform, leaving DHRM to bear all its operating costs. The increased costs of operating the mainframe, along with obsolete technologies used in applications built on Unisys, were the driving forces behind this project. In addition, there is a dwindling pool of support resources for the outdated Unisys technology and without readily available support, a system failure becomes a greater risk to DHRM.

The project started in January of 2015 at a planned budget of \$6,150,650 and DHRM expected the new system to go-live on June 30, 2016. Although the project remains in line with the initial budget, DHRM did not complete the project by the deadline due to various issues with the vendor and additional migration work necessary for legislative requirements and mandates. The additional work and issues encountered during the project added eight months to the schedule resulting in a revised planned go-live date of February 27, 2017. The system went live at the end of February 2017, but the project team encountered expected system performance issues and remains highly engaged as they work to correct them.

Financial System Replacement and Licensing System Replacement

Alcoholic Beverage Control

Chapter 665 of the 2015 Acts of Assembly established an Alcoholic Beverage Control (ABC) Advisory Committee, comprised of external officials, to review ABC's progress in planning, financing, procuring, and implementing information technology (IT) systems necessary to sustain the department's business enterprise. The committee has met three times since it initially convened in September 2015 and has received briefings from ABC management regarding the status of its major modernization initiatives.

At the most recent committee meeting held in June 2016, ABC presented information about six IT initiatives with budgets totaling \$24.7 million. The two largest initiatives, comprising an estimated \$18.2 million of the \$24.7 million, involves a financial system and a licensing system, both of which are part of our review and this report.

Financial System Replacement

At its June 2016 Advisory Committee meeting, ABC reported that it had recently cancelled a Request for Proposal (RFP) to replace its existing legacy financial system. This cancellation followed observations by ABC's management that the RFP's language was too restrictive and may not result in a system that was the best fit for ABC. Revising and broadening the requirements would allow ABC to adopt a broader Enterprise Resource Planning (ERP) strategy, of which the financial system would be one component. This strategy could allow the system to grow to accommodate future modernization areas, such as inventory and human resources. ABC and Gartner have been working collaboratively to re-write the system requirements to communicate this broader vision and ABC management plans to update the Advisory Committee on its status soon after the 2017 General Assembly session.

Although the RFP cancellation has delayed this project, doing so should provide greater competition and allow ABC to select a software solution that they can adapt to facilitate other business processes and integrate with existing systems.

Licensing System Replacement

At its June 2016 Advisory Committee meeting, ABC reported its intention to cancel its RFP for a licensing system because it limited the solution to one that the Virginia Information Technologies Agency (VITA) would host at its data center. After issuing the RFP, ABC learned that VITA was open to allowing vendor-hosted solutions as an alternative, known as Software as a Service (SaaS), and ABC believed canceling and reissuing a less restrictive RFP would improve competition and offer more choices. ABC officially cancelled the RFP in July 2016 and issued a revised RFP in early-August 2016. The revised RFP closed in late-August 2016 and ABC has since reviewed vendor responses, held software demos, and are currently in negotiations with the preferred vendors. ABC plans to hold an Advisory Committee meeting soon after the 2017 General Assembly session where management will provide a full briefing on the status of this project.

Cardinal Payroll Project

Department of Accounts

In August 2016, the Cardinal team launched the Cardinal Payroll project, which will result in the replacement of the Commonwealth's Integrated Personnel and Payroll System (CIPPS). The Commonwealth implemented CIPPS in 1986, and currently 200 state agencies use the system for payroll and/or leave tracking purposes. The Cardinal team has scheduled to complete implementation of the Cardinal Payroll project during 2018, and this timeline is critical because vendor software support for CIPPS will end as of May 31, 2018. The Cardinal team will deploy the Cardinal Payroll project in two releases. The first release is set for April 2018 and will include 25 percent of state employees. The second release is scheduled for October 2018 and will include the remaining state employees. Upon completion of the second release, CIPPS will be fully decommissioned.

The Cardinal team has estimated a total cost of \$42 million to implement the Cardinal Payroll project. The project scope includes implementation of the following modules: payroll, time and labor, absence management, and limited human resource functions. In addition, the project scope includes integration with the Cardinal Financials system. The Cardinal Payroll project should reduce risks associated with an aging payroll system and meet the majority of the Commonwealth's payroll requirements. Further, by integrating the Payroll and Financial modules, the Commonwealth will have a variety of new reporting capabilities.

As with all projects, the Cardinal team will face risks during the Payroll system implementation. For example, due to the impending cease of vendor support for CIPPS, the Cardinal Payroll project has a restrictive implementation timeline. In addition, although the Cardinal team is

familiar with the underlying software product, PeopleSoft, their experience has been limited to financial modules; therefore, the new payroll subject matter inherently poses additional risks.

There are also external risks to the Cardinal Payroll project, such as the need for all current CIPPS agencies to remain engaged and adhere to the existing timeline so the project can achieve the planned schedule. All current CIPPS user agencies, as well as the Cardinal team, will need to continue to devote key personnel and technology resources to mitigate the risks associated with the aggressive implementation timeframe. An additional external risk involves the timeliness of the Cardinal Financials upgrade. The Cardinal Payroll project is dependent upon the successful and timely upgrade to the financial system. Therefore, if the Cardinal team does not complete the Financials upgrade on time, it could negatively affect the Cardinal Payroll schedule.

OVERVIEW OF OUR REVIEW PROCEDURES

Objectives and Scope

The Auditor of Public Accounts (APA) audits a number of IT development projects across the Commonwealth, and Appendix A has our on-going summary of these projects. Our audit objectives are to determine if:

- the project manager complies with the Commonwealth's Project Management Standards, as issued by the Virginia Information Technologies Agency (VITA); or, if the agency is exempt from VITA requirements, that the project manager complies with project management best practices; and
- the project remains on time, within budget, and on scope.

Methodology

We continuously monitor various resources when identifying potential systems development projects, including legislative meetings, the Appropriation Act and Budget Bill, agency management and systems professionals, VITA's Project Management Division, and other sources. Once we identify a potential systems development project, we maintain a record of that system as it progresses through its development lifecycle.

The volume of ongoing projects dictates that we identify and follow only those that represent the most risk to the Commonwealth. To determine which projects to follow, we create a list of all potential projects from the sources listed above and meet to discuss each project. During that discussion, we consider things like project cost and complexity, the agency's success with similar projects, the project team's experience, and the underlying technology.

Our reviews generally include examining documents such as the project charter, project planning documents, and risk mitigation strategies. We regularly attend project meetings to note any issues affecting the project and meet with project managers to offer suggestions and recommendations based on our experience monitoring system implementations throughout the Commonwealth.

Our goal is to detect problems at the earliest possible point and alert decision makers to this information, thereby reducing project failures as well as costs. During our review process, we also gain an understanding of the system and its controls that will allow us to plan future audit work involving the system. Earlier releases of this report contain a detailed explanation of our review process, which we have not included with this report, and can be found at <http://www.apa.virginia.gov/reports/InfoTechProjects07.pdf>.

Effective July 1, 2009, Section 2.2-1509.3 of the Code of Virginia began requiring the Budget Bill to include appropriations for major information technology projects. In 2015, that requirement

was modified by Acts of Appropriation, Chapter 665, Item 424 D.2. whereby VITA's Quarterly IT Project Status Report (Quarterly Report) would be used to satisfy the Code of Virginia requirements. As part of our regular review process, we reconcile projects in the Quarterly Report to information we have collected regarding current and anticipated projects. If we identify discrepancies, such as projects not in the Quarterly Report but on our list of anticipated projects, we inquire with VITA and the proponent agency to identify why the discrepancy exists.

Results

During the year, we report the results of our project reviews in different ways, depending on the circumstances. Often we include project background and status information within the annual audit report of the agency. However, if there is a legislative request that we review a system, we will prepare a written report specifically addressing that request. Finally, if we identify serious project management concerns, which the agency has not resolved in a timely manner, we immediately notify the agency head and consider issuing a report detailing the concerns and our recommended corrective action.

The purpose of this report is to provide a progress report of the projects we are currently following and any recommendations we have to improve project management practices. Specifically, this report highlights the following systems development projects.

- Unemployment Insurance Modernization
Virginia Employment Commission
- PMIS Migration from UNISYS
Department of Human Resource Management
- Financial System Replacement and Licensing System Replacement
Alcoholic Beverage Control
- Cardinal Payroll Project
Department of Accounts

Appendix A contains a background and history of all the projects we are currently following. All agencies with a project included in this report have verified the accuracy of information included in this report. However, since there were no new findings presented in this report, we did not conduct a formal exit conference or receive an agency response. The reader can find previously released reports by searching a specific agency name on the Auditor of Public Accounts' website at www.apa.virginia.gov.

COMPREHENSIVE LIST OF SYSTEMS DEVELOPMENT PROJECTS CURRENTLY UNDER REVIEW

The systems development projects listed below are those projects we are actively monitoring. While this list is not inclusive of all current projects across the Commonwealth, it does represent those projects that we consider of the highest importance due to risk, budget, and/or impact of the system. We discuss emerging project issues within a project's grid and summary below.

Table 1

| Agency | System Name | System Budget | Page |
|----------------------------|---|-----------------------|------|
| Accounts | Cardinal Payroll Project | \$ 42,500,000 | 8 |
| Accounts | Cardinal Upgrade | 15,000,000 | 9 |
| Alcoholic Beverage Control | Financial System Replacement | 13,000,000 | 10 |
| Alcoholic Beverage Control | Licensing System Replacement | 3,200,000 | 11 |
| Board of Accountancy | Licensing System | 1,300,000 | 12 |
| Corrections | Electronic Healthcare Records | 5,300,000 | 13 |
| Employment Commission | Unemployment Insurance Modernization | 68,239,692 | 14 |
| General Services | COVA Trax | 3,996,051 | 15 |
| Human Resource Management | PMIS Migration from Unisys | 6,150,650 | 16 |
| Virginia IT Agency | Telecommunications Expense & Billing System | 3,689,610 | 17 |
| Retirement System | Modernization | 22,215,579 | 18 |
| State Police | Central Criminal History Application | 7,366,051 | 19 |
| Transportation | Highway Maintenance Management System | 11,672,143 | 20 |
| Total Budget | | \$ 203,629,776 | |

Sponsoring agency and actual cost information detailed in the charts below are as of December 31, 2016. In addition, we have not repeated all projects reported in our December 2015 progress report on the following pages because some of the projects may have ended or we may have reprioritized them as lower risk. The reader can find historical information on these and other projects in our previous progress reports available at www.apa.virginia.gov.

Cardinal Payroll Project

The Cardinal team, with oversight by the Department of Accounts, launched the Cardinal Payroll project in August 2016, which will result in the replacement of the Commonwealth's Integrated Personnel and Payroll System (CIPPS). The Commonwealth implemented CIPPS in 1986, it runs on an IBM mainframe, and is written in COBOL (Common Business Oriented Language). Currently 200 state agencies use the CIPPS for payroll and/or leave tracking purposes.

The Cardinal team has scheduled to complete implementation of the Cardinal Payroll project during 2018, as vendor software support for CIPPS will end as of May 31, 2018. The Cardinal team will deploy the Cardinal Payroll project in two releases. The first release is planned for April 2018 and will include 25 percent of state employees. The second release is scheduled for October 2018 and will include the remaining state employees. Upon completion of the second release, CIPPS will be fully decommissioned.

Table 2

| | |
|---|---|
| Project Sponsor | David Von Moll, State Comptroller Randy McCabe, Deputy State Comptroller |
| Project Manager | Edmond O'Neill Stacy McCracken |
| Current Phase of Development | Execution and Control |
| Project Timeline | <ul style="list-style-type: none"> • Planning and Analysis September 2016 • Design February 2017 • Construction July 2017 • Release 1: System Test January 2018 • User Test Execution March 2018 • Release 1: Training Deployment April 2018 • Release 1: Go-Live April 2018 • Project Close-Out April 2018 • Release 2 System Test, Training, Go-Live .. August - November 2018 |
| Total Budget | \$42,500,000 |
| Funding | Working Capital Advance to be repaid with Internal Service Fees |
| Actual Costs as of December 31, 2016 | \$2,722,693 |
| Outside Contractor(s) | <ul style="list-style-type: none"> • Integration Services: Accenture • Software: Oracle • IV&V: Impact Makers, Inc. |
| Additional Information | Payroll has a major dependency on the Cardinal Upgrade project. Also, the section above entitled "Highlights of Selected Systems Development Projects" contains additional information on this project. |
| Prior APA Report and Issue Date | Secretary of Finance Report on Audit dated January 27, 2017 http://www.apa.virginia.gov/reports/SecOfFinance2016.pdf |

Cardinal Upgrade

The Department of Accounts Cardinal upgrade project will result in a technical upgrade to Oracle's PeopleSoft Enterprise Resource Planning System, its toolset, database, operating system and hardware that supports Virginia's statewide accounting system. This complete refresh will not add any functionality or business processes to Cardinal, but will ensure Virginia continues to operate and use the most current version of PeopleSoft and will provide an updated platform to support the Cardinal Payroll system currently in development.

Table 3

| | |
|---|--|
| Project Sponsor | David Von Moll, State Comptroller |
| Project Manager | Edmond O'Neill |
| Current Phase of Development | Execution and Control |
| Project Timeline | <ul style="list-style-type: none"> • Planning and Preparation April 2016 • Move to Production 1 August 2016 • Move to Production 2 September 2016 • Construction November 2016 • Move to Production 3 (Dry Run) December 2016 • Move to Production 4 (Dress Rehearsal) February 2017 • System Test February 2017 • Go-Live March 2017 • Training Deployment March 2017 • Project Close-Out June 2017 |
| Total Budget | \$15,000,000 |
| Funding | Working Capital Advance to be repaid with Internal Service Fees |
| Actual Costs as of December 31, 2016 | \$8,227,558 |
| Outside Contractor(s) | <ul style="list-style-type: none"> • Integration Services: Accenture • Software: Oracle • IV&V: Impact Makers, Inc. |

Financial System Replacement

Alcoholic Beverage Control (ABC) is seeking a solution to modernize its legacy financial management system, known as Performance. Performance processes and maintains ABC's financial accounting and fiscal functions, is approximately 20 years old, and operates on an unsupported Oracle 10g platform. ABC plans to issue a Request for Proposal (RFP) with its requirements in the near future and hopes to select a solution as a result.

Chapter 665 of the 2015 Acts of Assembly established an Advisory Committee to review ABC's progress in planning, financing, procuring, and implementing information systems necessary to sustain ABC's business enterprise. The Auditor of Public Accounts serves as a member of this committee.

Table 4

| | |
|---|---|
| Project Sponsor | Secretary of Public Safety and Homeland Security |
| Project Manager | To be determined |
| Current Phase of Development | Preliminary Planning |
| Project Timeline | To be determined |
| Total Budget | To be determined, but early estimate around \$13 - \$15 million |
| Funding | Enterprise Funds |
| Actual Costs as of December 31, 2016 | \$0 |
| Outside Contractor(s) | Gartner assisting with system requirements |
| Additional Information | The section above entitled "Highlights of Selected Systems Development Projects" contains additional information on this project. |

Licensing System Replacement

Alcoholic and Beverage Control's (ABC) Licensing and Compliance System will replace several legacy systems with a modern means to store and maintain all information related to ABC licensee applications, records and compliance. ABC originally planned to start the project in 2013; however, the project is still in its early phase. The delays occurred because ABC decided to cancel and re-issue a Request for Proposal (RFP) upon learning that the Virginia Information Technologies Agency (VITA) would allow them to open the procurement to Software as a Services (SAAS) vendors. ABC is currently in negotiations with vendors and hopes to issue a contract shortly.

Table 5

| | |
|---|---|
| Project Sponsor | Tom Kirby, ABC Bureau of Law Enforcement Frank Monahan, ABC Bureau of Law Enforcement |
| Project Manager | Jesse Austin Shannon Shubert |
| Current Phase of Development | Procurement |
| Project Timeline | To be determined |
| Total Budget | \$3,200,000 preliminary estimate |
| Funding | Enterprise Funds |
| Actual Costs as of December 31, 2016 | \$0 |
| Outside Contractor(s) | To be determined |
| Additional Information | The section above entitled "Highlights of Selected Systems Development Projects" contains additional information on this project. |

Licensing System

The Virginia Board of Accountancy (VBOA) plans to replace its current licensing system/database. The project is still in the Request for Proposal (RFP) process and VBOA has not awarded a contract as of December 31, 2016. Indirect costs at 2016 year-end were \$80,000 from a contract with Computer Aid, Inc. for development of RFP requirements, development of the RFP document, and assistance with negotiation and award.

Table 6

| | |
|---|--|
| Project Sponsor | Wade Jewell, Executive Director |
| Project Manager | Chantal Scifres |
| Current Phase of Development | Initiation |
| Project Timeline | To be determined |
| Total Budget | Request For Proposal (RFP) still in process. Project Manager estimates that it will be approximately \$1.3 million, including five years of maintenance/hosting costs. |
| Funding | Dedicated Special Revenue |
| Actual Costs as of December 31, 2016 | Indirect costs of \$80,000 for RFP purposes |
| Outside Contractor(s) | Computer Aid, Inc. - RFP purposes |
| Additional Information | VBOA is currently working with VITA's Enterprise Cloud Oversight Services Division (ECOS) prior to advancing this project. |

Electronic Healthcare Records

Virginia Department of Corrections (Corrections) is obtaining and implementing a Commercial-off-the-Shelf (COTS) Electronic Health Records solution to manage offender personal health information. The Electronic Health Records solution will interface with Corrections' current offender management systems called VirginiaCORIS and replace the current paper environment with an integrated and automated health record process. Corrections will implement this solution throughout its six women's facilities including:

- Virginia Correctional Center for Women
- Fluvanna Correctional Center
- Deerfield Correctional Center
- Brunswick Correctional Center
- Central Virginia Unit 13
- Chesterfield Detention and Diversion

Table 7

| | |
|---|---|
| Project Sponsor | Dr. Steve Herrick, Director-Office of Health Services Rick Davis, CIO |
| Project Manager | Kimberly Moore |
| Current Phase of Development | Planning |
| Project Timeline | <ul style="list-style-type: none"> • Project Initiation Approval February 2017 • Detailed Planning April 2017 • Configuration and Development October 2017 • Consolidated System Testing December 2017 • User Acceptance Testing December 2017 • Go-Live at Women's Facilities June 2018 • Project Close-Out June 2018 |
| Total Budget | \$5,300,000 |
| Funding | General Fund |
| Actual Costs as of December 31, 2016 | \$0 |
| Outside Contractor(s) | To be determined |

Unemployment Insurance Modernization

The Virginia Employment Commission (Employment Commission) is developing a modern unemployment insurance system, the Unemployment Insurance Modernization Project (UI Mod). UI Mod reengineers business processes to provide expanded customer service, increases efficiency for Employment Commission staff, responds faster to legislative changes, meets all United States Department of Labor reporting requirements, and improves system stability and reliability.

UI Mod is replacing systems that are 25 to 35 years old and impose risks and limitations to the Employment Commission's ability to administer the UI program adequately. In December 2011, the Employment Commission successfully implemented the Imaging and Workflow (IWF) component of the UI Mod project and scheduled the remaining phases, Tax and Benefits, to go live in December 2012 and May 2013. The project team subsequently required multiple extensions and the Tax phase did not go live until November 2015. The Employment Commission has currently scheduled the Benefits phase to go live by January 2019.

The original project budget of \$58.5 million was composed of \$49.1 million from the UI Trust Fund under provisions of the Reed Act, and the remaining \$9.4 million from the Employment Commission's penalty and interest funding. Additional funds were required during fiscal year 2016, increasing the budget to \$68.2 million.

Table 8

| | |
|---|---|
| Project Sponsor | William Walton, Unemployment Insurance Director |
| Project Manager | Theresa Anderson |
| Current Phase of Development | Execution and Control |
| Project Timeline | <ul style="list-style-type: none"> • IT Investment Board Approval September 2009 • Vendor Selection and Contract Negotiation..... January 2010 • Project Execution Begins November 2010 • UI Imaging and Workflow System Complete December 2011 • UI Tax System Complete November 2015 • UI Benefit System Complete/Project Close-Out... January 2019 |
| Total Budget | \$68,239,692 |
| Funding | Approximately 70 percent Federal Funds, 30 percent Special Revenue Funds |
| Actual Costs as of December 31, 2016 | \$49,198,300 |
| Outside Contractor(s) | <ul style="list-style-type: none"> • Primary Development Vendor: HCL America Inc. • IV&V Service Provider: Impact Makers Inc. |
| Additional Information | The section above entitled “Highlights of Selected Systems Development Projects” contains additional information on this project. |
| Prior APA Report and Issue Date | Progress Report on Selected System Development Projects, dated May 2016 http://www.apa.virginia.gov/reports/ITProjectManagementProgress2016-web.pdf |

COVA Trax

The Department of General Services Division of Real Estate Services (DRES) started a project in 2014 to replace its legacy Integrated Real Estate Management System (IREMS), which the vendor no longer supports due to the vendor's business dissolution. The new system, known as COVA Trax, provides a lease and transaction module that will replace the functionality of IREMS. Our 2016 audit of DRES, located at www.apa.virginia.gov, reported:

- no evidence that General Services validated current and future lease payment information converted from IREMS into COVA Trax; and
- no evidence that General Services formally reviewed and evaluated the Service Organization Control (SOC) report provided by the COVA Trax third-party services provider.

During project planning, it was determined that COVA Trax also contained functionality that could also replace the Department of Accounts (DOA) Fixed Asset Accounting and Control System and the Department of Treasury's (Treasury's) Virginia Agency Property System. DRES subsequently expanded the project's scope to include a second phase to implement a fixed asset module with input from both Treasury and DOA.

Although DOA and Treasury lack the resources to implement Phase 2 statewide at this time, DRES will use the Phase 2 functionality as an internal system and make it available for DOA and Treasury to implement at a future date if they so desire. Should DOA and Treasury decide to use the COVA Trax system, additional project planning will be required to ensure that it meets all of the Commonwealth's needs for a statewide system.

Table 9

| | |
|---|--|
| Project Sponsor | Holly Eve, Director of DRES |
| Project Manager | Chuck Ludwig |
| Current Phase of Development | Planning phase 2 of the project |
| Project Timeline | <ul style="list-style-type: none"> • Project Initiation Approval December 2014 • Detailed Project Planning January 2015 • Plan and Design Phase 1 (Lease and Transaction) April 2015 • Build and Test Phase 1 (Lease and Transaction).... June 2015 • Phase 1 Go-Live July 2016 • Plan and Design Phase 2 (Fixed Assets) July 2016 • Build and Test Phase 2 (Fixed Assets) December 2016 • Phase 2 Go-Live December 2017 |
| Total Budget | \$3,996,051 |
| Funding | Eight percent General Fund and 92 percent Internal Service Fund |
| Actual Costs as of December 31, 2016 | \$1,877,552 |
| Outside Contractor(s) | Trimble Navigation Limited |
| Prior APA Report and Issue Date | Department of General Services' Division of Real Estate Services for 2016 http://www.apa.virginia.gov/reports/DRES2016-web.pdf |

PMIS Migration from Unisys

The Department of Human Resources Management (DHRM) is migrating the Commonwealth's personnel management (PMIS) and health benefit election (BES) systems from their current Unisys mainframe environment, to a modern technology platform. The Unisys mainframe is cost prohibitive for DHRM to maintain and operate alone since all other agencies have recently migrated away from Unisys and no longer share in its costs. In addition, PMIS and BES were at risk since there is a dwindling pool of support personnel who can manage these applications built on obsolete technologies.

Table 10

| | |
|---|---|
| Project Sponsor | Sara R. Wilson, DHRM Director |
| Project Manager | Leonard Nottingham |
| Current Phase of Development | Execution and Control |
| Project Timeline | <ul style="list-style-type: none"> • Detailed Project Planning April 2015 • Architecture Phase Deliverables May 2015 • DHRM Acceptance of Code Delivery #1 March 2016 • DHRM Acceptance of Code Delivery #2 June 2016 • DHRM Acceptance of Code Delivery #3 September 2016 • DHRM Acceptance of Code Delivery #4 October 2016 • User Acceptance Testing December 2016 • Go-Live with Migrated System February 2017 • Project Close-Out February 2017 |
| Total Budget | \$6,150,650 |
| Funding | General Fund |
| Actual Costs as of December 31, 2016 | \$6,279,855 |
| Outside Contractor(s) | Fujitsu Ltd. |
| Additional Information | The section entitled "Highlights of Selected Systems Development Projects" contains additional information on this project. |
| Prior APA Report and Issue Date | Progress Report on Selected System Development Projects, dated May 2016 http://www.apa.virginia.gov/reports/ITProjectManagementProgress2016-web.pdf |

Telecommunications Expense and Billing System

The Virginia Information Technologies Agency's (VITA) Telecommunications Expense and Billing System (TEBS) project will procure and implement a modern, integrated, user-friendly telecommunications expense and billing solution. TEBS is to replace the 30-plus year-old mainframe Telecommunications Inventory Billing System (TIBS) that currently supports VITA's telecommunications service delivery. The solution will provide an integrated approach to processing all aspects of telecommunications, including: sourcing management, ordering, provisioning, user support, inventory management, invoice management, usage management, dispute resolution, executive information and decision support.

VITA originally scheduled this project to close out in September 2016, but delays in obtaining a suitable test environment have moved this date back to June 2017. Northrop Grumman was unable to provide a suitable testing environment in a timely manner, so VITA decided to re-design the TEBS architecture from virtual to physical servers.

Table 11

| | |
|---|--|
| Project Sponsor | Dana Smith, Executive Director of Administration and Finance |
| Project Manager | Susan Cousins |
| Current Phase of Development | Execution and Control |
| Project Timeline | <ul style="list-style-type: none"> • Security Framework Established March 2015 • Gap Analysis and General Design May 2015 • Vendor Feed setup and Testing September 2015 • System Testing November 2015 • Configuration and Development May 2016 • Develop and Test Interfaces January 2017 • Training February 2017 • Go-Live March 2017 • Project Close-Out June 2017 |
| Total Budget | \$3,689,610 |
| Funding | Internal Service Funds |
| Actual Costs as of December 31, 2016 | \$2,505,121 |
| Outside Contractor(s) | Northrop Grumman is responsible for the service delivery of the Commonwealth's IT infrastructure needs with oversight by VITA. Ernst & Young is the IV&V provider. |

Modernization

The Virginia Retirement System (Retirement System) is replacing its existing mainframe-based systems with a web-based platform, changing the way employers and members interact with the Retirement System. The Modernization project was designed in four phases. The first three phases have been successfully completed and focused on detailed planning, business process reengineering, and the implementation of employer functionality.

The final phase, Modernization Phase 4, is currently in development and will transition all remaining functionality from the legacy system to the new modern system, thereby eliminating the need for staff to use two systems as well as mainframe expenses. This final phase will provide enhanced member services, including the ability to make online refund requests, as well as various self-service capabilities that will enhance the member's knowledge and experience.

Table 12

| | |
|---|--|
| Project Sponsor | Farley Beaton, Chief Technology Officer |
| Project Manager | Krishna Dandamudi |
| Program Manager | Denise Rasmussen, Deputy Chief Technology Officer |
| Current Phase of Development | Execution and Control. However, VRS is using a hybrid-agile approach to systems development, opposed to a waterfall approach. Agile consists of multiple sprints, instead of a gradual development approach. Each sprint includes test case design, test case walkthrough with the business, execution, and system integration testing. |
| Project Timeline | <ul style="list-style-type: none"> • Refunds – Release 1 July 2015 • Refunds – Release 2 December 2015 • Customer Self-Service..... March 2016 • Benefit Calculation Engine April 2016 • MyVRS 2 (Customer Self-service #2) January 2017 • Purchase of Prior Service January 2017 • MyVRS 3 (Retiree Transaction) July 2017 • Retirements Processing for Disbursements January 2018 • Retirements Processing for Non-disbursements ... January 2018 • MyVRS 4 (Online Retirements) April 2018 • Other Functions (VLDP, LTC, MBPs) July 2018 |
| Total Budget | \$22,215,579 |
| Funding | Trust and Agency Funds |
| Actual Costs as of December 31, 2016 | \$13,230,427 |
| Outside Contractor(s) | The Retirement System uses various contractors to supplement Retirement System staff in technology roles. |
| Prior APA Report and Issue Date | Progress Report relating to the original plan for Modernization: http://www.apa.virginia.gov/reports/SystemDevelopment_March2012.pdf |

Central Criminal History Application

The Virginia State Police (State Police) needed to replace its legacy Computerized Criminal History (CCH) system because it was more than 30 years old and did not meet Virginia's Enterprise Architecture standards. This important legacy system was the sole repository for Virginia's arrests and court dispositions and the entire criminal justice community (law enforcement, courts, commonwealth attorneys, jails, etc.) in Virginia relied upon it for accurate offender information.

In 2004, State Police moved the CCH system from the Unisys mainframe to a Unix-based system. Although it ran on a modern hardware environment, it was not able to take advantage of many newer features because it relied upon a proprietary software (Inglenet) to operate. Because of the risk associated with that package and the need for a more modern and flexible environment to respond to changing business and legislative needs, it was essential that State Police replace the system. The legacy system was successfully replaced in October 2016 and the project is currently in the close out phase.

Table 13

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|---|---|
| Project Sponsor | Darin Riedlinger, Information Technology Manager |
| Project Manager | Mitchell Sams |
| Current Phase of Development | Close out |
| Project Timeline | <ul style="list-style-type: none"> • Project Initiation September 2013 • Detailed Planning April 2014 • Remaining Functionality October 2016 • Project Close-Out December 2016 • System Stabilization April 2017 |
| Total Budget | \$7,366,051 |
| Funding | Purdue-Pharma grant for a total of \$6,657,463; \$452,500 allocated from General Funds |
| Actual Costs as of December 31, 2016 | \$7,338,083 |
| Outside Contractor(s) | IV&V is being handled by International Consulting Services (ICS) |
| Prior APA Report and Issue Date | Progress Report on Selected System Development Projects, dated May 2016 http://www.apa.virginia.gov/reports/ITProjectManagementProgress2016-web.pdf |

Highway Maintenance Management System

The Virginia Department of Transportation (Transportation) is developing a Highway Maintenance Management System to improve identified deficiencies in their maintenance and asset management activities and to take advantage of new and improved information technology solutions recognized by Transportation executives. The project started in July of 2015 and Transportation expects to close it in April of 2018.

The project's objective is to implement an efficient work order and asset/inventory management system that will consolidate and coordinate data to provide cost effective and efficient services across all divisions of Transportation. The system will be able to create a unique work order for each service request and route the work orders to create maximum efficiency. The system will assign labor, equipment, and material by work order for a more detailed job cost.

Table 14

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|---|--|
| Project Sponsor | Garrett Moore, VDOT Chief Engineer |
| Project Manager | Shanta Tripuraneni |
| Current Phase of Development | Planning |
| Project Timeline | <ul style="list-style-type: none"> • Vendor Selection and Contract Signed March 2016 • Requirements Validation September 2016 • Software Installation and Development..... October 2016 • Development and Integration May 2017 • System Testing August 2017 • User Acceptance Testing October 2017 • Training January 2018 • Project Close-Out June 2018 |
| Total Budget | \$11,672,143 |
| Funding | Commonwealth Transportation Fund |
| Actual Costs as of December 31, 2016 | \$1,025,605 |
| Outside Contractor(s) | DTS, Data Transfer Solutions |



Martha S. Mavredes, CPA
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March 27, 2017

The Honorable Terence R. McAuliffe
Governor of Virginia

The Honorable Robert D. Orrock, Sr.
Chairman, Joint Legislative Audit
And Review Commission

We are currently conducting audits of the systems development process for several major information technology projects and submit our report entitled, **"Progress Report on Selected System Development Projects in the Commonwealth"** for your review.

We found that for the major information technology projects included in this progress report, the project managers comply with the Commonwealth's Project Management Standard, as issued by the Virginia Information Technologies Agency or with project management best practices where exempt from the Commonwealth standard. In Appendix A, we provide a summary of each of the projects we are currently following. Further, we include additional information on the projects at the Virginia Employment Commission, the Department of Human Resource Management, Virginia Alcoholic Beverage Control, and the Department of Accounts to highlight unique aspects of their status.

This progress report does not include new audit recommendations for any of the projects we are currently following, but instead describes project history, activities, and status. We verified the accuracy of this information with all of the agencies; however, since there were no audit recommendations, we did not conduct an exit conference or receive an agency response.

AUDITOR OF PUBLIC ACCOUNTS

KKH/alh