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ARIZONA DEPARTMENT OF ADMINISTRATION

OFFICE OF THE DIRECTOR

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December 09, 2015

Mr. Tim Jeffries, Director
Arizona Department of Economic Security
1717 W. Jefferson
Phoenix, AZ 85007

Dear Tim:

In response to the *Amended* Project Investment Justification (PIJ) for the “**DES Data Center Relocation - Compute Implementation**” project, my staff has reviewed your updated proposal to finalize the project approach to successfully complete the upgrade and physical move of agency data center operations from the current location to a facility managed by I/O Data Center-Century Link.

The original PIJ implied funding was available from DCS Transition funds for AZDES in the amount of \$6,095.9 thousand and from Federal Funds in the amount of \$1,524.1 thousand for the total five-year life cycle of the project at \$7,620.0 thousand. The amended PIJ implies that additional funding is available in the amount of \$4,022.7 thousand, from Federal Funds for the total five-year life cycle cost for the project of \$11,198.8 thousand.

This is notification of the Arizona Strategic Enterprise Technology Office's recommendation to the Information Technology Authorization Committee (ITAC) for Approval with Conditions of the *Amended* technology project as follows:

1. Should there be any changes in the proposed costs, technology approach, scope of work, or implementation schedule, AZDES must amend the PIJ to reflect the changes and submit it to ADOA-ASET and the Information Technology Authorization Committee (ITAC) if required for review and approval prior to further expenditure of funds.
2. Given the current required independent third-party reviews of project progress, AZDES will make the results of the reviews available to the Information Technology Authorization Committee (ITAC) and the Joint Legislative Budget Committee (JLBC) as of the end of each calendar quarter, as well as comply with any future amendments to the current third-party review requirement.

Tim Jeffries, Director

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Page 2

The ITAC is scheduled to meet on December 16, 2015 to review this project. Should the ITAC approve the project, you may then proceed to secure additional approvals as required from the Joint Legislative Budget Committee, the Office of Strategic Planning and Budgeting, and the State Procurement Office.

Best Wishes,



J.R. SLOAN FOR MORGAN REED

Morgan Reed

State CIO

Arizona Strategic Enterprise Technology (ASET) Office

jd

cc: Stephen Welsh, AZDES
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James Dean, ADOA-ASET

ASET# DE15007_AI_C1

Analyst: James Dean

PIJ Summary - ASET

Project Number: DE15007_A1_C1

<i>Agency Name & Address</i>	<i>Contact Information</i>
Arizona Department of Economic Security 1717 W. Jefferson Phoenix, AZ 85007	Kim Hartleroad (602) 542-0592 KHartleroad@azdes.gov
<i>Project and Investment Justification Name</i>	<i>Date Submitted</i>
DES Data Center Relocation - Compute Implementation	February 19, 2015 December 02, 2015 – Amended PIJ

Project Overview

Problem Description

The Arizona Department of Economic Security (AZDES) Data Center continues to rapidly deteriorate. The AZDES Data Center has experienced 3 significant facility outages (requiring emergency services & evacuation) over the last 18 months. These facility issues have included: fire, flood, power outages, leaks, asbestos abatement, generator issues and halon deployments.

The cost to repair this facility would require millions of dollars and the repairs cannot take place while equipment is in the AZDES Data Center. Without immediate intervention, a catastrophic failure is inevitable. The only viable solution is to relocate the AZDES Data Center to the new co-located, I/O Data Center-Century Link site. The AZDES Data Center is essential to the daily functionality of the Arizona Department of Economic Security enterprise and multiple other business units within the state that are dependent on the AZDES system interfaces. It is imperative to continue the necessary project activities to prepare for the actual relocation of the current AZDES Data Center. The AZDES requires additional funds to relocate computer equipment, replace servers and storage equipment, and engage implementation services for the migration to the new co-location facility.

Solution

AZDES is requesting approval to proceed with the current data center relocation project by acquisition of additional computing hardware and professional services to address the following project needs:

- Replacement of existing end of life distributed system servers
- Replacement of existing end of life enterprise storage
- Additional data center facility requirements (Non-recurring Charge items)
- Professional services to install and configure server and storage
- Professional services to relocate the IBM Mainframe equipment
- Professional services to facilitate the application migration process

The approach to migrate to the new data center is to utilize applications “waves”. The waves were proposed based on the risk to services, system integration, organizational support capability, business impact and priority. Each application was scored based on these criteria. The score of each application was accumulated to determine the overall impact of a failure for any particular wave. The order of the waves introduces risk slowly and increases risk as

confidence grows in the capability of the new data center and the team performing the migrations.

The project plan has four weeks allocated to each wave. This is to allow time for the development, test, and production environment to be moved and tested independently. The plan is to have each environment be a small wave with testing and validation before initiating the next set of moves. Each wave will have test plans, test staff and signoff requirements. The allocated time is intended for both testing, and to mitigate any issues that may surface. In the event a signoff cannot be provided, the issues will be documented and the wave will be rolled back.

As each wave is planned further, it is important to provide preparation guidance to the end-user community. These users need to be aware of the planned outages, expected durations and testing and validation plans. It is expected that end-users will be engaged to validate the applications after the move.

The project will build backup plans and prepare materials in the event that a system outage lasts longer than the planned duration. This may include the use of desktop software and manual methods.

A communication plan that will include AZDES clients will be executed to provide notifications of system outages if/when they occur. There will need to plan for increased phone support during these outages.

The project assumes no changes to the current business continuity plans. However, the project plans to have manual business processes in place in the event that systems are down longer than anticipated. Manual business process may have to be deployed for short amounts of time. The purpose is to document transactions that would later be manually added to the system once everything is brought back up.

The AZDES IBM Mainframe will go through a number of disaster recovery failover exercises to the Arizona Department of Administration (ADOA) in preparation of the physical relocation and mitigation of risk associated with the IBM mainframe move. The first of these tests was successfully completed on February 21st, 2015. To assure that the critical services on the mainframe can be supported for an extended period at ADOA, the project includes transition to virtual tape from the current physical tape environment. The New Virtual Tape Libraries will be deployed at both AZDES and ADOA. This will allow AZDES to failover to ADOA during the move, reducing risk and potential downtime.

In the event that a system testing is unsuccessful after the move to the co-located data center, the following steps would be executed in order:

- Fail back to the existing data center image
- Restore system from snapshot
- Restore system from tape
- Restore system by redeployment of software and restore database

System backups and snapshots must be maintained and retained during the data center move until such time it is clear that the applications have been successfully transitioned.

The project will be considered complete when all applications and services are hosted and running from the I/O Data Center and the 1720 AZDES Data Center can be decommissioned.

AZDES has begun the final phase of the Data Center Relocation project. During final review of the equipment, professional services, and the software necessary to implement the physical installation into the new I/O data center, AZDES has updated the projected costs, to successfully complete the project.

The new updated costs are predominately driven by an increase in professional services, which include third party oversight from Gartner, as well as additional setup and configuration services from CenturyLink. Additional costs include necessary software and licensing for the revised plan, and a new virtual tape library.

Major Deliverables and Outcomes

Major Milestones	Start Date	Finish Date
Acquire, Install, Initial configuration of UCS servers	06/12/2015	07/07/2015
Acquire, Install, Initial configuration of NetApp storage	06/12/2015	07/07/2015
Configure and validate virtual server environment (VMware)	07/07/2015	07/27/2015
Test & Validate network, UCS and VMware environments	07/27/2015	08/07/2015
Distributed Replication enabled	08/08/2015	N/A
Exchange physical relocation	09/11/2015	09/11/2105
IBM Mainframe failover testing	Various	12/05/2015
New DMOD ready for Mainframe move	08/08/2015	12/04/2015
IBM Contract and Services	01/18/2016	01/18/2016
Uninstall, Relocate, Install, Validate IBM Mainframe and peripherals	03/19/2015	03/19/2016
Distributed Application Wave Migrations	08/10/2015	03/19/2016
Project closure and decommission	03/21/2016	04/01/2016
IV&V Oversight	10/29/2014	04/01/2016

The data center equipment relocation has been planned as a phased approach. There are four planned relocation milestones, and three migration milestones planned. The revised schedule is listed below:

Major Milestones	Start Date	Finish Date
Equipment Relocation Services Milestone One	10/02/15	10/30/15
Equipment Relocation Services Milestone Two	01/01/16	01/31/15
Equipment Relocation Services Milestone Three	02/01/16	03/27/16
Equipment Relocation Services Milestone Four	06/03/16	06/30/16
Migration Playbook Milestone One	08/19/15	10/22/15
Migration Playbook Milestone Two	08/19/15	10/30/15
Migration Playbook Milestone Three	09/10/15	11/19/15

Benefits

- Problem Avoidance – Problems associated with the current data center environment will be mitigated once the move and migration is complete.

- Risk Avoidance – The risk associated with potential system/service failures induced by the current data center conditions.

Project Management

The project manager for this project is PMP certified, with the primary work resources being vendors to perform configuration of; the VMware environment, storage and server hardware, and to move IBM mainframe to new co-location data center. The project manager will work to coordinate activities across all vendors to assure continuance and a positive sequential flow of this project.

Enterprise Architecture

Compliant.

Original Summary of Proposed Costs

<i>All Figures in Thousands (\$000)</i>						
<i>Cost Description</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>Total</i>
Development Costs	5,122.1	0.0	0.0	0.0	0.0	5,122.1
Operational Costs	733.9	441.0	441.0	441.0	441.0	2,497.9
Total Project Costs	5,856.0	441.0	441.0	441.0	441.0	7,620.0

Amended Summary of Proposed Costs

<i>All Figures in Thousands (\$000)</i>						
<i>Cost Description</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>Total</i>
Development Costs	9,134.8	0.0	0.0	0.0	0.0	9,134.8
Operational Costs	300.0	441.0	441.0	441.0	441.0	2,064.0
Total Project Costs	9,434.8	441.0	441.0	441.0	441.0	11,198.8

Recommendation: Approval with Conditions

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