MEMORANDUM

Legislative Division of Post Audit
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TO: Members, House Appropriations Committee
FROM: Scott Frank, Legislative Post Auditor
DATE: January 27, 2015
SUBJECT: Testimony Supporting House Bill 2010

I appreciate the opportunity to testify in favor of House Bill 2010, which would amend the Legislative Post Audit Act to create a new form of IT audit—systems implementation audits.

Issues With Government IT Projects

As of September 2014, the State of Kansas had 17 active IT projects under development that were each expected to cost at least $250,000, including two that were expected to cost at least $18 million. The state's current IT projects are summarized in the figure in **Attachment A**.

Currently, these projects are overseen at three different levels. First, all such projects are overseen centrally by the Enterprise Project Management Office within the Office of Information Technology (OITS). Second, each branch of government has a Chief Information Technology Officer (CITO) who is responsible for overseeing the projects within his or her own branch. Each CITO is also responsible for working with the other CITOs to coordinate IT projects across all three branches. Finally, the Legislative Branch CITO provides periodic progress reports on the status of all large projects to the Legislature's Joint Committee on Information Technology (JCIT). This system of oversight relies heavily on self-reported status reports that are prepared by the manager for each project and compiled by the Enterprise Project Management Office.

Despite these three layers of oversight, several recent projects within the state have run significantly behind schedule, come in over budget, or have not delivered the functionality that was expected. For example, the Department of Administration's SMART accounting system was implemented in 2010 but has not functioned as expected. Similarly, the Department of Revenue's Division of Motor Vehicles has worked for the past several years on a system to upgrade the state's motor vehicle registration and drivers' license systems. The motor vehicle system was deployed in 2012 and experienced a number of problems which created long delays in some counties. The drivers' license system has yet to be implemented and as of October 2014 was nearly three years behind schedule. Perhaps most notable is the Department of Labor's Unemployment Insurance Modernization project. The project began in 2004, stopped and restarted several times with different vendors, and was finally canceled in 2011 with only a few usable components completed.

Unfortunately, unsuccessful government IT projects are common. Various articles in online literature suggest that 25-50% of all government IT projects run over budget, are not completed on time, or fail to deliver the functionality that was expected. In 1995, Legislative Post Audit

developed a guidance document for agencies that summarized many of the reasons why IT projects in Kansas had under delivered or completely failed. Those reasons included agencies failing to conduct an adequate needs assessment before the project started, putting staff in charge of overseeing the project who lacked adequate project management training and experience, and not implementing an adequate quality control process to check the vendors' work. A copy of the 1995 document is attached (see **Attachment B**).

Systems Implementation Audits

Historically, audit offices in most states rarely get involved in evaluating a government IT project until after it has failed. For example, Legislative Post Audit was directed to evaluate problems associated with the Department of Revenue's aforementioned motor vehicle system. A summary of those findings is included as **Attachment C**. While audits such as this are useful in determining who was at fault and what went wrong with a specific project, the lessons learned from these audits are not easily transferred to other projects. As a result, after-the-fact audits of specific projects are limited in their ability to prevent future problems.

At least two state audit offices have taken a more proactive approach to auditing IT projects in order to more effectively prevent problems before projects fail. In Virginia and Colorado, the state auditors conduct continuous audits of ongoing IT projects, also known as systems implementation audits.

These states assign auditors who have been trained in project management methodologies to monitor high-risk IT projects early in the process. The auditors attend all project planning and status meetings, and review bi-weekly status reports to monitor the progress of their assigned projects. They look for indications that the project might be in trouble, including many of the kinds of issues identified in our 1995 guidance document. The advantage of having an outside auditor embedded in a project is that outside auditor may recognize the signs of trouble more easily than a project manager who has a vested interest in the success or failure of the project.

When the auditors identify problems that indicate a project may be at risk, the audit office communicates the problems to agency management, to the central IT agency, and if necessary, to the Legislature. The goal is to identify problems early, when there are more options for addressing them, rather than allowing the problems to compound and have the project fail.

An example report from the Virginia Auditor of Public Accounts to Norfolk State University regarding potential problems with a new financial system is included as **Attachment D**. The auditors reviewed this system and identified a number of significant project management issues (e.g., unrealistic deadlines, a lack of contingency plans, no plans for status reports). According to officials from the state auditor's office, management carefully reevaluated its project plans and later acknowledged that the auditors played a critical role in getting the project back on track.

Provisions of House Bill 2010

The first key provision of House Bill 2010 would add a new category of audits to the Legislative Post Audit Act—information technology audits. This new category of audits would include the proposed systems implementation audits described above, as well as two types of IT audits

Legislative Post Audit already conducts—IT security audits that examine the controls agencies place around their most sensitive data and data mining audits that look for potential waste, fraud, or abuse in the state's personnel and accounting transactions. Under the provisions of House Bill 2010, all information technology audits (systems implementation, IT security, and data mining) would be conducted at the direction of the Legislative Post Audit Committee.

The second and most important provision of House Bill 2010, would give the Post Auditor additional flexibility in reporting on any problems that arise during a systems implementation audit. Under current law, the findings of any audit are confidential until after they are presented to the Legislative Post Audit Committee in an open meeting. In the case of systems implementation audits, this would mean that potential problems with an IT project could not be communicated to anyone outside the agency until after a Post Audit Committee meeting. This could significantly slow down the ability of those who govern these IT projects to respond to problems.

House Bill 2010 addresses this key reporting issue by giving the Post Auditor the authority to immediately communicate potential problems regarding a specific project to the Legislative Post Audit Committee, JCIT, and the three CITO's. This provision would be unique to systems implementation audits, but is critical because timely feedback is essential to correcting problems with IT projects.

Implementing House Bill 2010

Staff Resources

We would plan to conduct the systems implementation audits within our existing resources. Based on our conversations with Virginia and Colorado, the auditors who monitor these projects should be certified as Project Management Professionals (PMP) to make sure they have the necessary expertise and credibility. This type of training is available through the Office of Information Technology Services, but would take time to acquire. We estimate that it would take us about 6-12 months to develop the capacity to monitor projects.

Selecting Projects

We would start by monitoring just a couple of projects, but even when the audits were up to full capacity we would not have the resources to monitor all of the state's large IT projects. Consequently, the Legislative Post Audit Committee would need a process to select the projects that would be audited. Virginia uses a risk-based approach, focusing its efforts on projects that are expensive, have a longer timeframe, are especially complicated, or involve agencies that have a poor history with IT projects. We would suggest a similar approach for Kansas, the details of which would be worked out by the Legislative Post Audit Committee through its committee rules.

Summary of State of Kansas Active IT Projects (a) as of September 2014			
Agency	**Project**	**Estimated Cost**	**Current Status**
Department of Revenue	DMV Modernization	$40,326,159	Active – Hold
Department of Health and Environment	Kansas Eligibility Enforcement System III (KEES III) Project	$18,345,736	Active – Recast
Kansas State University	KSU Converged Infrastructure	$5,140,135	Active
Department of Revenue	Kansas Commercial Registration, Alcoholic Beverage Control, Fuel Tax System (KCRAFTS)	$3,346,040	Active – Caution
Kansas Bureau of Investigation	KS DUI Tracking System (Record & Police Impaired Drivers–RAPID) III	$2,900,105	Active – Recast
Kansas Highway Patrol	Digital Video Refresh - Infrastructure	$2,230,756	Active
Kansas Criminal Justice Information System	Kansas eCitation Project	$1,931,522	Active – Hold
Department of Transportation	Document Management System Replacement	$1,300,385	Active – Alert – New
Department of Agriculture	Regulatory Management System – Advancement and Online Automation for Food Services and Pesticide	$975,673	Active – Hold
Kansas Corporation Commission	Kansas Trucking Regulatory Assistance Network (KTRAN)	$962,395	Active
Department of Health and Environment	Medicaid Information Technology Architecture (MITA) / Medicaid Management Information System (MMIS) Pre-Project II	$867,934	Active – Recast
KPERS	2012 Sub HB 2333 – Tier 3 Cash Balance System	$803,800	Active
Juvenile Justice Authority	Juvenile Justice Information System (JJIS) Rewrite II	$622,460	Active – Recast – Hold
Office of Information Technology Services	OITS Information Technology Financial Management (ITFM) System	$600,000	Active – Hold
Office of Judicial Administration	Judicial Branch OJA Filings and Dispositions Data Submission Interface Project	$595,000	Active – Alert
Pittsburg State University	PSU Integrated Library System Project (ILS)	$512,072	Active
Board of Healing Arts	Licensing/Enforcement Database Application	$343,359	Active – Alert

(a) Minimum of $250,000 in estimated costs.

Source: *Summary of Quarterly IT Project Reports: July/August/September 2014*, prepared by the Enterprise Project Management Office, November 2014

ATTACHMENT A

ATTACHMENT B

Some Common Problems Noted In Computer-Related Audits

The Legislative Division of Post Audit
June 1995

Problems With Project Planning

- Often agencies started a computer development project without adequately assessing their needs. This led to time-consuming and costly modifications to the projects during their development.
- When planning projects, agencies did not sufficiently involve the end users of the systems in the decision making process.
- When agencies did a needs assessment, they often relied on software vendors who had a product to sell, rather than using an independent consultant.
- Significant costs—such as the time of State staff involved in the project—often were overlooked when establishing the budget and presenting it to the Legislature.

Contracting Problems

- When private contractors have been used, poorly written contracts have allowed vendors to be paid for systems that didn't work, or for work that was not satisfactory.

Staffing Problems

- Agency staff assigned to systems development projects didn't always have the necessary expertise.
- Agency staff were supposed to be provided to work on systems development, but often were not provided in sufficient numbers or for enough time for the project to be successfully completed.
- Agency staff, including project managers, often were expected to continue with their other duties and work on complex computer projects "on the side."

Management and Oversight Problems

- Project managers sometimes were given responsibility for a project, without being given authority to make crucial decisions or to commit the necessary resources to the project.
- Top management did not always lend their full endorsement to the project which led to disagreements and in-fighting among lower-level managers about what the system was supposed to do, what was to be done, and by whom.
- On many projects there was no quality-control review to assess the quality of the work vendors had provided before the vendor was paid.

Some Suggestions for Good Practices to Follow When Developing or Acquiring a New Computer System

The following list of good practices comes from recent audits of State computer systems, suggestions from State officials, and various references dealing with the planning and implementation of new computer systems. These good practices can and should be followed when developing a system in-house or when contracting with a private vendor, but sometimes have been lacking in computer systems developed by State agencies. References that may be helpful when developing a computer system are listed at the end of this document.

PLANNING THE PROJECT

First, do a needs assessment. Clearly defining what you need will reduce the number and magnitude of project changes and revisions after the project is under way. A needs assessment involves examining current operations and deciding exactly what you want the new computer system to do. A good needs assessment includes an evaluation of the existing agency manual and computer business processes; new automation may be just one way to improve those processes.

If possible, have the needs assessment done by someone who is not trying to sell you a specific product. It is best to use an independent consultant, or in-house staff if they have the expertise, rather than a computer vendor. This can help ensure that the needs assessment is objective. Also, while computer vendors may give reasonable assessments, their knowledge may be limited to their own products and may not take into account other vendors' products that are more suited to your agency's needs.

Extensively involve those who will be using the computer system in all stages of planning and development. Administrators and managers often don't have a good sense of the day-to-day needs of the people who actually use the system. In the past, important pieces have been left out of systems because users were not involved.

Consider whether an existing software package will fit your needs. Computer vendors often have software packages that they have developed for agencies in other states. These packages often can be modified to fit your needs for less than it might cost to develop a system from scratch. Again, always involve the users in this assessment. Only opt for custom software, with its higher development and maintenance costs, when there is a clear business case for doing so.

Ensure that the system's infrastructure is adequate. Network design and capacity, data security, user help, data backup and storage, and disaster recovery all are important considerations. Also, system designers should develop standards for acceptable response times and other service levels. Those standards should be approved by the system's users.

SETTING THE PROJECT BUDGET

Establish a budget for each phase of the project and a budget for the total project. Always prepare a budget that considers staff time to be provided as well as dollars to be spent. A working budget provides a comparison of staff time spent and actual costs with planned time and expenditures. This tool provides accountability for staying within the budget, and a systematic basis for deciding whether to modify activities to control costs.

Be sure that all costs are included in the budget. Costs such as salaries and benefits of State personnel assigned to the project and costs of training agency personnel frequently are forgotten.

STAFFING THE PROJECT

Assign a full-time manager to the project with clearly defined responsibilities. Computer development projects are very complex and difficult to manage. The manager should not be expected to work on other agency projects while managing the development of a computer software project.

Give the project manager sufficient authority over the people and other resources provided for the project. A project manager cannot successfully complete a project if he or she has to compete with other managers for limited staff resources. The manager needs to know what resources have been committed to the project, and that they can be used as needed.

Ensure the in-house staff assigned to the project have the expertise needed to effectively carry out the role assigned to them. In the past, assigning inexperienced staff to projects has been a major reason why system implementation was delayed. In addition, on joint development projects, if an agency does not supply people with the necessary expertise to do certain tasks, contractors can claim that this affected their ability to complete the project on time.

Define the work and responsibilities of all project staff. This helps to make sure that tasks are not forgotten, and that everyone who works on the project knows what his or her responsibilities are.

Make sure project staff are able to devote the required time without being expected to fulfill their other full-time duties. A frequent mistake is to expect staff to work on a computer development project and fulfill their regular duties at the same time. This generally causes poor results in both areas.

MAKING SURE THE AGENCY AND THE CONTRACTOR KNOW WHAT WILL BE PROVIDED AND WHEN

Write detailed project specifications in your request for proposals and the final contract. In the past, some agency contracts have not contained sufficient detail to specify exactly what the contractor was to provide. Because the contract language was so vague, the contractors were paid even though they had not provided a workable product.

Evaluate proposals against the agency's needs assessment. A common mistake is to compare proposed software systems against each other, instead of trying to get the best match with the agency's needs.

Contract for completed products rather than "time and materials." This helps control project costs and ensure that you receive the product you wanted. There have been cases where projects cost millions more than expected and the agency still did not receive a computer system that worked.

When a contractor is used to develop software, make sure agency staff are familiar enough with the system to be able to maintain it. This may eliminate the need to contract with the vendor to make minor modifications or adjustments to the system.

Create a quality assurance review process. The review process ensures the contractor delivers a product that meets the contract criteria before releasing payment. This step could save time and money that would be required to fix a non-working system later.

Create project milestones and timeframes to be met by the contractor before releasing payment. This helps ensure that the project stays on schedule.

Specify realistic penalties for contractor non-performance or delays. This also will help ensure that delays are kept to a minimum.

Create a joint management team of outside consultants/vendor officials and State employees to make important policy decisions. This combination of viewpoints and knowledge helps ensure that the best possible decision is made.

OVERSEEING THE PROJECT

Involve top agency management. Without top management support, the project may not have adequate staffing, or it may become overwhelmed by disagreements between departments.

Require the project manager to make regular progress reports. These reports should go to a management team or to the top agency managers. It is important that frequent reviews of the project progress be made so problems can be identified quickly, or avoided.

Address problems in software development or system configuration before moving on to the next step. Making sure each stage of development is done completely and correctly prevents costly time delays spent in diagnosing problems and rewriting programs at the end, when the system is much more complicated to unravel.

Top management should hire or assign a Project Architect to monitor the overall design of new systems. The Architect ensures that the system is designed to specifications and that it works with the existing agency structures. The Architect is a senior technician who prepares a plan for the entire scope of the project, including operations, networking, security, user help, and so forth. The Architect also monitors compliance with the plan.

Additional References

- Information Technology: A Model to Help Managers Decrease Acquisition Risks; United States General Accounting Office, August 1980.

- Executive Guide: Improving Mission Performance Through Strategic Information Management and Technology; United States General Accounting Office, May 1994.

- Information Resources: Summary of Federal Agencies' Information Resources Management Problems, United States General Accounting Office, February 1992.

Legislative Post Audit Performance Audit Report Highlights

ATTACHMENT C

Highlights

Department of Revenue: Examining Issues Related to the DMV Modernization Project

Report Highlights

October 2014 ● R-14-010

Background Information

In 2008, the Kansas Department of Revenue (KDOR) began work on the Division of Motor Vehicles (DMV) Modernization Project to replace three separate older systems.

The DMV Modernization Project will be rolled out in two phases:

- *The motor vehicle registration and titling system (Phase One) was deployed May 2012*
- *The driver's license system (Phase Two) has not been deployed yet.*

The budget for the entire DMV Modernization Project is about $40 million, which includes:

- *contractual costs to implement the new DMV information system – about $23 million.*
- *staffing costs and other miscellaneous costs – about $18 million.*

A $4 fee on each vehicle transaction processed by county treasurers helped fund the DMV Modernization Project.

QUESTION 1: *What is the current status of the DMV Modernization Project?*

- As of October 2014, the DMV Modernization Project is not complete and has fallen significantly behind schedule.
  - The new motor vehicle system (Phase One) was deployed in May 2012, about 10 months behind schedule.
  - The new driver's license system (Phase Two) has not been implemented and is nearly three years behind schedule.

- In May 2014, KDOR terminated its contract with 3M and plans to complete the driver's license system (Phase Two) internally.
  - In May 2014, with Phase Two of the project more than two years behind schedule, KDOR ended the contract with 3M.
  - KDOR kept about $2 million in retainage fees because 3M failed to perform.
  - Even after holding back some of the fees, KDOR still paid 3M nearly $20 million for the system (about 90% of the fees agreed to under contract).
  - KDOR officials told us that Phase Two is 87% complete based on total budgeted hours set in planning documents.
  - However, KDOR has not received key features that were originally included in the contract.
  - Under the termination agreement, KDOR took custody of the software code for the unfinished driver's license system (Phase Two) and plans to complete it with internal resources.
  - During the project, KDOR and 3M mutually agreed that certain milestones were too aggressive and should be moved, which essentially eliminated about $2 million in potential penalties.

- Several factors appear to have contributed to delays in the DMV Modernization Project.
  - An after-action review by the Kansas Adjutant General found that KDOR did a poor job of managing the project.
  - As a result of the after-action review, KDOR officials report they made several changes to try to avoid the same mistakes when implementing Phase Two.
  - However, our review showed the DMV Modernization Project has not had a dedicated project director since July 2013.
  - According to KDOR officials, the project was delayed because 3M's deliverables were often late or of unacceptable quality.
  - Independent external risk assessments of the project identified similar concerns early on.
  - Finally, KDOR officials noted that unanticipated legislative changes had to be incorporated which somewhat contributed to the delays in the driver's license system (Phase Two).

- Because it has not been completed, the total cost of the DMV Modernization Project is unknown.
  - As of July 2014, KDOR officials estimated the DMV project had cost about $34 million.
  - But the estimate did not include county treasurers' costs to implement Phase One (discussed in Question 2).
  - Future undetermined costs will also need to be included when calculating the total cost of the DMV Modernization Project.
  - KDOR officials told us they plan to implement Phase Two by November 2015 and estimate it will cost about an additional $2.1 million to implement.

Other Findings:

- External independent risk assessments, which are required for the duration of all large IT projects, were discontinued before Phase One of the project was completed.
  - The state's information technology policies require external independent verification and validation on all large IT projects.
  - KDOR contracted with an external firm to conduct the risk assessments on the Project, but the contract ended before Phase One was completed.
  - The external reviewer reported concerns about management of the DMV Modernization Project from the start.

- Project monitoring reports used by the state's top IT officials and the legislature did not always provide an accurate or timely picture of the project.
  - The Joint Committee on Information Technology was provided only with summary reports for the DMV Modernization Project and not the full quarterly reports required by policy.
  - Summary quarterly reports prepared by the Kansas Information Technology Office did not always include timely or accurate information on the status of the DMV Modernization Project.

- County Treasurers identified several important lessons learned from Phase One that should be addressed before Phase Two is implemented, including having the system ready before deployment.

QUESTION 2: *How much has the implementation of the DMV Modernization Project cost local government?*

- We estimate county treasurers incurred about $2.0 million to $2.5 million in additional costs to implement Phase One of the DMV Modernization Project.
  - In planning for Phase One, KDOR officials did not expect county treasurers to incur additional costs to implement the new motor vehicle registration system.
  - However, some county treasurers incurred significant staffing costs to implement the system.

- KDOR paid a total of $560,000 to counties to help offset overtime costs and also provided temporary staffing assistance to two counties.
  - In September 2012, KDOR provided one-time payments totaling $562,000 to counties to help offset overtime costs.
  - KDOR also provided temporary staff assistance to Johnson County and Shawnee County, but other counties incurring similar costs received no assistance.

- KDOR officials told us they do not expect any stakeholders to incur additional costs to implement the new driver's license system (Phase Two).

Other Findings:

- Counties have also incurred about $1 million in additional costs related to new title approval duties. In May 2012, title approval duties were moved from KDOR to the counties.

- Even though vehicle title duties have changed, the state law dictating how the title fee is split between the state and counties has not changed.
  - State law dictates how the $10 title fee is split between the state and counties.
  - KDOR officials said there are no plans to pursue a change in this law.
  - KDOR officials suggested counties could collect a facility fee to help cover any increase in operating costs.

QUESTION 3: *What current problems are county treasurers having using the new system and what are the causes of those problems?*

- County treasurers reported a number of current problems with the new motor vehicle titling and registration system (Phase One).

- In response to our May 2014 survey, nearly three-quarters of county treasurers told us the new system is often or always slow at processing transactions.
  - In all, 72% of county treasurers responding to our survey told us the new system is often or always slow.
  - County treasurers' responses appear to be driven by both their personal perception and actual system speed issues.
  - In all, 54% of county treasurers responding said the new system is worse at meeting customer needs than the old system.

- County treasurers expressed concerns about inaccurate, duplicate, or missing data in the new system.
  - Data problems exist in the new system and are viewed as a moderate to significant problem for many county treasurers.

- County treasurers continue to experience problems with the new system's equipment, including document scanners and signature pads.
  - In all 30% of responding county treasurers said they often or always have a problem with document scanners not working properly.
  - A little less than 20% of responding county treasurers said they often have problems with signature pads.

- County treasurers also expressed concerns about KDOR's ability to communicate and provide assistance.
  - About half the county treasurers responding to our survey were dissatisfied with the responsiveness of KDOR's help desk.
  - Our review confirmed there are problems with KDOR's help desk.
  - About 26% of county treasurers responding to our survey are dissatisfied with KDOR's guidance on approving titles.

SUMMARY OF RECOMMENDATIONS

Question 1 Recommendations:

- We recommended that KDOR officials follow ITEC policy and contract with an independent external oversight entity to complete risk assessments for the remaining duration of the DMV Modernization Project.

- We recommended that KDOR officials review and implement various lessons learned from Phase One.

Question 3 Recommendations:

- We recommended that KDOR officials continue to work with county treasurers to identify and resolve ongoing problems with Phase One and follow up with county treasurers on a periodic basis to ensure that any problems have been addressed.

- We recommended that KDOR consider increasing help desk staffing to better meet the needs of county treasurers who call and ask for assistance.

AGENCY RESPONSE

- KDOR generally agreed with the report's findings and recommendations. However, the agency does not plan to implement our recommendation to pilot the driver's license system (Phase Two) using real transactions and then deploy the system in stages rather than to all counties at once.

HOW DO I REQUEST AN AUDIT?

By law, individual legislators, legislative committees, or the Governor may request an audit, but any audit work conducted by the division must be directed by the Legislative Post Audit Committee. Any legislator who would like to request an audit should contact the division directly at (785) 296-3792.

Legislative Division of Post Audit

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ATTACHMENT D

COMMONWEALTH of VIRGINIA

Auditor of Public Accounts

WALTER J. KUCHARSKI
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March 30, 2011

Dr. Kim Luckes
Acting President
Norfolk State University
700 Park Avenue
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Dear Dr. Luckes,

We do not believe that Norfolk State University can successfully implement its Colleague system by July 12, 2011 as scheduled. Our Office monitors a variety of system development projects throughout the Commonwealth in an effort to reduce potential project failures. In conjunction with our financial statement audit, we reviewed your current implementation of the Colleague financial system.

We asked the Project Manager some basic questions in order to gain an understanding of the project and its progress; however, the responses provided led us to question the Project Manager's control over the project. For example, the Project Manager appears to have selected the July 12 implementation date based on when the University would like to have the system go live, rather than a date that considered what work remained and the staff available to do it. Without this type of analysis the Project Manager cannot know with any degree of certainty whether July 12 is a realistic, achievable goal.

In addition, the project team has no plan for how to handle the University's business operations and related data needs between fiscal year end at June 30 and the implementation date of July 12 or later. The Project Manager explained that upper management determined that Departments would not process transactions between these dates, but no formal plan exists outlining the process the University will follow and the risks involved with this plan. The Project Manager noted that the project is on track; however, if at any point she feels that the project is beginning to trend toward a later implementation date, she will address those issues immediately.

Finally, the Project Manager could not provide current plans or status reports and we have concerns because the project is less than four months away from its implementation. The Project Manager has not updated the project plan to reflect the current status of work or completed tasks since its original approval on January 31, 2011 and has not offered any other report or analysis that shows how the current work compares to the planned work at this time. As a result, we requested to attend project meetings but the Project Manager asked that we meet separately with her to discuss the project. Although we understand that our presence could possibly limit the candor of the project team, without project documentation, attending meetings is our best and most efficient way to understand how the project is proceeding.

The Project Manager's failure to adequately monitor and control the project creates risks affecting Colleague's successful implementation. Although the Project Manager believes the implementation is on schedule and Colleague will deliver as planned, we cannot independently validate this claim using the available project documentation.

The project documentation is missing critical information and deadlines normally necessary for successful project implementation as prescribed by the Project Management Institute's best practices. Attached in Appendix A, we provide greater detail and support regarding each of these missing critical components and what risk we have identified.

We recommend the Project Manager do the following.

1. Re-examine the project schedule and due dates and break the remaining tasks into smaller, more detailed and manageable units of work.

2. Assign specific team members to work on those detailed tasks rather than assigning tasks to a large, generic workgroup.

3. Examine team member assignments and availability to ensure they have the time availability to meet the completion of their tasks by a set deadline. Over committing team members in a given work week is setting them up to not deliver the completed task or make their deadlines.

4. Identify the tasks that create the critical path. The critical path is the series of tasks and deadlines that team members must complete for a project to finish on schedule. Identifying the critical path will allow the Project Manager to quantify how delays in completing critical path tasks affect the overall implementation date.

5. Establish a process to regularly and consistently collect actual team member hours worked on tasks and update, evaluate, and monitor task completion dates and the critical path. This monitoring process will allow the Project Manager to quickly determine when the project implementation date slips and adjust subsequent tasks or assign additional team members to bring the project back on schedule.

In late March, after providing a draft of this letter to the Project Manager, we met with the Project Manager to discuss our recommendations. The Project Manager explained that she is in the process of breaking the remaining tasks into smaller, more detailed and manageable units of work. We recommend the Project Manager continue implementing our recommendations and determine whether the July 12, 2011 implementation date is feasible and make adjustments as necessary.

Our intent with this letter is to contribute towards Colleague's successful implementation by providing recommendations that align with project management best practices.

If you have any questions regarding project management best practices or the recommendations outlined in this letter or Appendix A, please do not hesitate to call me or Tracy Surratt at (804) 225-3350.

Sincerely,

Walter J. Kucharski

cc: Mr. Edward L. Hamm, Jr., Rector

The Honorable Charles J. Colgan, Chairman
Senate Finance Committee

The Honorable Lacey E. Putney
Chairman, House Appropriations Committee

APPENDIX A

We do not believe that Norfolk State University can successfully implement its Colleague system by July 12, 2011 as scheduled, as a result of several project management risks outlined below. Our office monitors a variety of system development efforts throughout the Commonwealth. Our review goal is to detect problems at the earliest possible point and alert decision makers to this information, thereby reducing potential project failures. In conjunction with our financial statement audit, we reviewed your current implementation of the Colleague financial system.

Risk #1 – The Project Manager cannot effectively monitor and track project progress because she does not assign individual project team members directly to detailed tasks.

Best practice suggests that each task within the project schedule have at least one team member assigned and that project roles and responsibilities be clearly defined, preferably with no overlap of accountabilities. Further, only one person should be accountable for one assignment or multiple assignments, although any number of people may contribute towards those assignments. Two or more people should never have the same assignment as this leads to confusion and potential problems.

The Colleague Financials project plan shows tasks assigned to entire teams, rather than individual team members. In addition, the project plan assigns these teams at the summary task level, instead of assigning team members at the detailed task level as industry best practice recommends. By assigning entire teams to summary tasks, the Project Manager has no means of determining if sufficient project team members exist to complete the tasks on time.

For example, the project manager has assigned to two teams, the Core Team and Datatel, the summary task "Map IFAS processes to Colleague." This summary task spans 124 days and totals over 3500 hours of work. The Core Team has approximately a dozen individuals and the documentation does not explain how many individuals work on the Datatel team. The project documentation does not indicate the amount of time each team member must work on this task or the individual team member's availability. In addition, the individual detailed tasks that roll up to create the summary task, "Map IFAS processes to Colleague", have no teams or team members assigned to them.

Since receiving a draft of our recommendations, the Project Manager has begun to identify owners of each task. However, she needs to identify other team members and the amount of hours that they are expected to contribute to those tasks. This lack of detail prevents the Project Manager from using a best practice process called leveling, to determine if team members are being assigned more work than is feasible by the task due date. When a team member is over-allocated, he is assigned to work more hours than possible in a workweek. When under-allocated, he may finish tasks earlier than estimated and have downtime until his next task begins. The majority of the Colleague Financials project team is concurrently managing their regular work assignments while working on the implementation. This dual responsibility makes leveling the project even more important to ensure sufficient staff exists for a timely implementation.

We recommend the Project Manager assign individual team members to detailed tasks and level the work to determine if sufficient team members exist in order to complete the project by the July 12, 2011 implementation date.

Risk #2 – The Project Manager cannot monitor the impact of late tasks on meeting the implementation date because she does not break tasks down into small units of work.

Project management best practices recommend that the project manager break down project schedule tasks to the lowest possible level of work. Generally, no task should take longer than 80 hours to complete. This level of detail allows the project manager to monitor and control each task and make adjustments to the schedule and plan when tasks are late. Further, it gives the assigned team members a clear understanding of what they need to do to accomplish the task.

Our review of the project plan shows the current tasks define large groups of work that are often several hundred days in duration. In addition, the tasks are generic and lack the specification needed to adequately define the scope of the work. Vague tasks can lead to scope creep, as well as a product that does not meet the desired outcome.

For example the task, "Develop Payroll (CIPPS) Interface" had a schedule of 90 days to implement and involves both the Core Team and Datatel. However, the project plan does not identify the detailed tasks and duration of each task to support the 90 days summary level duration. In addition, as mentioned previously under Risk 1, the project plan did not identify which of the Core Team will work on the interface development and what level of involvement each member will have.

Since receiving a draft of our recommendations, the Project Manager has worked with the project team to begin breaking the tasks into more manageable units. She should now work to identify the project's critical path which will allow her to determine early on, whether delivering tasks late will affect the implementation date. The critical path is the series of tasks that dictates the calculated end of the project. If a single task is late on the critical path, the end date of the entire project will also be late.

As an example, when building a house, the contractor cannot build the walls until contractor completes the foundation. Likewise, the contractor cannot add the roof until contractor builds the walls. Each of these activities are in the critical path and a delay in one, such as pouring the foundation late, will impact the start date of the other, such as the day the walls can be built. The critical path can change from one series of tasks to another as you progress through the schedule; therefore, closely monitoring critical tasks is essential.

We recommend that the Project Manager continue to work with the project teams to break the remaining summary level tasks into smaller, more detailed and manageable units of work and assign team members to work on them. This will allow the Project Manager to identify the critical path and better monitor task completion so she can respond by adjusting the schedule and requesting additional team members to minimize the impact of late tasks on the scheduled systems implementation date.

Risk #3 –The Project Manager cannot monitor the project's schedule because she does not regularly collect information from team members such as hours worked on tasks and estimates to complete tasks.

Continuous monitoring gives the project management team insight into the health of the project and identifies areas that require special attention. Monitoring allows for the implementation of corrective and preventative actions that will positively affect the final project implementation. Monitoring includes collecting, measuring, and disseminating performance information and assessing trends through the project duration. Best practices recommend developing a project plan early in the project and managing the project to the plan.

As management tracks project progress, they can review the differences between planned, scheduled, and actual work. The actual work is the amount of work performed on a task or assignment. This helps management assess whether work on the project is progressing as expected. The Project

Manager must maintain the project plan in order for it to be an effective tool to monitor the project's progress.

Although the Project Manager assures us that the project is on schedule and will meet its scheduled completion date, we cannot rely on the project data provided to verify the scheduled progress and completion of work. The Project Manager has not provided evidence that she is regularly collecting detailed information from the project team regarding actual hours worked and remaining time required for each task. In addition, the Project Manager has no process to regularly update and maintain the project schedule. Infrequent updates make it difficult for the Project Manager to determine the impact of late tasks on the implementation date and to devise a plan to respond.

We recommend that the Project Manager develop a process to regularly collect from team members the actual hours worked on each task, estimate remaining work by task, and update the project plan to include that information. We recommend the Project Manager follow a disciplined approach with regular updates of the project plan and regular monitoring such as weekly, and use analysis reports to review the status often. The project plan and its analysis are management's most effective tools to indicate the status of the project.