

Cloud Migration Enterprise State of Arizona Arizona State Retirement System Change Request

May 25, 2022



Your money. Your future. Secure for your lifetime.

Agency Vision

For the benefit of our members, the Arizona State Retirement System will be a top performing benefit plan administrator with a solid reputation and sustainable plan design.

Agency Mission

Arizona Revised Statutes § 38-712 outlines the purpose of the ASRS:

- Provide an incentive in the recruitment and retention of employees of the highest possible quality.
- Contribute toward providing a total compensation package that is generally equivalent to comparable employment in other public and private organizations in this state.
- Provide a retirement system that encourages employees to remain in service for periods of time that will provide public employers with the full benefit of the training and experience gained by the employees.
- Provide an orderly method of promoting and maintaining a high level of service to the public through an equitable separation procedure.
- Provide a base retirement benefit that is less than one hundred per cent of a member's postretirement income requirements, recognizing that personal savings and social security also contribute toward total post-retirement income requirements.



Project Team Introduction

Roles Present at ITAC

- David King – ASRS Chief Information Officer
- Richard Nacinovich – ASRS Enterprise Infrastructure Program Manager

Project Introduction

Date/high-level overview of the approved original project investment justification (PIJ):

On August 18, 2021, ADOA ASET approved the original project investment justification (PIJ) for the *Cloud Migration Enterprise (CME)* project RT21001.

The CME project objectives are:

- Move ASRS data center to the cloud in compliance with the state's Cloud First Policy directive
- Utilize infrastructure and routing established by the State of Arizona to achieve alignment and security
- Allow staff to meet the same strategic objectives as pre-migration
- Meet established availability objectives
- Cloud operations are entirely supported by TSD FTE staff without reliance on external professional services by October 2022
- Disaster recovery capabilities in the cloud meet ASRS's recovery time objectives (RTO)/recovery point objectives (RPO) for critical applications

The original PIJ spanned August 2021 through June 30, 2022.

Project Change Request Overview

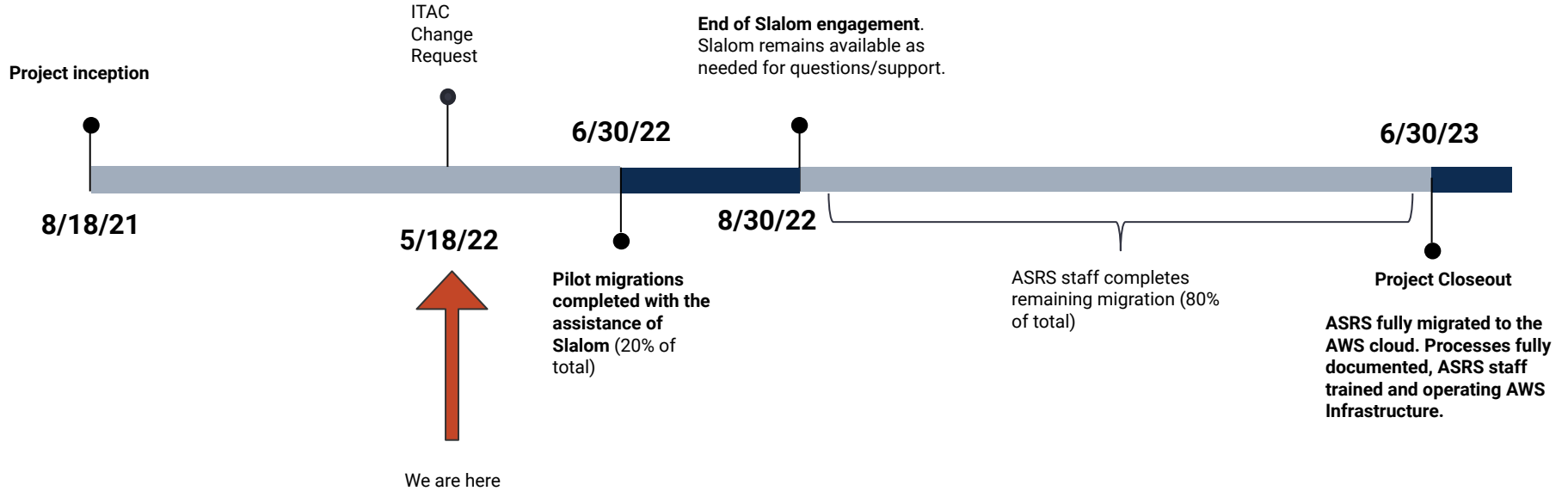
What in the PIJ is changing?:

- ✓ Timeline
 - Change end date from June 30, 2022 to June 30, 2023
- ✓ Scope
 - Add scope for improved design; best-practices assured for confidentiality, integrity, availability, automation, operational effectiveness
- ✓ Budget
 - Overall, small reduction in budget. Slight increase in development cost offset by reduced operational cost in the cloud in FYs 22 and 23.

What initiated this change?:

- ASRS staff was new to cloud technology at project inception, and originally assumed a quick lift and shift was the correct direction.
- Working closely with migration partner, Slalom, and AWS SMEs, the Project Team evolved the design to position ASRS for a cloud migration done *the right way*.
- Detail on these adjustments on Slide 5: Revised Project Scope.
- Project objectives remain unchanged.

Revised Project Timeline



Revised Project Scope (additional scope)

Identify any change in scope and expected benefits:

ASRS doing it right, not fast.

- AWS Well-Architected Framework selectively referenced to ensure cloud-hosted assets are well-managed and protected.
- Infrastructure as Code (IaC) utilized to ensure operational changes are governed by IAC templates with a pipeline to review, approve and deploy changes. Assures immutability, integrity, availability, recoverability, efficiency.
- Internet through Iron Mountain Shared Hosted Data Center (AZNet/ADOA-managed path).
- Enhanced network security built-in for reduced attack surface and threat detection. Purpose-built accounts and VPCs, network segmentation, least-privilege access management/separation of duties, traffic mirroring, log collection and alerting.
- Oracle expertise to ensure migration path is smooth, performant and compliant.

Revised Project Milestones

Milestone Name	% Complete	Original Start Date	Original End Date	Revised Start Date	Revised End Date
Document ASRS IT & InfoSec Requirements and Architecture Decisions	100	7/1/21	8/31/2021	7/1/2021	1/21/2022
Vendor (Slalom) Onboarding, Comms, Discovery, Account Access	100	8/23/2021	9/10/2021	8/23/2021	9/10/2021
AWS Account discovery and analysis, develop future state design, remediation recommendations	100	8/23/2021	10/29/2021	8/25/2021	1/7/2022
AWS Account configuration, landing zone buildout (network, security, etc)	85	9/20/2021	11/19/2021	9/20/2021	6/15/2022
Migration preparation, process design, execute first migration wave (10-20%)	50	11/1/2021	1/21/2022	9/13/2021	8/15/2022
Retrofit IaC for existing AWS resources; Implement drift monitoring/alerting	0	N/A	N/A	5/15/2022	8/15/2022
Final vendor payments	0	6/1/2022	6/30/2022	8/1/2022	8/30/2022
Migration Wave 2 Preparation and Execution (the balance)	0	1/10/2022	6/30/2022	9/1/2022	6/30/2023
Transition current DR to AWS-based solution(s)	0	9/20/2021	6/30/2022	5/15/2022	6/30/2023
Decommission former DR solution - VMware on AWS Cloud (VMC)	0	5/2/2022	6/30/2022	6/1/2023	6/30/2023

Amended Project Costs

Project Costs by Category	FY22	FY23	FY24	FY25	FY26	Total
Professional & Outside Services	\$786,186	\$128,584				\$914,770
Hardware	\$195,480					\$195,480
Software						
Communications						
Facilities						
License & Maintenance Fees						
Other Operational Expenditures	\$0	\$822,296	\$1,075,646	\$1,053,988	\$1,032,331	\$3,984,261
Amended Total	\$981,666	\$950,880	\$1,075,646	\$1,053,988	\$1,032,331	\$5,094,511
Original Total	\$1,023,485	\$1,159,686	\$1,075,646	\$1,053,988	\$1,032,331	\$5,345,137
Difference	\$(41,819)	\$(208,806)	\$0	\$0	\$0	\$(250,626)

Q & A Session

Appendix