MEMORANDUM

SUBJECT: Revised Corrective Action Plan to Office of Inspector General Report
No. 14-P-0332, *"Cloud Oversight Resulted in Unsubstantiated and Missed
Opportunities for Savings, Unused and Undelivered Services, and Incomplete
Policies,"* dated August 15, 2014.

FROM: Ann Dunkin
Chief Information Officer

TO: Arthur A. Elkins Jr
Inspector General

Thank you for the opportunity to respond again to the issues and recommendations for the audit
report, *"Cloud Oversight Resulted in Unsubstantiated and Missed Opportunities for Savings,
Unused and Undelivered Services, and Incomplete Policies."*   Attached are the responses to
OEI's recommendations including numbers 1, 8, 9, 10, and 11 that were previously in dispute.

If you have any questions or concerns about this response, please contact OEI's Audit Follow-up
Coordinator, Judi Maguire at maguire.judi@epa.gov or (202) 564-7422.

Attachment

cc: Rudy Brevard
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OFFICE OF ENVIRONMENTAL INFORMATION (OEI)
RESPONSE TO FINAL OIG REPORT RECOMMENDATIONS
CORRECTIVE ACTION PLAN – As of December 16, 2014

OIG Final Report No. 14-P-0332, "Cloud Oversight Results in Unsubstantiated and Missed Opportunities for Savings, Unused and Undelivered Services, and Incomplete Policies," dated August 15, 2014.

Note: The Office of Administration and Resources Management led and has completed recommendations 2 and 7.

OIG Recommendation 1:
Develop and implement an internal independent oversight process to ensure that documented cost-benefit analyses are performed in compliance with proper OMB circular prior to OEI outsourcing IT initiatives.

OEI Corrective Action Recommendation 1 (Lead Office OEI/OTOP/MISD):

OEI will task a work group to: (a) identify body of relevant OMB circulars; (b) develop (if necessary) guidance indicating what circular(s) are relevant in what cloud migration situations; (c) develop tailoring guidance[1]; (d) review existing System Life Cycle Management templates to ensure they support the cost detail requirements and have flexibility to support tailoring; (e) develop a review process that ensures all OEI cloud outsourcing initiatives are reviewed at NCC for completeness; (f) determine whether existing resources can be trained to evaluate cost-benefit analyses or whether contract support must be secured. If the latter, provide an estimate for contract support; (g) draft an internal directive for OEI instructing system owners to include a cost/benefit analysis as any part of the cloud migration and designating the authorizing official to review and approve the cost analysis. Team deliverables should be submitted in draft to the CIO for initial review by June 30, 2015. Final delivery of the internal directive should happen no later than August 30, 2015.

Planned Completion Date: August 30, 2015

OIG Recommendation 3:
Perform a formal, documented analysis to determine whether it is in the EPA's best interest to continue the IaaS contract.

OEI Corrective Action Recommendation 3 (Lead Office: OEI/OTOP/NCC):
OEI concurred with the OIG's recommendation and performed an analysis. The analysis was completed on September 30, 2014 (see attached document "Analysis of EPA Cloud IaaS Contract). The analysis concluded that continuing the IaaS contract was in the best interest of the Agency. There were three findings which led to this conclusion. First, the IaaS acquisition was conservative, cost conscious and compliant with the "Cloud First" directives. Second, the contract is being used by EPA and no cost is incurred beyond what is expended on services ordered and received. Third, OEI exercised the final option year in June 2014 which extends the period of performance through June 2015. Terminating the

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[1] OMB Circular A-130, Management of Federal Information Resources, dated November 28, 2000 states that as part of their Capital Planning and Investment Control responsibilities, agencies must "Prepare and update a benefit-cost analysis (BCA) for each information system throughout its life cycle. A BCA will provide a level of detail proportionate to the size of the investment…" Paragraph 8.b. (1) (b) (vi).

contract for the convenience of the government at this point would be costly both in terms of funding and customer disruptions.

Completion Date: September 30, 2014

OIG Recommendation 4:
Prior to entering into any future IaaS contracts, perform a formal documented analysis to determine whether such contracts are in the EPA's best interest that includes the investments the EPA would have to make to address integration requirements, obstacles and gaps identified as a result of the current IaaS contract.

OEI Corrective Action Recommendation 4 (Lead Office: OEI/OTOP/NCC):
OEI agrees with the OIG's recommendation and is preparing an action plan accordingly. The plan will address three key aspects of our preparation for future IaaS contracts. First, we will refine and communicate EPA's Cloud Computing Strategy. Second, we will design a Concept of Operations (COO) for NCC to become the Agency's Cloud Service Broker (CSB) and undertake the necessary transformative activities. Third, OEI/OTOP will define an Agency approach for acquiring new cloud IaaS contracts in the context of a CSB offering from NCC. The approach to this evaluation will incorporate a repeatable methodology for the identification of any investment the EPA would have to make to address integration requirements, obstacles and identified gaps required for adherence to applicable Federal cloud or IT requirements.

Planned Completion Date: October 16, 2017

OIG Recommendation 5:
Modify the Information Security-Interim Access Control Procedures to adhere to the TIC Reference Architecture Document, which specifies that all external connections are secured through a TIC access point.

OEI Corrective Action Recommendation 5 (Lead Office: OEI/SAISO):
The SAISO is in the process of updating the interim control procedures to reflect NIST SP800-53 rev 4, and will ensure the access control procedure includes appropriate reference guidance from the Department of Homeland Security's Trusted Internet Connections (TIC) Reference Architecture Document Version 2.0 (October 1, 2013).

Planned Completion Date: September 30, 2015

OIG Recommendation 6:
Perform a formal, documented analysis to determine whether it is in the EPA's best interest to continue using the internal hosting services as-is or to upgrade them to establish an internal private cloud that meets all characteristics of the NIST definition of a cloud.

OEI Corrective Action Recommendation 6 (Lead Office: OEI/OTOP/NCC):
OEI agrees with the OIG's recommendation and plans to undertake the necessary analysis. OEI believes that organizations must understand their IT requirements and implement clouds/hosting operations in a manner which provides the best solution for those requirements. As such, the NCC meets some of the NIST characteristics and not others. Our intent is to analyze and determine the best approaches in terms of cost and functionality in meeting EPA's hosting needs, be they cloud or other. OEI feels the most cost effective approach to analyzing its hosting operations as a cloud is to include it in the NCC COO CSB analysis being performed in support of OIG Recommendation four (4).

Planned Completion Date: October 16, 2015

OIG Recommendation 8:
Develop and implement a strategy to perform a documented analysis of the applications remaining on the platform that supported the EPA's internal email to determine which applications should be consolidated, retired and/or moved to the cloud or another platform.

OEI Corrective Action Recommendation 8 (Lead Office: OEI/OTOP/MISD): The IT Operations Working Group (ITOWG) will analyze the Domino application portfolio and develop a draft strategy for application integration, consolidation, and retirement as well as recommendations for the future of application development and collaboration for the Agency. One of the possibilities for hosting these applications would be SharePoint, which is the agency's cloud solution purchased through the My Workplace project. The ITOWG will present its findings to the Quality Technology Subcommittee during Q2 FY15.

Planned Completion Date: May 31, 2015

OIG Recommendation 9:
Develop and implement a strategy to perform a documented analysis of all of the EPA's applications to determine which applications should be consolidated, retired and/or moved to the cloud.

OEI Corrective Action Recommendation 9 (Lead Office: OEI/OTOP/MISD): Before laying out the elements of the corrective action, OEI would like to point out that this action has schedule dependencies on two other recommendations in this audit, overlap with a GAO audit finding and recommendation, and will fall under the governance of a new QIC subcommittee, the Information Investment Review Board (IIRB). As such, OEI would like to lay the groundwork for establishing its action plan.

1. This task has a schedule dependency on the work being performed by the ITOWG as described in the response to Recommendation #8. The ITOWG has done extensive work in conducting this task for applications hosted on the Domino infrastructure, and OEI would like to document the lessons learned from that effort before starting on this plan.
2. This task has a partial schedule dependency on the response to recommendation #11, developing instructions for migrating applications to the cloud. While the strategy is not driven by the instructions, some of the instructions must be written regardless of strategy (e.g., cost analysis instruction, security analysis). The two projects require coordination to ensure no contradictory elements are introduced.
3. This task overlaps with an audit finding from GAO, "Establish criteria for identifying low value/duplicative/wasteful investments."[2] OEI considers that establishing criteria for identifying duplicative investments is a necessary step for determining "which applications should be consolidated…" and intends to use the response to GAO as part of its response to this audit.
4. EPA's response to the GAO Audit finding described in item 3 was "EPA is restructuring the IIS to broaden its scope to include greater portfolio management rigor in Capital Planning and Investment Control, Enterprise Architecture, and PortfolioStat. This will enable the IIS to establish criteria for identifying wasteful, low-value, or duplicative investments." This new group, the IIRB, has been briefed on this and other relevant PortfolioStat tasks, and has provided volunteers for a workgroup to address this task. However, the first tasks that have been charged to the IIRB during FY15 are those that directly support the FY17 budget submission for e-

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[2] GAO Audit 14-65, Additional OMB and Agency Actions are needed to Achieve Portfolio Savings.

Enterprise. The task on criteria for identifying duplicative investments will be completed by the end of the fiscal year.

5. This task also has some overlap with the principles of e-Enterprise, a major EPA program that seeks to transform technology and governance of EPA's work with the States and Tribes to protect the environment. One of the Design and Operating Principles of e-Enterprise is "Streamline and modernize programs before automating them." The current e-Enterprise project plan has tasks to evaluate and look for opportunities to streamline the permitting process, which in itself requires looking at the legal and regulatory frameworks. As such, any approach to addressing this recommendation must recognize and wait on larger business streamlining tasks.

6. For purposes of this task, the universe of relevant applications is assumed to be those documented in READ.

In response to this task, OEI will:

- Speak with the leads of the ITOWG to document lessons learned that are relevant to this task.
- Meet with e-Enterprise team leads to ensure that we understand larger business process streamlining initiatives that would intersect with this task.
- Document the pool of applications in READ to be reviewed (should not include anything captured under action item #8 or e-Enterprise evaluation)
- Participate on the IIRB workgroup to identify criteria for assessing applications for duplication.
- Develop the detailed strategy and implementation plan for evaluating the READ inventory for consolidation, retirement, or migration to the cloud.

Planned Completion Date: Workgroup to brief the strategy to the IIRB for referral to the QIC
March 31, 2016, depending on the completion date of the IIRB workgroup task.

OIG Recommendation 10:
Create and follow a formal process to implement the consolidation, retirement and/or cloud migration of applications as identified in response to recommendations 8 and 9.

OEI Corrective Action Recommendation 10 (Lead Office: OEI/OTOP/MISD):

The process for implementing the strategy identified for Recommendation #8 will be developed by the ITOWG and presented to the QIC in Q2FY15.

The detailed process for implementing the responses to Recommendation #9 will be documented in the procedures and guidance documents for the System Lifecycle Management Policy. Control Gate #5, the Modify or Terminate review, is the appropriate gate to consider whether an application should be consolidated, retired, or migrated to the cloud, and appropriate instructions can be provided. The SLCM policy is scheduled for review in FY15, and the appropriate work on recommendations for these audits will be incorporated into SLCM review and revision.

Planned Completion Date: The SLCM will be reviewed and updated concurrently with the work described in the response to Recommendation #9. Upon IIRB/QIC approval of the consolidation/retirement/migration strategy, the details will be published in the SLCM, with a target date of March 31, 2016.

OIG Recommendation 11:
Publish detailed instructions for agency programs to use when considering moving applications to the cloud that fully addresses federal guidance, including but not limited to such areas as:
a. Assessing and classifying applications for cloud migration.
b. Creating cloud migration roadmaps.
c. Performing a documented analysis to determine whether a secure, reliable and cost-effective cloud option exists for all new applications.

OEI Corrective Action Recommendation 11 (Lead Office: OEI/OTOP/MISD):

The SLCM contains two points at which system or application owners may want to consider a cloud option – while conducting an Alternatives Analysis during the Acquisition Phase and at the Modify or Terminate Gate review. As part of the overall SLCM review during FY15, OEI will review these sections to determine how to add detail in the Procedures documentation, Guidance documentation, and Templates to ensure that the guidance requested in this recommendation is made available to all offices. OEI will also review best practices from other agencies as well as GAO and OMB documentation on cloud migrations.

Planned Completion Date: As indicated in the response to Recommendation #10, the SLCM updates will be published March 31, 2016.

Sources:
http://www.gao.gov/assets/600/592249.pdf GAO – Progress Made but Future Cloud Computing Efforts should be Better Planned

Federal Cloud Computing Strategy