



**ADOA - ASET**

Arizona Strategic Enterprise Technology

**Project Investment Justification**

**Version 1.0**

A Statewide Standard Document for Information Technology Projects

**Project Title:**

**400 Congress Campus Fiber Install**

<b>Agency Name:</b>	Arizona Department of Administration
<b>Date:</b>	2/6/2014
<b>Agency Contact Name:</b>	Gary Hensley
<b>Agency Contact Phone:</b>	
<b>Agency Contact Email:</b>	

[Hover for Instructions](#)

## I. Management Summary\*

In Fiscal Year 2013, the Arizona Department of Administration's Strategic Enterprise Technology Office (ADOA-ASET) completed a number of initiatives designed to enhance the supporting infrastructure and resiliency of the State Data Center (SDC) environment. During scheduled fiber performance testing at the Tucson SDC, located at the 400 W. Congress campus, it was discovered that existing fiber infrastructure cabling did not meet industry standard performance specifications.

As a result, ADOA-ASET proposes to upgrade all fiber optic cable at 400 W. Congress to support current and future needs of this multi-tenant campus. In addition, cable routing and labeling will be upgraded to meet industry standards. This will include installation of two new racks in cabling closets that lack space to support fiber termination.

## II. Project Investment Justification (PIJ) Type\*

Yes  No Is this document being provided for a Pre-PIJ / Assessment phase?

If Yes,

Identify any costs to be incurred during the Assessment phase.	\$0
Based on research done to date, provide a high-level estimate or range of development costs anticipated for the full PIJ.	\$

Explain:

[Click here to enter text.](#)

Yes  No Will a Request for Proposal (RFP) be issued as part of the Pre-PIJ or PIJ?

## III. Business Case

### A. **Business Problem\***

In preparation for the Cisco Internet Protocol (IP) Phone upgrade and the Arizona Network II (AZNet II) network refresh, testing of current fiber infrastructure cabling at the 400 W. Congress campus was conducted to determine network readiness. As a result of this testing, it was determined that current fiber at the campus was non-compliant with required performance specifications. Due to these findings, all fiber optic cables connecting the Tucson SDC servers to termination points on floors within three buildings at the campus will need to be replaced.

Additionally, four (4) cabling closets did not meet industry standards for cable routing, rack space, and cable labeling. Excess cable length was observed along with abandoned cabling stretched between racks in walkways, creating safety concerns.

### B. **Proposed Business Solution\***

ADOA-ASET is proposing to install new fiber optic cable at the 400 W. Congress campus. This fiber will run from the Tucson SDC servers to (15) Intermediate Distribution Frame (IDF) closets. This work will be performed by a State of Arizona-approved Qualified Cabling Contract vendor. The new fiber will terminate in new Lightguide Interface Units

(LIUs) in IDF closets located on several floors of the 400, 402, and 416 W. Congress buildings. New racks will be mounted in closets that currently lack rack space to mount the LIUs and AZNet II switches.

Additionally, ADOA-ASET is proposing to correct the four (4) IDF closets which did not meet industry standards and/or posed safety concerns. This process will include the proper routing of network cables in trays, cable labeling, and the removal of abandoned cabling.

### C. **Quantified Benefits\***

<input checked="" type="checkbox"/>	Service enhancement
<input type="checkbox"/>	Increased revenue
<input type="checkbox"/>	Cost reduction
<input checked="" type="checkbox"/>	Problem avoidance
<input checked="" type="checkbox"/>	Risk avoidance

Explain:

The installation of new fiber will reduce downtime risk and increase network performance and voice uptime for over 20 state agencies consisting of approximately 429 users within the 400 W. Congress campus. The proposed fiber installation will meet performance requirements for the scheduled AZNet II network refresh and Cisco (IP) Phone enhancements.

Impacts of not replacing this existing fiber would include a diminished Quality of Service (QOS) for Voice over Internet Protocol (VoIP) calls from both internal and external customers, as well as delayed data transmission and availability. In the event of a Severity One incident, wherein a production server or other mission critical system is down and an immediate work-around is not available, the State would be at risk for incurring significant emergency fiber repair costs.

## IV. Technology Approach

### A. **Proposed Technology Solution\***

As a result of the assessment completed on December 6, 2013, by AZNet II engineers, 32 fiber strands were identified non-compliant with acceptable specification requirements for Optical Time-Domain Reflectometer (OTDR) measurements. In order to support the planned Cisco IP Phone upgrade, AZNet II network refresh, and other network requirements, new fiber plant will need to be installed. The assessment also identified four (4) IDF closets that did not meet industry standards for cable routing and labeling, and presented potentially hazardous conditions.

ADOA-ASET will address these compliance and safety issues through a two-phase upgrade effort:

**Phase 1** (IDF Clean up) - will include the installation of horizontal and vertical cable management trays, equipment racks and shelves in 4 of 15 IDF closets previously

identified as non-compliant. The current cabling will be routed according to industry standards within the management trays. Excessively long patch cables will be replaced with cables of proper length. Other potentially hazardous conditions will be corrected through the enhancement of the remaining 11 closets to industry standard levels. This work will be performed after hours to avoid service interruptions.

**Phase 2 (Fiber Replacement)** - will include the installation of approximately 4000 feet of 12 strand 50/125 OM3 and 750 feet of 6 strand single mode fiber optic cable. This fiber install will run from the data center servers at 402 W. Congress to 15 IDF closets at 400, 402 and 416 W. Congress as follows:

- 6 IDFs at 402 W. Congress (1 in basement, 1 on 1<sup>st</sup> floor, 2 on 2<sup>nd</sup> floor, 2 on 3<sup>rd</sup> floor)
- 6 IDFs at 400 W. Congress (1 on each of 6 floors)
- 3 IDF at 416 W. Congress (1 in basement, 1 on 1<sup>st</sup> floor, 1 on 2<sup>nd</sup> floor)

The 12 strand fiber will be terminated in twelve (12) new LIUs located in each IDF closet of the 400 and 402 buildings. The 6 strand fiber will be terminated in three (3) new LIUs located in the 416 building. The IDF closet LIU terminations will meet current and future tenant needs. All fiber will have the correct terminations and patch cords installed to connect the LIUs to AZNet II switches located in the IDF Closets.

Fiber network connections, including copper connections between switches and patch panels, will be tested to verify that industry standard specifications have been met. Results of testing will be provided and archived for future use.

## **B. Technology Environment**

The existing fiber optic and copper cabling is 15-20 years old. The proposed fiber installation will connect the Tucson SDC, located at 402 W. Congress, to IDFs on multiple tenant floors across three buildings. The 12 strand 50/125 OM3 fiber will be compatible with both existing and new AZNET II equipment, IDFs, LIUs and network standards.

## **C. Selection Process**

ADOA-ASET proposes to utilize Corporate Technology Solutions to complete both phases of this project. Corporate Technology Solutions has provided fiber and network cabling services to the 400 W. Congress campus data center with favorable results. Corporate Technology Solutions is familiar with this existing fiber plant, and network cabling.

# **V. Project Approach**

## **A. Project Schedule\***

**Project Start Date:** 2/17/2014      **Project End Date:** 3/21/2014

**B. Project Milestones**

Major Milestones	Start Date	Finish Date
Vendor orders hardware/fiber	2/17/2014	2/28/2014
IDF Cabling clean-up/Rack installation	3/3/2014	3/07/2014
Fiber Install	3/3/2014	3/14/2014
Unused Fiber Clean-up	3/17/2014	3/21/2014
As-Built Diagrams / Warranty Documents	3/17/2014	3/21/2014
Walk through with ADOA-ASET Program Manager	3/21/2014	3/21/2014

**VI. Roles and Responsibilities**

**A. Project Roles and Responsibilities**

**Agency Director:** Brian C. McNeil, ADOA Director

**Agency CIO:** Aaron V. Sandeen, ADOA Deputy Director, State CIO

**Project Sponsor:** Gary Hensley, Assistant Director, Chief Networking Officer, ADOA-ASET

**Project Manager (PM):** Allan Gazza, ADOA-ASET

**Technical Engineer:** Maurice Fitzpatrick, AZNet II

**Advisory Subject Matter Experts:** Aaron Freyermuth, AZNet II

**Advisory Subject Matter Experts:** Terry Thompson, AZNet II

**Physical Plant Director:** Douglas Helber, ADOA

**B. Project Manager Certification**

- Project Management Professional (PMP) Certified
- State of Arizona Certified
- Project Management Certification not required

**C. Full-Time Employee (FTE) Project Hours**

Total Full-Time Employee Hours	40
Total Full-Time Employee Cost	\$

**VII. Risk Matrix, Areas of Impact, Itemized List, PIJ Financials**

## VIII. Project Approvals

### A. Agency CIO Review\*

Key Management Information	Yes	No
1. Is this project for a mission-critical application system?	X	
2. Is this project referenced in your agency's Strategic IT Plan?	X	
3. Is this project in compliance with all agency and State standards and policies for network, security, platform, software/application, and/or data/information as defined in <a href="http://aset.azdoa.gov/security/policies-standards-and-procedures">http://aset.azdoa.gov/security/policies-standards-and-procedures</a> , and applicable to this project? If <b>NO</b> , explain in detail in the "XI. Additional Information" section below.	X	
4. Will this project transmit, store, or process sensitive, confidential or Personally Identifiable Information (PII) data? If <b>YES</b> , in the "XI. Additional Information" section below, describe what security controls are being put in place to protect the data.		X
5. Is this project in compliance with the Arizona Revised Statutes (A.R.S.) and GRRC rules?	X	
6. Is this project in compliance with the statewide policy regarding the accessibility to equipment and information technology for citizens with disabilities?	X	

### B. Project Values\*

The following table should be populated with summary information from other sections of the PIJ.

Description	Section	Number or Cost
Assessment Cost (if applicable for Pre-PIJ)	II. PIJ Type - Pre-PIJ Assessment Cost	\$
Total Development Cost	VII. PIJ Financials tab	\$45,804.00
Total Project Cost	VII. PIJ Financials tab	\$45,804.00
FTE Hours	VI. Roles and Responsibilities	40

### C. Agency Approvals\*

Contact	Printed Name	Signature	Email and Phone
Project Manager:	Allan Gazza		
Agency CIO:	Aaron V. Sandeen		
Agency Information Security Officer:	Mike Lettman		
Project Sponsor:	Gary Hensley		
Agency Director:	Brian C. McNeil		

IX. Optional Attachments

**A. *Vendor Quotes***

X. Glossary

XI. Additional Information

Links:

[ADOA-ASET Website](#)

[ADOA-ASET Project Investment Justification Information Templates and Contacts](#)

Email Addresses:

[Strategic Oversight](#)

[ADOA-ASET\\_Webmaster@azdoa.gov](mailto:ADOA-ASET_Webmaster@azdoa.gov)