



Internal Program Review

IT Workshop

July 18, 2012

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VP and CIO



IPR Questions Related to Information Technology:

Question #1 - *Can we see a budget for the last few years and the next two, that shows the costs of “implementing project solutions” that breaks out capital and expense funding for major projects?*

Although IT began delivering 20 new systems per year beginning in 2012, there are no reported financial savings or reported productivity improvements.



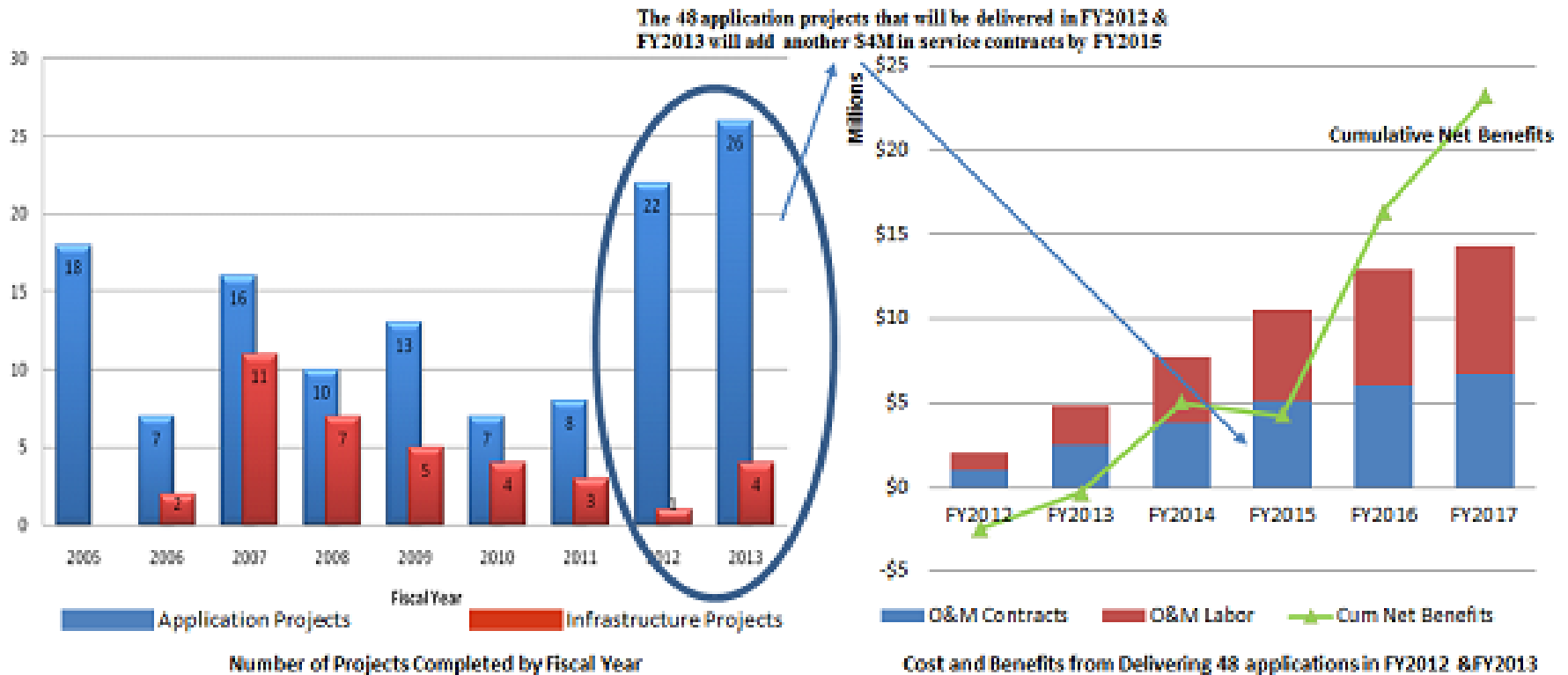
Response to Question #1

PROJECT NAME	2006		2007		2008		2009		2010		2011		2012		2013		2014		Estimate at Completion		Close Out
	CAP	EXP	CAP	EXP	CAP	EXP	CAP	EXP	CAP	EXP	CAP	EXP	CAP	EXP	CAP	EXP	CAP	EXP	CAP	EXP	Date
Customer Billing (CBC-Billing)					4,508		3,684	155	2,047	92		717		720		726		729	10,239	3,139	3/19/10
Customer Contracts (CBC-Contracts)				6		66	397	639	2,570	122	2,879	379	1,096	49					6,942	1,261	3/23/12
Customer Portal (CP)								26	286	192	2,231	15	523	168		160		160	3,040	721	2/24/12
Data Center Modernization (DCM)							4,737	652	13,013	308	1,987	90	4,258	140		204		208	23,995	1,602	3/23/12
Desktop Modernization Project (DMP)										309		1,371	4,691	809	3,455	508	1,264	36	9,410	3,033	Active
IT Infrastructure Life-Cycle Refresh (IT-LCR)									697		3,264		1,725						5,686	-	Active
Loads Obligations & Resource Analyzer (LORA)							582	222	2,081	71	2,546	132	1,142	604		307		232	6,351	1,568	Active
Rates Analysis Model (RAM)									351	33	1,701		749	143		202		202	2,801	580	4/27/12
Regional Dialogue Scheduling System (RDSS)							586	272	2,632	5	2,746	64	13	367		365		365	5,977	1,438	10/21/11
RODS Retirement (RODS)				8		949	1,646	225	3,307	68	4,563	18	5,182	4	551	15			15,249	1,287	Active
Service Connection (SC)		124	110	198	500		1,699	479	1,548	230	692	136	200	466		253		253	4,749	2,139	3/18/11
Slice Computing Application (SLICE)						39	680	350	1,464	77	2,803	178	4,759	124	2,824	131		814	12,530	1,713	Active
Telecommunications Circuit Management System (TCMS)							31	136	1,764	186	1,374	226	419	276		414		639	3,588	1,877	Active
Transmission Asset System - Inside the Fence (TAS)				18	263	166	1,529	357	3,635	462	4,356	670	286	549		400		400	10,069	3,022	2/24/12
TOTAL (thousands of dollars)		124	110	230	5,271	1,220	15,571	3,513	35,395	2,155	31,142	3,996	25,043	4,419	6,830	3,685	1,264	4,038	120,626	23,380	



Response to Question #1 (cont)

Figure 73 - Impact of FY 2012 Project Work





Response to Question #1 (cont)

Productivity Improvements Resulting From:

“TAS – Outside the Fence” - *Larry Bekkedahl*

- Accurate asset inventories
- Documented maintenance schedules
- Improved record keeping
- Enhanced reporting
- Mobile access and connectivity



Response to Question #1 (cont)

Productivity Improvements Resulting From:

“RODS Replacement” - *Randi Thomas*

- Modern, distributed platform and architecture
- Enhanced maintainability
- Improved documentation
- Improved recoverability
- Less reliance on single-point-of-failure SMEs



Response to Question #1 (cont)

Productivity Improvements Resulting From:

“Loads Obligations and Resource Analyzer (LORA)” - *Suzanne Cooper*

- Improves visibility to loads, obligations & resources from short-term to long-term
- Replaces obsolete systems(LaRIS and HAL)
- Automates data feed for reporting functionality
- Assures consistency in data aggregation for variety of hydro models
- Provides transparency of data to upstream & downstream users
- Provides ability to slice and dice data for analysis



Response to Question #1 (cont)

Productivity Improvements Resulting From:

“Regional Dialog Scheduling (RDSS)” - *Suzanne Cooper*

- Provides ability to support Regional Dialogue 20-year agreements
- Provides ability to support inter-hourly schedules
- Enhances failover capability
- Replaces obsolete system (GTAS)
- Creates Newton (load forecasts, pricing data)
- Automates settlement function for transfer customers



IPR Questions Related to Information Technology:

Question #2 - *How much of the budget for FY11 to FY14 is related to the development and support of EE Central? Now that the contract for EE Central has been stopped, what is the plan for reporting of EE programs and how much is this going to cost?*



IPR Questions Related to Information Technology:

Question #2 - *How much of the budget for FY11 to FY14 is related to the development and support of EE Central? Now that the contract for EE Central has been stopped, what is the plan for reporting of EE programs and how much is this going to cost?*

The EE Central project was originally funded and managed by EE, and thus was not included in IT's FY11 or FY12 budgets. During the decision to stop the vendor contract for EE Central, the project was transferred to IT to be managed as an IT effort for FY13.

We are currently working on an interim solution to meet the immediate and basic needs of EE customers, for an October delivery date. Later this year, following Alternatives Analysis, we will make a determination as to which way to go for a permanent EE Central solution.



IPR Questions Related to Information Technology:

Question #3 - *We would like a briefing explaining why IT expenditures continue to escalate significantly in excess of the base IPR levels. As part of that briefing, we would like to know what the “lessons learned” on the Inspector General’s report on BPA’s IT programs, and how the Inspector General’s report is affecting planned BPA IT spending.*



IPR Questions Related to Information Technology:

Question #4 - *Please provide additional information on the potential increased costs for “Cloud” based environment vs. the current capital and expensed cost approach.*

Please provide additional information on IT’s involvement in other department’s software applications and how those costs are treated in the budgets.



Response to Questions #3 and #4

Problem Statement:

Over the past couple of years, we've seen a fundamental market shift of IT spending, away from capital and towards expense.

Looking to the future, this is a growing trend which will continue into the next decade and beyond.

A change is needed in the IT funding model, in recognition of this fundamental shift.



What Are the Triggers Causing This Need For a Funding Shift?

- ❑ Ever increasing adoption of SaaS (Software as a Service)
- ❑ Movement towards PaaS (Platform as a Service - aka “Cloud” computing)
- ❑ Growth (doubling) of the IT Capital Portfolio in recent years has placed upward pressure on IT’s expense budget
- ❑ Historically, we’ve not increased operational budgets to cover the “expense tails” of delivered IT systems; This results in the Agency receiving the benefits of the new system, while IT absorbs the unfunded O&M expenses, coming largely out of funds that would have otherwise been used for systems enhancements, hardware refresh, and infrastructure improvements.
- ❑ Changed (more rigorous) interpretation of BPA’s capital funding policies related to IT projects, limiting project activities that can be capitalized. (A few years ago, we would capitalize nearly 100% of a project’s cost. Today, we typically capitalize no more than ~70% on average.)



What Are the Triggers Causing This Need For a Funding Shift? *(cont)*

- ❑ Hardware and software vendor maintenance, and IT supplemental labor rates all continue to grow at rates significantly higher than inflation (*inflation @ 1%, vendor maintenance @ 3-7%, supplemental labor @ 10-12%*).
- ❑ Increase in office IT equipment is necessary to support the people that are required to deliver on BPA's programmatic growth. The number of people supporting BPA's programs has grown 5-6% over the last several years and is expected to maintain this growth rate over the next rate period. (*FTE @ 5-6% annual growth*).
- ❑ Increase in FTE to provide on-site operational support for ADC site in Munro (*2-3 additional FTE*).
- ❑ Projected increases needed for network monitoring, intrusion detection/prevention, and other cyber security-related (SOC) functions (*8-10 additional FTE*).



What Has IT Been Doing About This Phenomena?

- ❑ Extended hardware refresh cycles (servers/desktops – 5 yrs, network – 7 yrs)
- ❑ Leveraged innovation and process improvements to achieve efficiencies in the Infrastructure Portfolio
 - Server consolidation and virtualization
 - Moving towards VDI (virtual desktop infrastructure)
- ❑ Delayed system enhancements and upgrades, as IT resources (FTE) have been moved from enhancement work to capital projects
 - Postponed upgrades to Asset Suite, PeopleSoft ERP (Financials and HR)
 - Continued with spreadsheet solutions (e.g. Canadian Treaty obligations tracked through 9 spreadsheets integrated with user-developed VBA code; Similar situation with Vegetation Management)
- ❑ Chosen to be a late adopter of “Cloud-based” managed services (SaaS, PaaS, IaaS ...), due to the impact on already constrained expense budgets

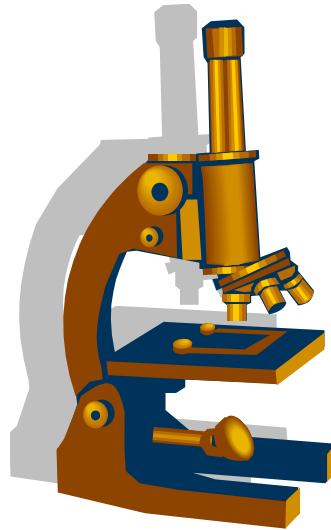


Why Is a Course Change Necessary Now?

- ❑ Enhancement deferrals have been pushed as much as possible and O&M functions are now feeling the pinch; We must begin a pull back of resources from projects to support;
- ❑ We need to renew our commitment for updating and enhancing current software assets, to better leverage and extend useful life;
- ❑ The Agency's need for automation continues to increase;
- ❑ The IPR10 budget levels in the out years don't accurately reflect the growing need for IT expense funding. The IT landscape has shifted and the budget needs to be aligned accordingly.



IG Audit Outcomes





Summarization of report findings:

- **Vulnerability Management** – Technical testing of certain Bonneville information systems identified weaknesses in the areas of access controls, patch management, and validation of user input.
- **System Security Controls** – Weaknesses noted related to implementation of standard security configurations, application of least privilege principles, contingency planning, and system security planning.
- **Project Management** - Certain projects managed by Bonneville’s PMO suffered from cost, scope, and schedule issues during the projects’ life cycles.
- **Hardware and Software Standards** – Bonneville had not always adhered to its approved standards when procuring hardware and software.
- **Security Policy and Procedures** – Bonneville officials had not ensured that policies and procedures related to cyber security were effectively implemented.
- **Resource Planning and IT Organizational Placement** – Projects were not always adequately resourced; The office of the CIO lacked authority to establish and enforce policies across all Bonneville IT groups.



Four recommendations:

- 1) Correct, through the implementation of appropriate controls, the cyber security weaknesses identified in this report.**
- 2) Ensure that policies and procedures are developed, as appropriate, and are adequately implemented to address weaknesses related to cyber security, project management, and IT procurement.**
- 3) Implement effective resource planning and allocation to meet IT program needs.**
- 4) Re-evaluate the authority of Bonneville's OCIO within the organization and take action, as necessary, to ensure sufficient visibility, accountability, and oversight of the IT program.**



<p>Recommendation #1</p>	<p>Correct, through the implementation of appropriate controls, the cyber security weaknesses identified in this report.</p>
<p>Actions Planned</p>	<p>Standard Security Configurations:</p> <ul style="list-style-type: none"> • <i>Use standardized desktop image deployment across agency</i> • <i>Minimize administrator rights on desktop</i> • <i>Continue migration to Win 2008 Server, with standard image</i>
	<p>Least Privilege Principles:</p> <ul style="list-style-type: none"> • <i>Rollout new Active Directory with role-based privileges (Nov '12)</i> • <i>Segregation of development and production platforms</i> • <i>Disallow developer accounts in production</i>
	<p>Contingency Planning:</p> <ul style="list-style-type: none"> • <i>Ensure contingency plans are complete and understood by IO and ISO</i> • <i>Continue with ITDR effort to provide recovery ability to Munro</i>
	<p>System Security Planning:</p> <ul style="list-style-type: none"> • <i>Establish SSPs for every IT system (not just new/upgraded systems)</i>
	<p>Access Controls:</p> <ul style="list-style-type: none"> • <i>Improve procedures to ensure prompt removal/change to access privileges</i> • <i>Require IO / ISO to regularly review and approve access lists</i>
	<p>Patch Management:</p> <ul style="list-style-type: none"> • <i>Implement enterprise-level patch mgt tool to manage patch deployment</i> • <i>Develop risk-based procedures for appropriate "opt-out" of patches</i>
	<p>Validation of User Input:</p> <ul style="list-style-type: none"> • <i>Disallow developer accounts in production</i> • <i>Evaluate use of transaction audit logging for apps with such features</i> • <i>Require IO / ISO to regularly review and approve access lists</i>



<p>Recommendation #2</p>	<p>Ensure that policies and procedures are developed, as appropriate, and are adequately implemented to address weaknesses related to cyber security, project management, and IT procurement.</p>
<p>Actions Planned</p>	<p>Cyber Security Policies:</p> <ul style="list-style-type: none"> • <i>Updated BPAM to reflect SaaS, procurement language, and clarify foreign country vendor relationships</i> • <i>Update of PCSP (Program Cyber Security Plan)</i> • <i>Development of new Cyber Security Strategy</i>
	<p>Project Management Policies:</p> <ul style="list-style-type: none"> • <i>Continue maturing of SLC policies</i> • <i>Cross-agency SLC and PMO Handbook training classes held monthly</i> • <i>Release notes now included with SLC updates</i> • <i>SLC updated to clarify phase estimates for high-level requirements, as well as revised business case prior to detail design</i>
	<p>IT Procurement Policies:</p> <ul style="list-style-type: none"> • <i>Project organized to recommend process for standardizing IT procurement practices across agency</i> • <i>Goal of establishment of one agency-wide software and hardware standard</i>



<p>Recommendation #3</p>	<p>Implement effective resource planning and allocation to meet IT program needs.</p>
<p>Actions Planned</p>	<p>Improve Demand and Capacity Planning Abilities:</p> <ul style="list-style-type: none"> • <i>Implemented system NJ-wide to sync BFTE/CFTE resource capacity (availability) with work demand (requests)</i> • <i>Development of IT Workforce Strategy document to layout options for appropriate mix of BFTE, CFTE, and outsourced managed services</i>



<p>Recommendation #4</p>	<p>Re-evaluate the authority of Bonneville’s OCIO within the organization and take action as necessary to ensure sufficient visibility, accountability, and oversight of the IT program.</p>
<p>Actions Planned</p>	<p>Extend CIO governance to Transmission</p> <ul style="list-style-type: none"> • <i>Procurement</i> • <i>Policies</i> • <i>Strategic Planning (Asset Strategy)</i> • <i>Project Management (SLC, Funding, Prioritization...)</i> • <i>Cyber Security</i> • <i>Audit Assurance</i>
	<p>Project to define clear roles and responsibilities for BPA automation (IT and OT) across NJ and Tx organizations.</p> <ul style="list-style-type: none"> • <i>Buttress and Silverstein assigned to lead effort</i>



QUESTIONS ?

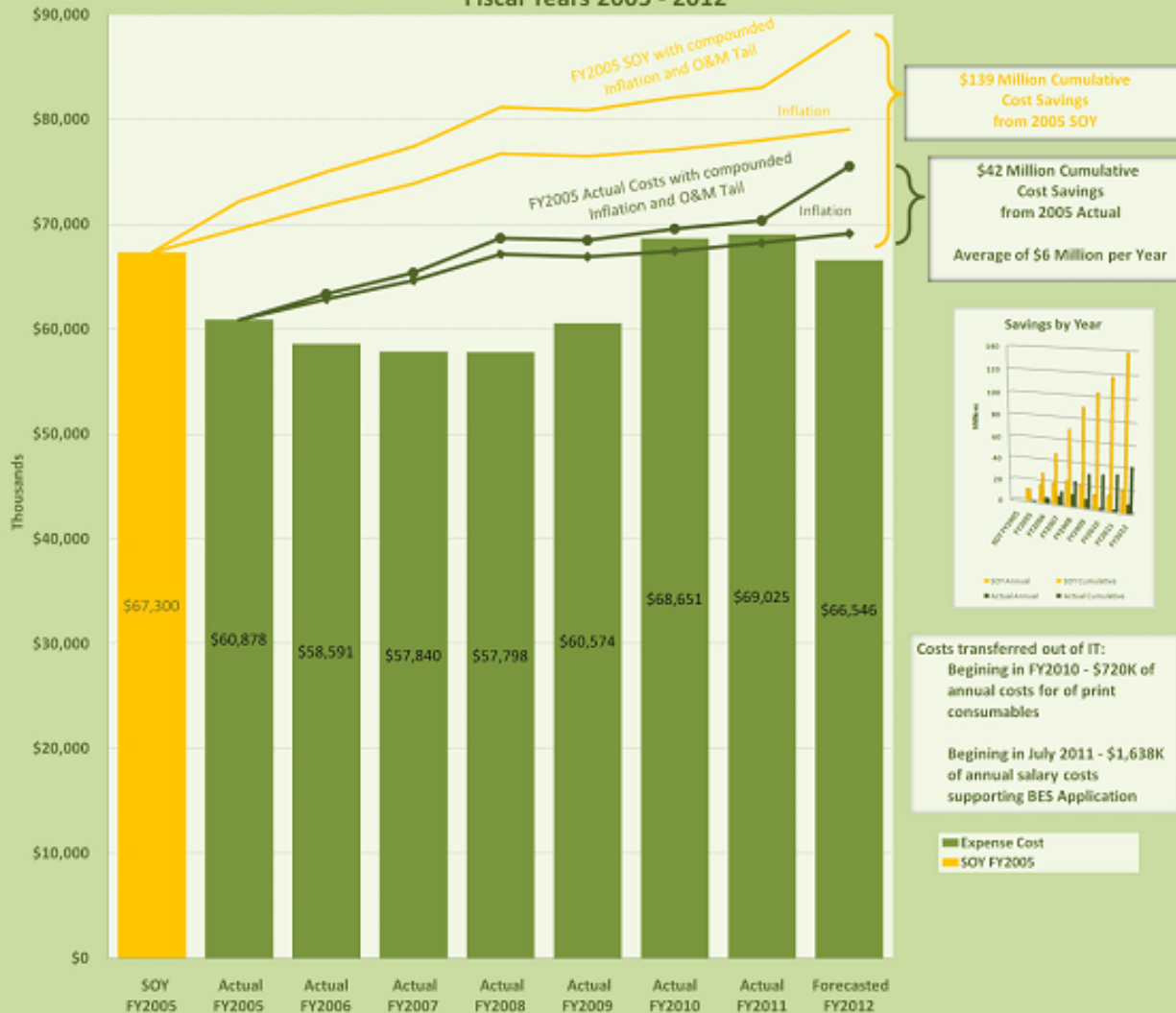


IT Budget Level Scenarios

(in millions of dollars)	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Current Targeted Budget (IPR10)												
Capital	46.3	42.1	47.0	41.0	41.0	42.0	43.0	44.0	44.0	44.0	44.0	45.0
Expense	68.6	69.0	67.8	68.6	70.2	71.7	75.1	76.9	78.4	80.0	81.6	83.2
Requested Budget (includes SOC)												
Capital					39.5	37.0	35.6	38.0	39.0	35.0	43.0	38.0
Increase (Decrease) Capital Over Target					(1.5)	(5.0)	(7.4)	(6.0)	(5.0)	(9.0)	(1.0)	(7.0)
Expense					79.2	83.4	84.9	85.0	85.4	86.1	90.2	89.0
Increase (Decrease) Expense Over Target					9.0	11.7	9.8	8.1	7.0	6.1	8.6	5.8



Information Tychology Expense By Asset Category
Fiscal Years 2005 - 2012



- **IT expense has been absorbing the increases due to**
 - Support of 101 new systems (FY2005-FY2011)
 - 17% increase in number of users
 - Doubling of capital program from \$20M to \$39M (requires 20% of capital spend in expense to move project into execution- capital spend)
 - Adoption of Software as a Service as project solution (expense instead of capital)
 - Inflation
- **Saving have been achieved my using the following levers**
 - Delaying annual hardware refreshes
 - Adopting new approach to hardware refresh
 - Leveraging innovation and process improvements to achieve efficiencies in the infrastructure portfolios
 - Reducing/curtailing system enhancements



Financial Disclosure

This information has been made publicly available by BPA on August 22, 2012 and contains information not reported in agency financial statements.