



ADOA - ASET

Arizona Strategic Enterprise Technology

**Project Investment Justification
(PIJ)**

“LITE”

*A Statewide Standard Document
for Information Technology Projects*

For Low Risk Projects Only

Project Title: Video Production Equipment Replacement

Agency Name: Arizona Department of Transportation

Date: June 3, 2013

Prepared By: Casey Miller

TABLE OF CONTENTS

I. GENERAL INFORMATION	3
I.A GENERAL INFORMATION	3
II. PROJECT OVERVIEW	3
II.A MANAGEMENT SUMMARY	3
II.B EXISTING SITUATION AND PROBLEM, "AS IS"	4
II.C PROPOSED CHANGES AND OBJECTIVES, "TO BE"	4
III. PROJECT APPROACH	4
III.A PROPOSED TECHNOLOGY	4
III.B OTHER ALTERNATIVES CONSIDERED.....	4
III.C MAJOR DELIVERABLES AND OUTCOMES	5
IV. POLICIES, STANDARDS, & PROCEDURES	5
IV.A ENTERPRISE ARCHITECTURE	5
V. ROLES AND RESPONSIBILITIES	5
V.A PROJECT ROLES & RESPONSIBILITIES	5
VII. PROJECT TIMELINE	6
VII.A PROJECT SCHEDULE	6
VIII. PROJECT FINANCIALS	6
VIII.B DETAILED PROJECT FINANCIALS	6
VIII.D SPECIAL TERMS AND CONDITIONS (IF REQUIRED)	7
VIII.E FULL TIME EMPLOYEE PROJECT (FTE) HOURS	7
IX. PROJECT CLASSIFICATION AND RISK ASSESSMENT	7
X. PROJECT APPROVALS	9
X.A CIO REVIEW	9
X.B PROJECT VALUES	9
X.C PROJECT APPROVALS.....	9
APPENDICES	10
A. ITEMIZED LIST WITH COSTS	10
D. NOI (WEB PROJECTS ONLY)	10
GLOSSARY	10

I. GENERAL INFORMATION

I.A General Information

Agency CIO:	Joe Throckmorton	Contact Phone:	
Agency Contact Name:	Jesse MacDonough	Contact Phone:	
Agency Contact Email:		Prepared Date:	6/3/2013

II. PROJECT OVERVIEW

II.A Management Summary

I. Problem Description

Technology and format standards in the television/video production industry are constantly evolving. In the 1990s many television stations and production companies made the costly jump from analog to digital technologies. In 2009 the television industry made the change over from standard definition (SD) to high definition (HD) programming. Most recently, the trend in television is web-based video. Video hosting sites like YouTube and Vimeo are changing the way people get information and once again, reshaping the landscape of the industry.

While ADOT video is compliant with HD and web-based video standards and formats, some of our technology is out of date. The media storage server and internal network connectivity are underrated for department workloads, and one of the two editing systems is failing, cutting productivity in half.

II. Solution

ADOT video staff intends to replace underrated and out-of-date equipment. New equipment will need to be purchased, and a contracted technician will configure the current equipment into a comprehensive, integrated and "future-proofed" video production system.

III. Quantified Justification

Over the past two years, ADOT has increasingly used video as a key component of its external communication and has made a significant investment in technology, physical space, and talent in support of its video production capabilities.

The videos educate the public about how their tax dollars are spent, inform drivers about road conditions and projects, serve as a resource for mass communication in emergency situations, and generate interest in transportation and construction. In addition, the ADOT-produced videos are the cornerstone of the Agency's and its partners' proactive approach to public safety education, risk management, and emergency communication. In just over two years, the video staff has produced over 200 (internal and public) videos and has amassed nearly 200,000 video views on the ADOT YouTube channel (<http://www.youtube.com/ArizonaDOT>). Social media has been a key component in pushing ADOT's message.

When ADOT made the commitment to produce broadcast-quality, high definition videos as part of its external communication and education strategy, it made a significant investment in state-of-the-art editing equipment, cameras, lighting, studio space and staff. This investment was made based on the cost effectiveness and business need to have this caliber of production capabilities in house. Hiring consultants to do the number of videos that the ADOT staff does in a year would cost in excess of \$1 million annually.

The video staff has been extremely successful in achieving its mission of producing a variety of media programs that inform and educate the public, stakeholders, and other governmental agencies about ADOT projects and services, and documenting the agency's activities. The videos have won national awards and are frequently featured on AASHTO's Transportation TV, the national transportation association's center for social media public outreach and education. To

continue achieving this type of success and providing a heightened level of added-value service to the state, ADOT needs to purchase and replace vital video production equipment (in this case, media storage and infrastructure).

II.B Existing Situation and Problem, “As Is”

ADOT’s media storage capacity, as well as the connectivity between the media storage and editing systems is inadequate.

The current media storage (Maxx Digital) is capable of holding a total of 16 terabytes (TB) of data. High definition (HD) video files are much larger than typical digital files. For example, a 25-page PDF with images is approximately 2 megabytes (MB), while one minute of uncompressed HD video is approximately 2 gigabytes (GB). The average ADOT video project can run between 100-200 GB of data (1024 GB = 1 TB). The ADOT Video Department has nearly filled the media storage to its capacity. Since two full-time employees were recently added to the team, the production workload has increased and soon the storage will reach full capacity.

While storage capacity is the core of the problem, connectivity between ADOT’s two editing systems and the server is extremely insufficient. ADOT Video currently uses Category 5 Ethernet cabling to network the systems together, which does not provide sufficient bandwidth to transfer the data from the server to both editing systems simultaneously; doing so causes both edit systems and media storage to crash. If systems crash while data is being transferred, there is potential to fragment and corrupt data. Staff is currently editing in shifts, working odd hours to avoid these issues.

Another problem is that the two editing systems have different specifications. One was purchased in 2009, the other in 2011. Because technology changes very rapidly, the different specs and hardware of these two systems creates both connectivity and compatibility issues. Many of these problems stem from the difference in operating systems, processors and amount of memory in each machine.

The ADOT video production system and infrastructure (media storage, network connection, and editing systems) have been put together piecemeal over the years. Each time a piece of equipment needed replacement, it was replaced with the current industry standard (at the time) and was retrofitted into the existing video infrastructure. Adding video production equipment piecemeal is not the solution; it is a temporary fix that ultimately causes costly long-term system failures and inefficiencies.

II.C Proposed Changes and Objectives, “To Be”

We will create a complete, comprehensive video production system and infrastructure based on the requirements of the video production unit. Some of the existing equipment and current infrastructure will be integrated into this future-proofed design. Additionally, a portion of the equipment that will be replaced can be repurposed.

III. PROJECT APPROACH

III.A Proposed Technology

We are proposing the purchase of a media storage unit, a fiber network switch, fiber cards, fiber cabling and an editing system.

ITEM	PROVIDER	DESCRIPTION
Media Storage	Studio Network Solutions	1 - 32TB SNS EVO Base System with Expansion, backup drives and power supply
Fiber Network	Studio Network Solutions	1 - EVO Fiber Channel Expansion
Fiber Cards	Apple	3 - Dual –Channel 4GB Fiber PCI cards and cabling
Editing System	Apple	1 - Mac Pro Z0P2 tower with custom configuration
Configurations		On site and bench configurations for network infrastructure

III.B Other Alternatives Considered

Alternative 1: Do nothing. The video staff could continue to operate the current equipment, but the storage system will reach capacity in the very near term. This would also not address the bandwidth issue, as noted previously, nor will it address the aged edit system that is experiencing significant performance issues.

Alternative 2: Add additional storage only. This will address the storage issue, but not the bandwidth problems nor the aged edit system that is experiencing significant performance issues.

Alternative 3: Migrate the entire system to a Windows PC-based solution. This would require replacement of all equipment for both edit systems and the purchase of all new software (the current software, Final Cut Pro, is only available for Apple operating systems). Not only would this alternative have a much higher cost, it would also create significant compatibility issues with all current and archived videos.

III.c Major Deliverables and Outcomes

1. Major Deliverables:

- a. Modern, comprehensive video production editing system
- b. Additional media storage for HD and SD videos
- c. Network bandwidth capable to allow multiple consecutive editing sessions.

2. Outcomes

- a. Improved video editing system which will provide high quality videos for many years.
- b. Greater ability to facilitate public involvement as required by federal regulations related to construction project outreach.
- c. Higher capacity to fill requests for video duplication, audio recording and archiving as required by the Arizona State Records Retention Schedule.
- d. Increased storage for compliance with the mandated Retention Schedule.

IV. POLICIES, STANDARDS, & PROCEDURES

IV.A Enterprise Architecture

Yes **No** - Does this project meet all standards and policies for Network, Security, Platform, Software/Application, and/or Data/Information as defined in <http://aset.azdoa.gov/security/policies-standards-and-procedures> as applicable for this project?

If NO please describe NEW or EXCEPTIONS to Standards {Network, Security, Platform, Software/Application, and/or Data/Information}:

V. ROLES AND RESPONSIBILITIES

V.A Project Roles & Responsibilities

Please Identify Project Roles & Responsibilities:

Project Sponsor: Matthew Burdick, Communication Director

Project Manager: Nicole Sherbert, Assistant Communication Director

Business Area Expert: Casey Miller, Video Production Specialist

Please indicate Project Manager Certification:

The **project manager** assigned to the project is:

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

VII. PROJECT TIMELINE

VII.A Project Schedule

Provide estimated schedule for the development of this project. These dates are estimates only; more detailed dates will be required at project start up once the project schedule is established.

Project Start Date: **7/8/2013** Project End Date: **9/2/2013**

III. PROJECT FINANCIALS

Project Funding Details

Select One

Pre PIJ Assessment Funding Details Only

Full PIJ Project Funding Details

VIII.B Detailed Project Financials

VIII.c Funding Source

(Double click on table below – add funding in **whole dollars** and then click outside the table to return to Word doc)

Funding Source Category	Name of Funding Source	Currently Available (\$)		New Request (\$)		Total (\$)
		Development Budget	Operational Budget	Development Budget	Operational Budget	
General Fund						\$ -
Federal ARRA Fund						\$ -
Federal Fund						\$ -
Other Appropriated Funds	State Highway Fund	\$ 39,047				\$ 39,047
Other Non Appropriated Funds						\$ -
TOTAL PROJECT COSTS Should = development and operational totals above		\$ 39,047	\$ -	\$ -	\$ -	\$ 39,047

VIII.D Special Terms and Conditions (if required)

Special Terms and Conditions (if required)

VIII.E Full Time Employee Project (FTE) Hours

Provide estimated FTE Development hours that will be utilized for the duration of the project. Include IT as well as Business Unit FTE hours, if available. Enter into Project Values table on Approvals page.

Total Full Time Employee Hours: 20

IX. PROJECT CLASSIFICATION AND RISK ASSESSMENT

IX.A Rate each question to determine risk level at Low (0), Medium (1), High (2), Very High (3).

Enter Risk Score into Project Values table on Approvals page.

RISK EVALUATION RANGES

- LOW RISK PROJECT 0 - 8
- MEDIUM RISK PROJECT 9 - 25
- HIGH RISK PROJECT 26 - 42
- VERY HIGH RISK PROJECT 43 +

Add Project Risk Details (if required)

PIJ Project Classification & Risk Evaluation					
Risk Factor	Low (0)	Medium (1)	High (2)	Very High (3)	Score
Project Management Complexity					
Project Team Size (# of people)	1-5	6-10	11-15	> 15	0
Project Manager (PM) Experience	Deep experience in this type of project	Some experience in this type of project and able to leverage subject matter experts	Some experience in this type of project and has limited support from subject matter experts	New to this type of project	1
Team Member Availability	Dedicated staff for project activities only as assigned	Staff is in place, few interrupts for non project tasks are expected and have been accounted for	Available, some turnover expected, some interrupts for non project issues likely	Dedicated team not available; staff will be assigned based on capacity	1
# of Agencies involved in Development activity	1	2	3	> 3	0
Vendor (if used)	No Vendor required	Vendor has been used previously with success	Vendor has been used previously with some management support required	New Vendor and/or multiple vendors	1
Project Schedule	Schedule is flexible	Schedule can handle minor variations, but deadlines are somewhat firm	Scope or budget can handle minor variations, but deadlines are firm	Scope, Budget and Deadlines are fixed and cannot be changed	0
Project Scope	Scope is defined and approved	Scope is defined and pending approval	Scope being defined	High level definition only at this point	0
Budget Constraints	Funds allocated	Funds pending approval	Allocation of funds in doubt or subject to change without notice	No funding allocated	1
Project Methodology	Defined methodology	Defined methodology, no templates	High level methodology framework only	No formal methodology	0
IT Solution Complexity					
Product Maturity (if purchased)	Product implemented & working in > 1 state agency or business of similar size	Product implemented & working in 1 agency or business of similar size	Product implemented & working only in an agency or business of smaller size	Product not implemented in any agency or business	0
Solution Dependencies	No dependencies or interrelated projects	Some minor dependencies or interrelated projects but considered low risk	Some major dependencies or interrelated projects but considered medium risk	Major high-risk dependencies or interrelated projects	0
System Interface Profile	No other system interfaces	1-2 required interfaces	3-4 required interfaces	> 4 required interfaces	0
IT Architectural Impact	Follows State IT approved design; principles, practice & standards	New to the State but follows established industry standards	Evolving "industry standard"	No standards, leading edge technology	0
Deployment Impact					
Process Impact	No business process changes	Agency wide process changes	Multi-State Agency process changes	State-wide process changes	0
Scope of End User Impact	Department or Division level only	Multiple Division or Agency wide impacts	Multi-Agency impacts	State-wide impacts	0
Training Impact	No training is required	Minimal training is required	Considerable training is required	Extensive training is required	0
Total Risk Score					4

X. PROJECT APPROVALS

X.A CIO Review

Key Management Information	Yes	No
1. Is this project for a mission critical application system?	✓	
2. Is this project referenced in your agency's Strategic IT plan?		✓
3. Is this project consistent with agency and State policies, standards and procedures?	✓	
4. Is this project in compliance with the Arizona Revised Statutes and GRRC rules?	✓	
5. Is this project in compliance with the statewide policy regarding the Accessibility to Equipment and Information Technology for Citizens with Disabilities?	✓	
6. Is this project mandated by law, court case or rule? If yes, cite the federal requirement, ARS Reference or Court Case.		✓

Details: Provide details related to technology as part of the requirement.

X.B Project Values

The following table contains summary information taken from the other sections of the PIJ document.

Description	Section	Significance
Economic Benefits	VI. Benefits to the State	N/A
Value Rating	VI. Value to the Public	N/A
Total Development Cost	VIII. Project Financials	\$39,047
Total Project Cost	VIII. Project Financials	\$39,047
FTE Hours	VIII. Project Financials	20
Project Risk Factors	IX. Risk Summary	4

X.c Project Approvals

Project Title: Video Production Equipment Replacement

Responsibility	Printed Name	Approval Signature	Date
Project Manager:	Nicole Sherbert		
Agency CIO:	Joe Throckmorton		
Project Sponsor:	Matthew Burdick		
Agency Director:	John Halikowski		

APPENDICES

D. NOI (Web Projects Only)

GLOSSARY

Standard-definition television (SD) (SDTV) is a television system that uses a 480 pixel resolution. The *480* denotes a vertical resolution of 480 pixel high vertically scanning lines, usually with a horizontal resolution of 640 pixels and 4:3 aspect ratios.

High-definition television (HD) (HDTV) provides a resolution that is substantially higher than that of standard-definition television. 1080p, 1080i and 720p denote vertical resolutions and 16:9 aspect ratios.

(Non-linear) Editing System (NLE) is a video or audio editing workstation that performs non-destructive editing on source material. The name is in contrast to 20th century methods of linear video editing and film editing.

Fibre/Fiber (optic communication) is a method of transmitting information from one place to another by sending pulses of light through an optical fiber.

Megabyte (MB) Approximately 1,000 kilobytes.

Gigabyte (GB) Approximately 1,000 megabytes.

Terabyte (TB) Approximately 1,000 gigabytes.

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