August 15, 2013

The Honorable Edward J. Kasemeyer
Chairman, Senate Budget & Taxation Committee
11 Bladen Street
3 West, Miller Senate Office Building
Annapolis, Maryland 21401

The Honorable Norman H. Conway
Chairman, House Appropriations Committee
6 Bladen Street
House Office Building, Room 131
Annapolis, Maryland 21401

Dear Chairman Kasemeyer and Chairman Conway:

The 2013 Joint Chairmen’s Report, page 38, requests the Department of General Services (DGS) to submit the following report:

"Report on Information Technology Renewal Plan: The budget committees are concerned that the Department of General Services (DGS) has a number of pressing information technology (IT) needs. Many of the department’s software and hardware systems are antiquated and impede daily operations and present risks to the functioning of the agency. In order to begin addressing these needs, DGS shall submit a report by August 15, 2013, outlining the department’s IT needs and the cost associated with each need and associated project. The report shall include:

- A description of the specific needs of the department, including, but not limited to, the needs associated with improving the redundancy of the system, establishing broadband access throughout DGS facilities, providing updated desktop and laptop equipment to DGS employees, and development medium and high priority business applications;
- A preliminary cost estimate for each of the projects and needs identified;
- An estimate of the operational risks created by the antiquated aspects of the current IT system;
- An estimate of the lost productivity created by the current IT system, including an estimate for the number of hours of lost productivity, preferably estimated using a sample survey of DGS employees; and
- The status of a comprehensive IT renewal plan, and to the extent available, details of the plan. “
The Department’s IT infrastructure has expanded over the years based on the growing needs and requirements of the agency. Primarily, this growth has occurred in reaction to urgent problems or issues. In 2011 strides were made in stabilizing and improving the network infrastructure by employing innovative interim solutions but the Department continues to struggle with an aging infrastructure that provides a variety of operational services to its user population. While some projects have been completed or are in the process, significant projects have remained unfunded and, therefore, not achieved. Attached, please find a copy of the DGS Report on Information Technology Renewal Plan. The report addresses the specific needs of the department along with corresponding cost estimates and schedule projections.

The JCR requested “an estimate of the lost productivity created by the current IT system, including an estimate for the number of hours of lost productivity, preferably estimated using a sample survey of DGS employees”. Given the improvements made to the Department’s IT infrastructure an analysis was conducted in order to fulfill this reporting requirement rather than the employee survey. This analysis involved the three (3) major PC platforms used at the Department (Windows 7, Dell 745 and Dell GX 270) and the time needed to accomplish common tasks. These tasks consisted of booting the computer, opening Microsoft Word, accessing FMIS, opening GroupWise, opening a Word document, and unlocking the screen. From this analysis the following is reflected: Dell GX 270 is two-thirds slower than Dell 745 and Dell 745 is one-third slower than a Windows 7 PC. By upgrading the 200 Dell GX 270’s to new Windows 7 computers we can theoretically double the computing efficiency of half of the Agency, and by replacing the 133 Dell 745’s another third of the Agency can be improved by half.

If you have any questions regarding this report, you may contact Linda Bowyer at 410-767-4652 or via email at Linda.Bowyer@dgs.state.md.us.

Sincerely,

Alvin C. Collins
Secretary

cc: Sarah Albert, Department of Legislative Services
    Cathy Kramer, Department of Legislative Services
    D’Andrea Walker, Deputy Secretary
    Philippe Leroy, Acting Director, Information Technology Group
    Linda Bowyer, IT Consultant
    Ellen Robertson, Legislative Liaison
Report on
Information Technology Renewal Plan
2013 Joint Chairmen's Report

With Updates to Projects as contained in the
FY 2010 Information Technology Master Plan

Maryland Department of General Services
301 West Preston Street
Baltimore, Maryland 21201

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Alvin C. Collins
Secretary

Submitted By:
Alvin C. Collins
Secretary
Department of General Services
Part Four- Agency IT Investment Portfolio

**Project #1 - Business Enterprise Reengineering Program (BERP)**

Project Description:
This project is on indefinite hold.

Total Planned Cost (TPC): $0

**Project #2 - Legacy System (AS/400) Conversion/Upgrade**

Project Description:
The AS/400 hardware platform was replaced in 2011 (at a cost of $77,297.80) by an IBM iSeries Power 720, providing a more stable and supportable platform for the applications until all the necessary applications are moved off.

Some of the applications have been replaced by non-AS/400 solutions and others are no longer in use, but critical Capital Projects applications (Capital Projects Data Base (CPDB) and Capital Projects Accounting System (CPAS)) remain.

CPDB follows Capital and Maintenance projects from inception/program to beyond completion and punch lists phases. It tracks project milestone activities, funding, awards, change orders, AE mods and any other expenses. On the CPDB resides a 30+ year history of projects, that’s used to provide historical data reports for DGS, DBM, and the Governor’s Office. The application produces several monthly reports, such as database sheets, State Stat reports & charts, Error & Omission, Performance Evaluations, and IQC.

The CPAS application is used to provide historical detail of vendor by project, from inception, inclusive of all funding and total paid by fund. This information is important in processing invoices to ensure the correct amount is being paid from the correct fund source. It is also used to handle daily payment inquiries from vendors and Program Managers. The application produces the monthly Unencumbered Balance Report (which is distributed intra-agency and inter-agency), the monthly Treasurer’s Expenditure Report, and DGS/DBM/Using Agency special requests. It logs and tracks invoices, and is reconciled to FMIS monthly.

These applications are 25+ years old, undocumented, and not Y2K compliant. They need to be replaced. In FY15 we want to develop requirements and an RFP for a replacement application that preferably will be a COTS (Commercial Off-The-Shelf) application that will run “in the cloud” - i.e., a “Software as a Service” (SaaS) solution, and we want to estimate the cost of the new solution. We anticipate that we will need two business analysts for a period of six months, to write the requirements and to investigate alternative solutions, to estimate costs.

Total Planned Cost (TPC): $208,000 (FY15); TBD (FY16 & beyond)
Project #3 - Preston Street Campus LAN Infrastructural Improvements

Project Description:
Project completed. The Token Ring network was replaced with an Ethernet network in 2011 (at a cost of $210,575.00). A few remaining token rings cables in the office area were replaced in 2012 (at a cost of $1,116.69).

The existing LAN switches will need to be replaced in FY17, and are included in project #4 (Refresh) below.

Total Planned Cost (TPC): $0 (FY15 & beyond)

Project #4 – Equipment and Software Refresh Program

Project Description:
Network Equipment: In FY14 we’re replacing our Internet access hardware (firewall, router and switch) in Baltimore and also installing a redundant set in Annapolis, for failover if Baltimore is down. In FY15 we need to replace aging WAN routers and switches at thirty (30) sites. In FY17 we will need to replace our LAN infrastructure in Baltimore.

Servers: Some servers were replaced and virtualized in 2011. The old (2005) DNS server was replaced in FY13 and the old (2005) Proxy server is being superseded in FY14 by functionality in the new Cisco firewall. Additional servers are scheduled to be replaced in FY17, FY18, and FY19, after they have been in use for five (5) years.

Desktops: In FY13 we replaced 114 antiquated desktops with 4-5 year old Windows XP desktops from another agency. On April 8, 2014 Microsoft is dropping all support (including security patches) for Windows XP. In total, DGS has around 350 Windows XP desktops, all of which need to be replaced with real or virtual Windows 7 PCs. In FY14 we have funding to replace 52 desktops/laptops. In early FY15 we plan to replace the remaining 300 Windows XP desktops/laptops with a VMware-based Virtual Desktop Infrastructure (VDI) system and 300 Thin Clients. Thus DGS’ overall mix of physical and virtual desktops will be 150 physical and 300 virtual. Starting in FY16 we will replace one-third of the physical desktops with new physical desktops each year, as the desktops age.

Software: In 2012 we purchased 258 copies of Microsoft OfficeProPlus 2010. Our users purchased an additional 17 licenses, giving us a total of 275 licenses. We will purchase an additional 175 licenses in FY14 and FY15, as desktop units are replaced. Also we need to purchase 107 new Rumba licenses as we replace desktops which have an old Rumba license. And we also need to purchase 300 Windows 7 licenses and 300 Microsoft Virtual Desktop Access (VDA) licenses in FY15 for our VDI-based desktops. Annual fees will also be incurred for McAfee maintenance and for our Oracle/Skire SaaS maintenance work order application.

Project Planned Cost (TPC): $1,266,812 (FY15), $117,458 (FY16), see spreadsheet for FY17 and beyond
Project #5 - Netware Conversion/Upgrade

Project Description:
The Novell email and file servers were upgraded to newer versions (for $12,850) in 2011, but now that the State is migrating to a state-wide Google email system (in the cloud), we need to migrate from Novell technology to Microsoft technology - since Microsoft Active Directory is a prerequisite for Google email. As part of that migration, we are also migrating our Novell file servers to Microsoft file servers, so that we don’t have to run both Novell and Microsoft directories and also so we’ll have fewer technologies to support. And we’re replacing the Novell ZENworks desktop management software with VMware Mirage software. The Novell to Microsoft migration started in June 2013 and is expected to be completed in late August 2013. In September – November 2013 we will migrate Novell GroupWise email to Google email. For the migration, in FY14 we purchased two servers to be used as domain controllers, a SAN to be used on our Microsoft file server and Microsoft licenses. In addition, thru DoIT, we will incur migration fees and Google fees.

Total Planned Cost (TPC): $72,051 (FY13), $184,269 (FY14), plus on-going annual fees and replacement equipment in FY15 and beyond

Project #6 - Procurement Project

Project Description:
This project has been cancelled.

Total Planned Cost (TPC): $0

Project #7 - Upgrade Connectivity of Remote Sites

Project Description:
DGS currently has employees at 20 remote sites that are not connected to DGS’ network. The employees need Internet access, access to FMIS, and access to shared files on DGS file servers. DGS wants to connect these 20 sites to the DGS network, through networkMaryland. Currently there is a networkMaryland presence in 14 of these sites, and DoIT will be installing a networkMaryland presence in the remaining 6 sites in FY14. To connect the 20 sites, DGS must purchase a router and a switch for each site, plus pay networkMaryland fees for the sites.

Total Planned Cost (TPC): $247,540 (FY14) plus $38,000 incremental networkMaryland fees in FY14 (covering a 7 month period) and $48,000 in FY15 and beyond

Project #8 - MFP Connectivity and Support

Project Description:
Included in project #7 above.

Total Planned Cost (TPC): $0
Project #9 - Disaster Recovery Plan Planning and Design

Project Description:
Currently DGS has servers in both Baltimore (301 W Preston) and Annapolis (29 St. Johns), but the servers operate independently. Also DGS’ network is set up as a hub and spokes, with 301 W Preston being the hub. If there’s a problem in Baltimore, it impacts most of DGS’ users. In FY15 we want to start doing data replication between Baltimore and Annapolis, so that the two sites can act as failover for one another. To make that happen, we will also need to re-design DGS’ network, using networkMaryland’s VPRN capability. In fact, in FY14 we are deploying VPRN technology at DGS sites where new network equipment is being installed. In FY15 we want to deploy VPRN to the remaining sites, so that all sites can access their files at both Baltimore and Annapolis. To do the data replication, we will need to purchase 3 Dell servers, 1 Dell EqualLogic SAN and VMware.

Also, to protect the AS/400 until we can get all applications moved off of it, we need to pay for a cold site.

Total Planned Cost (TPC): $223,952 (FY15) plus incremental VPRN networkMaryland fees (TBD by DoIT); $35,400 (FY16); plus replacement equipment in FY20

Project #10 - Central server based virus protection for files and email

Project Description:
Purchase a server to run McAfee ePolicy Orchestrator (ePO), to centrally manage enterprise security, streamline and automate compliance processes, and increase overall visibility across security management activities.

Total Planned Cost (TPC): $10,000 (FY15)

Project #11 - Deployment of OnSite Manager Server Network Management Tool

Project Description:
To protect our environment against attacks from the outside, we will acquire an intrusion detection and protection appliance, such as the ones available from Sourcefire.

Total Planned Cost (TPC): $67,360 (FY15) plus annual maintenance
### SUMMARY OF FUNDING BY PROJECT AND FISCAL YEAR

<table>
<thead>
<tr>
<th>Project Name</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
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<td>· Two (2) Cisco firewalls (1 for Balt. &amp; 1 for Ann.)</td>
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<td>· Two (2) routers (1 for Balt. &amp; 1 for Ann.)</td>
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<td>· Installation &amp; configuration of Cisco equipment</td>
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<td>· Thirty (30) GBics</td>
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<td>· Addt'l WAN replacement routers, switches &amp; UPSs</td>
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<td>· Novell to Microsoft migration services</td>
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<td>· Google fees (thru DoIT)</td>
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<td>· Microsoft server licenses, CALs &amp; support</td>
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<td>· Desktop mgmt software (150 Mirage licenses)</td>
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<td>· Two (2) Microsoft domain controllers</td>
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<td>· One (1) Dell EqualLogic SAN (for MS file server)</td>
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<td><strong>#7 Upgrade Connectivity of Remote Sites</strong></td>
<td>$247,540</td>
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<td>$295,576</td>
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<td>· Upgrade 20 sites to networkMaryland (on-net)</td>
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<td>· networkMaryland installation fees</td>
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<td>· Incremental networkMaryland annual fees</td>
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<td><strong>#8 MFP Connectivity and Support</strong></td>
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<td><strong>#9 Disaster Recovery</strong></td>
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<td>TBD</td>
<td>$36,660</td>
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<td>· Data replication between Baltimore &amp; Annapolis</td>
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<td>$36,660</td>
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<td>· VPN (networkMaryland)</td>
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**TOTAL** $736,526 $1,891,647 $277,904 $466,109 $267,089 $290,375 $762,286