Work Planning and Scheduling System project
Root cause analysis findings and lessons learned

Summary
BPA stopped the Work Planning and Scheduling System project in February 2012 after determining it would not deliver a product that meets BPA's business needs at an acceptable cost. BPA invested $6.43 million in the project over four years and wrote off $6.14 million in capital after ending the project. While the agency did not complete this project, this work led Transmission Services to make significant improvements in work planning and scheduling.

BPA has already taken several actions that we believe will help support the successful implementation of future projects. And based on our experiences during this project, we have identified and are implementing further steps to improve project planning and execution.

Background
BPA launched the project in April 2008 to develop a centralized planning and scheduling system for capital and expense projects. It was one of eight Transmission Services automation projects that resulted from the Enterprise Process Improvement Program. This group of projects was managed through the Transmission Process Improvement Program, or TPIP.

The intent of the project was to automate Transmission's work plan and corresponding schedules to forecast work and human resource requirements for a three-year horizon. The project relied heavily on the assumption that processes and data would be in place to support use of the software.

BPA conducted market research in fall 2007 and held a procurement process in 2008. BPA selected ClickSoftware on a best buy basis and contracted with the vendor on Feb. 6, 2009, to deliver and implement two software modules, called ClickPlan and ClickSchedule. In November 2011, BPA conducted an alternative analysis in which the agency re-evaluated its options for the project. The alternative analysis resulted in the decision to end the project in February 2012.

Why did the project fail?
Inadequate strategic planning
BPA launched multiple TPIP projects simultaneously to achieve the most savings in the least amount of time. The work planning and scheduling project depended on process changes that needed to be made as well as data that was to be created in some of these other automation projects. BPA underestimated the amount of work and time required to develop these process changes and data. BPA later realized that data from one of the projects would not be ready in time to implement the planning and scheduling system on time, and the other project could not deliver the data in the required format.

BPA made several attempts to configure the software and even developed a manual process to upload some of the data into the system. But these efforts were time consuming, and it was

unclear how long it would take to develop long-term solutions. Even if BPA found a way to integrate all of the data, the program would still not meet all of the agency's requirements. For instance, the vendor failed to deliver a critical reporting function as agreed to in the contract.

Compressed timeline and inadequate staffing
BPA underestimated the challenge of implementing the software. Because it was a commercial off the shelf (COTS) solution, BPA believed it would be a simple installation and data integration project. As a result, the project schedule did not account for the true complexity, nor did BPA adequately staff the project.

Inadequate protocols for responding to troubled projects
There was no clear trigger point at which to re-evaluate the project, nor was it clear who was responsible at each level of governance to take action. In addition, the members of the project team and the governing bodies had an interest in the project's success. The majority believed, until late in the project, that the software could be reconfigured to meet BPA's needs. As challenges with data integration arose, BPA underestimated the difficulty of resolving the issues and believed it was wiser to invest in making the software work rather than writing off what had already been invested.

Insufficient vendor research and management
BPA did not independently seek customer references. While BPA visited some of ClickSoftware's references, those visits were facilitated and attended by the vendor. Later, BPA learned from these references information that might have prevented the agency from contracting with this vendor. There was also a lack of coordination between Transmission and IT, which led to a statement of work that was insufficient to ensure the vendor would meet both organizations' needs.

What changes will BPA make?

BPA has already instituted several improvements since it launched the work planning and scheduling project, and we are developing further action plans based on what we learned during this project.

We have already added new vendor selection requirements to our IT System Lifecycle (SLC) guidelines, the methodology BPA uses to ensure its information systems meet business objectives and are maintainable and cost-effective). The changes include proof of concept guidelines to ensure the software can automate the underlying processes. Also, the SLC now includes a requirement to conduct an alternatives analysis in the planning phase to identify other possible solutions.

In addition, Transmission Services established a function and developed a skill set to properly prioritize and sequence process improvement efforts. The Integrated Program and Process Improvement team is working to properly sequence work considering resource constraints.

We are also:

- Identifying a threshold for troubled projects and clarifying the roles and responsibilities of the governing bodies.

- Improving strategic planning in Transmission to accomplish properly sequenced work within known resource constraints. Transmission's Integrated Program and Process Improvement (IPPI) is starting to perform this function now in the Plan, Design, Build and Operations and Maintenance programs.
- Modifying software testing standards in the vendor selection process.
- Ensuring coordination between IT and Transmission in developing statement of work and approving contract milestones.

In addition, the BPA administrator, chief operating officer, chief information officer and Transmission executives have identified specific actions they will take toward continuous improvement.

What did BPA gain during this project?

Work that BPA completed for the purposes of this project helped improve Transmission's planning and scheduling of resources. BPA created two new work groups that are well coordinated: Work Planning and Scheduling in Transmission Field Services and Project Management Analysis and Scheduling in Transmission Engineering.

Work Planning and Scheduling has put into place a SharePoint scheduling system for field work, using data developed in other TPIP projects that was intended to be integrated into ClickSoft. This work group is in the process of integrating other systems into the scheduling calendar. These enhancements, which will take place over the next six months, will provide most of the data centralization that ClickSoftware was intended to provide.

BPA also adopted functions in the resource management process. The first is called demand planning, a method to best balance demand for work against resource capacity. Demand planning may use real or forecast work. This function is being performed for capital work in all of Transmission Services, and for capital and expense work in Transmission Field Services. Transmission Field Services has tied this planning to its budget at a centralized level. Planning and budgets were previously tied together at a district level. The second new planning function is called availability to promise, which focuses only on real work. The goal is to provide feasible commitment dates that correspond to major project milestones. BPA uses these committed dates to drive detailed scheduling activities.

With the improvements that are already in place, Transmission Services has improved its ability to meet in-service dates by about 13 percent despite the doubling of its annual capital budget.

Finally, BPA gained valuable lessons from this project. The agency's executives are committed to sharing the lessons learned with employees throughout the agency, and they are firmly committed to taking action based on them. The BPA administrator, chief operating officer, chief information officer and Transmission executives identified specific actions they will take toward continuous improvement. These actions, as well as the RCA, are available at www.bpa.gov/Finance/FinancialInformation/FinancialOverview/Pages/default.aspx.