AZSITE Consortium Annual Report to the Governor's Office
For the Period July 1, 2022, Through June 30, 2023

INTRODUCTION

In 1995, the State Historic Preservation Office (SHPO), a division of Arizona State Parks, the Arizona State Museum (ASM), the Arizona State University (ASU), and the Museum of Northern Arizona (MNA) signed a Memorandum of Agreement that created the AZSITE Consortium (Consortium), with the goal to computerize and electronically share archaeological and historical site and project files for the State of Arizona. This information is extremely important to private companies and municipal, state, and federal agencies to comply with historic preservation laws.

In 2006, Governor's Executive Order 2006-03 identified the Consortium and the original four founding agencies as the official decision-making and planning body within Arizona's Executive Branch for the AZSITE database and Geographic Information System (GIS) inventory of Arizona's historical and archaeological properties. The integration permits AZSITE users to have up-to-date information on a property's eligibility status to the Arizona and National Registers of Historic Places (A/NRHP), project sponsors, and other related information that was heretofore scattered among many separate locations. This report summarizes AZSITE's activities during the 2022-2023 fiscal year.

AZSITE GOALS

- To serve as Arizona's electronic inventory of known historical and archaeological cultural resources.
- To provide information about previously documented historic and archaeological sites and previously conducted surveys.
- To assist state and local agencies in meeting federal and state mandates.
- To serve as a tool for the preservation of resources through planning, for the review of projects for compliance with federal and state preservation legislation, and as a research tool for qualified researchers.
- To provide data for improved review of state agency planning processes.
- To provide security for data related to location of archaeological sites.

CURRENT MEMBERSHIP

The Executive Order establishes the Board members as consisting of the Director of the MNA, the Chair of the School of Human Evolution and Social Change at ASU, the State Historic Preservation Officer, and the Director of the ASM, or their designees, on indefinite appointment. Traditionally, delegates have served as Board members. Current Board representatives are listed below.

Christopher Caseldine, Ph.D., Curator of Collections and an Assistant Research Professor, SHESC, Chair (2023)
James Watson, Ph.D., Associate Director, ASM, Co-Chair (2022)
Mary-Ellen Walsh, M.A., Cultural Resources Compliance Manager, SHPO, Co-Chair (2022)
Kelley Hays-Gilpin, Ph.D., Curator of Anthropology, MNA

SUMMARY OF ACTIVITIES 2022-2023

July 2022: The AZSITE Executive Board held an open virtual meeting on July 13, during which the Board heard a report on AZSITE finances and a report on the activities of the Ad Hoc Advisory Committee. AZSITE performed database cleaning operations to correct an issue with NRHP eligibility determinations obtained from SHPO as they related to Arizona Department of Transportation (ADOT) site entries in AZSITE.

August – September 2022: AZSITE presented to the Yavapai-Prescott Indian Tribe Cultural Research Department, the Pascua Yaqui Tribal Historic Preservation Office, the Navajo Nation Heritage & Historic Preservation Department, and the Hopi Tribe Cultural Preservation Office to provide an update on recent changes in AZSITE and hear perspectives from these governments. AZSITE attended the Fall conference of the Arizona Archaeological Conference to present on best practices for management of digital cultural resources data, as well as on recent updates to SHPO data in AZSITE.

November 2022: The AZSITE Executive Board held an open virtual meeting on November 2, during which they heard a report on AZSITE finances and a report on the activities of the Ad Hoc Advisory Committee. The Board also voted that Caseldine would be Chair for calendar year 2023. AZSITE's updated Database Use Agreement and Access Policy went into effect for calendar year 2023 applications for access. A test version of AZSITE's updated Attribute Search application was distributed to ASM staff, the Ad Hoc Advisory Committee, and SHPO personnel for review.

February 2023: The AZSITE Executive Board held an open virtual meeting on February 2, during which they heard a report on AZSITE finances, a report on the activities of the Ad Hoc Advisory Committee, and updates on the ongoing redevelopment effort.

April 2023: The AZSITE Board held an open virtual meeting on April 12. The Board heard a report on AZSITE finances, reviewed an updated AZSITE budget accounting for increased personnel costs and University of Arizona administrative fees, and a proposal from the AZSITE Manager to increase AZSITE fees to cover the updated budget. The Board also approved the AZSITE GIS Technician's request to redevelop the AZSITE Public Mapping Application as part of her master's capstone project at the University of Arizona, with final deployment costs to be covered by AZSITE. The Ad Hoc Advisory Committee also delivered a draft AZSITE Data Sensitivity Training to the Board for review and comment.

<u>May 2023</u>: AZSITE was informed by Geospatial Research Solutions (GRS), the organization at ASU that manages AZSITE's database and web servers, that the on-premise data center housing three of AZSITE's four servers would be closing on September 30. This data center had provided free hosting to GRS (and AZSITE). GRS is developing cost estimates for new hosting alternatives, one on-premise solution at ASU and one cloud solution, as well as migration of apps and data to the new servers. Firm cost numbers are not available at this time, but hosting costs will increase significantly for AZSITE regardless of the selected alternative. This increased the urgency of the need to increase user fees.

<u>June 2023</u>: AZSITE distributed the updated Attribute Search Application and Web Mapping Application to a subset of users for beta testing prior to deployment.

AZSITE FUNDING

AZSITE users are required to pay user fees for access to the database; access periods are based on the calendar year, and fees are charged for each individual user account. Figure 1 below summarizes the fee structure used in calendar years 2021 to 2023.

2023 AZSITE Fees

Account Type	Access Term	Web Apps & Data Clips	Mercator GIS Server	$/User
Standard I	CY 2022	Yes	Yes	$550
Standard II	CY 2022	Yes	No	$450
Government Standard I[1]	CY 2022	Yes	Yes	$450
Educational[2]	CY 2022	Yes	Yes	$100
30 Day	30 days in CY 2022	Yes	No	$250

CY = Calendar Year
[1]Government agency personnel only
[2]Educational or non-profit institution students/personnel only

Figure 1: 2023 AZSITE Fees (Per User)

As shown on Figure 1 above, the fee structure charges $550 per user for one year of access with direct GIS access (Standard I account), $450 per government agency user for one year of access with direct GIS access (Government Standard I account), $450 per non-government agency user for one year of access with web-only access (Standard II account), $250 for one user account with 30 days of access within the calendar year (30 day account), and $100 per educational institution user for one year of access with direct GIS access (Educational account).

ANALYSIS OF AZSITE USER PARTICIPATION 2022/2023

In calendar year 2022, AZSITE had approximately 366 individual users, representing the four Consortium agencies, 69 private companies (usually archaeological consulting firms or engineering firms with archaeologists on staff), 20 state and local agencies, 13 federal agencies, four Tribal agencies, two public utilities, and 9 educational or non-profit organizations. About two-thirds of the users had direct GIS access.

In calendar year 2023, AZSITE has approximately 372 individual users. These users represent the four Consortium agencies (51 individual users), 72 private companies (usually archaeological consulting firms or engineering firms with archaeologists on staff; 230 individual users), 20 state and local agencies (excluding consortium agencies; 33 individual users), 14 federal agencies (26 individual users), four Tribal agencies (nine individual users), two public utilities (seven individual users), and 8 educational or non-profit organizations (16 individual users). About 70% of the users had direct GIS access.

Overall, 117 organizational user agreements have been issued for calendar year 2023. Roughly 62% of user agreements were issued to private companies; 34% were issued to local, state, Tribal, or federal agencies, or public utilities; 7% were issued to educational or nonprofit institutions.

AZSITE ACCOUNT BALANCE

Table 1 below summarizes the AZSITE account balance over fiscal years 2020 through 2023.

Table 1: AZSITE Account Balance, FY 2020-2023

FY	Beginning Balance	Income	Expense	Annual Balance	End Balance
2020	$ 207,875.55	$184,290.00	$113,470.38	$ 70,819.62	$ 278,695.17
2021	$ 278,695.17	$142,965.00	$165,093.70	$ (22,128.70)	$ 256,566.47
2022	$ 256,566.47	$137,825.00	$197,963.92	$ (60,138.92)	$ 196,427.55
2023	$ 196,427.55	$141,151.00	$225,718.73	$ (84,567.73)	$ 111,859.82

AZSITE's expenses were higher in 2023 than in 2022, primarily due to the platform redevelopment costs. Staffing increases, pay raises, and increased hosting costs contribute to the increase in expenses between 2020 and 2022.

Figure 2 below shows the AZSITE budget estimated by ASM personnel for FY 2021. At that time, with the anticipated hire of a 0.5 FTE GIS Technician, total personnel costs were roughly $101,000. The total annual budget amount was estmated at about $128,000. Notably, significant administrative fees were overlooked in this budget, including an 11% University of Arizona fee on incoming monies, as well as credit card fees charged on user fee payments made by credit cards. Additionally, the AZSITE GIS Technician was promoted to 1.0 FTE shortly after her initial appointment.

SECTION	Description	FY21 Budget Amount Requested	Notes
PERSONNEL			
Salaries	AZSITE Database Manager (McGowan)	$55,500.00	1.0 FTE
	AZSITE Assistant	$17,500.00	.50 FTE
	ARO Manager (Leone)	$1,200.00	5% effort
	ARO-AZSITE interface (Jenkins)	$356.00	1% effort
	SUBTOTAL	$74,556.00	
ERE	AZSITE Database Manager	$19,425.00	
	ARO Manager	$6,125.00	
	ARO Manager	$420.00	
	ARO-AZSITE interface	$124.60	
	SUBTOTAL	$26,094.60	
	PERSONNEL TOTAL	$100,650.60	
OPERATIONS			
General Operations	3D Cart (credit card payment system)	$300.00	
	ISSR (ASU Servers & Services)	$24,000.00	
	AAG GIS	$65.00	Annual Membership
	ArcView	$150.00	Annual Subscription
	SUBTOTAL	$24,515.00	
Travel/Professional Development	AZSITE DB Manager - Board Meetings	$500.00	in state
	AZSITE DB Manager - GIS Conference	$1,000.00	in/out of state
	SUBTOTAL	$1,500.00	
Other			
	SUBTOTAL		
	OPERATIONS TOTAL	$26,015.00	
	BUDGET TOTAL	$126,665.60	
	UA IDC	$1,646.65	1%
	Grand Total	$128,312.25	

Figure 2: AZSITE Estimated Annual Budget, FY 2021

At their April 2023 meeting, the AZSITE Board reviewed an updated budget prepared by the AZSITE Manager, accounting for increased personnel costs as well as the full scope of administrative fees (credit card fees, 11% on incoming monies, 2% on outgoing monies). This updated budget is shown on Figure 3 below. The annual personnel costs, including an anticipated 5% pay raise required by the University of Arizona for information technology staff, have increased by 60% to about $160,000 in this budget. The updated estimated annual budget is about $219,000, representing an increase of about $90,000 from the FY 2021 estimated budget. Notably, this budget does not account for the anticipated increase in hosting costs of which AZSITE was notified at the end of the fiscal year, as no firm costs were available.

Section	Description	Budget Amount Requested
Personnel		
Salaries	McGowan	$64,703
	Schmidt	$46,766
	Mann	$4,082
Subtotal		**$115,551**
ERE	McGowan	$20,640
	Schmidt	$14,918
	Mann	$1,302
Subtotal		**$36,860**
Personnel Total (5% added)		**$160,032**
Operations		
General	3d Cart	$330
	Make	$150
	GRS Hosting & Maintenance	$24,000
	CC Fees	$5,000
Subtotal		**$29,480**
Travel/PD	Conferences, training	$1,500
Subtotal		**$1,500**
Operations Total		**$30,980**
Budget Total		**$191,012**
	UA IDC (2% on expenditures)	$3,820.23
Grand Total		**$194,832**
	UA 11% on $194,832 income	$21,431.50
Adjusted for UA 11% on income		*$218,912*

Figure 3: AZSITE Estimated Annual Budget, FY 2024

Based on the estimated budget in Figure 3, the AZSITE Manager proposed an increase to AZSITE fees. The proposal is for three successive years of increases to reach an annual revenue of approximately $221,000, assuming that user participation in AZSITE continues at roughly the same levels seen in 2022. The fee increase proposal is summarized in Table 2 below.

Table 2: Fee Increase Proposal, April 2023

Account Type	Current $/User	Proposed 2024	Proposed 2025	Proposed 2026
Standard I	$550	$650	$750	$825
Standard II	$450	$550	$650	$725
Government Standard I	$450	$550	$650	$725
Educational	$100	$110	$120	$120
30 Day	$250	$350	$400	$450

In 2018, the AZSITE Board voted to increase AZSITE fees by 50%, with the increase to be phased in over three years. However, only the first year of increases was implemented, a 20% increase for calendar year 2019. These increases were to be conducted under the old, per-organization fee structure; however, it is notable that the resulting fees would have been similar to the proposed 2026 fees listed in Table 2 for many organizations.

For example, if all three years of the 2018 fee increase proposal were implemented, a 'Small' organizational account (up to three users without direct GIS access) would have cost $2,250, or a minimum of $750 per user. The equivalent under the proposed 2026 fee structure would be three Standard II accounts at $725 each, or $2,175. If all three years of the 2018 fee increase proposal were implemented, a 'Large' organizational account (up to 15 users with direct GIS access) would have cost $8,250, the equivalent of 10 individual Standard I accounts with GIS access under the proposed 2026 fee structure. It is worth noting that, under the old fee structure, many companies purchasing the 'Large' organizational account did so to obtain the direct GIS access that was only granted to 'Large' licensees, and in many cases had fewer than the 15 allowable individual users.

In July 2023, AZSITE will conduct a survey of user opinion of and predicted participation under the proposed fee increase. The results of that survey will be presented to the Board at their third quarter 2023 meeting, when they will vote on the proposal. The anticipated server migration of which AZSITE personnel were notified late in the reporting period will increase annual operating costs, and may result in the acceleration of the fee increase period from three years to two years.

AZSITE WEB APPLICATION REDEVELOPMENT

In fiscal year 2023, AZSITE undertook to redevelop its core web applications, the Attribute Search Application and the Web Mapping Application. Both projects took into consideration years of feedback and suggestions from the AZSITE user community and consortium agencies, as well as input from the AZSITE Ad Hoc Advisory Committee. Redevelopment of the Attribute Search Application was undertaken primarily by AZSITE personnel, with support from ASU GRS personnel. Redevelopment of the Web Mapping Application was undertaken primarily by ASU GRS personnel under the direction of AZSITE personnel. These efforts represented the first significant overhaul of AZSITE functionality in at least 10 years.

Achievements of the Attribute Search Application redevelopment included:
- Ability to search multiple site datasets with one search term;
- Additional query functions and multiple parameter search for the primary AZSITE sites dataset;
- Ability to query the provisional ASM sites dataset;
- Addition of ASU site documents to .PDF library;
- Direct linkage of AZSITE Consortium site documents (from ASM, MNA, and ASU) to site entries;
- Additional query functions and multiple parameter search for the primary AZSITE projects dataset;
- Direct linkage of ASM PRFs to project entries;

- Addition of project type information;
- Addition of project location information;
- Listing of sites recorded for each project entry, including provisional sites;
- Additional query functions and multiple parameter search for the AZSITE references dataset;
- Addition of ASM project reports to the .PDF library;
- Direct linkage of ASM project reports to reference entries;
- Ability to directly search for documents by site or project number;
- Ability to directly query site and project information obtained from SHPO;
- Separation of NRHP Eligibility recorder recommendations and SHPO Determinations; and
- Improved formatting and sorting of data.

Achievements of the Web Mapping Application redevelopment, implemented in the Esri WebAppBuilder Developer Edition framework, included:
- Development of new, high-resolution historical USGS 7.5' Topographic Map basemap tile cache;
- Ability to choose from Esri basemaps;
- Ability to add external data (from web or upload) to the map;
- Improved integration of attribute table with map interface;
- Improved filter and query capabilities;
- Advanced spatial relationship query tools;
- Enhanced print capabilities;
- Enhanced spatial search/geocoding capabilities;
- Integration with .PDF document library with advanced feature pop-up configurations; and
- A new user guide website with a modern interface.

In June of 2023, the new applications were beta tested by a subset of AZSITE users. In July 2023, feedback from the beta test will be incorporated ahead of deployment in early August.

**AZSITE DATA MANAGEMENT AND BACKLOG**

In the fiscal year 2023, AZSITE continued to apply and refine previously developed backlog processing methods. The data backlog consists of 7,877 original site recordings and 2,586 projects submitted to the ASM Archaeological Records Office (ARO) between approximately 2003 and 2017. More recent submissions are handled by the ASM ARO under a different fee structure and workflow and are not available for AZSITE to upload prior to curation. 241 of the backlog site recordings and 37 of the backlog projects are known to be entirely on Tribal land, meaning they will not be added to AZSITE. In the first half of 2020, prior to backlog submissions being made available for AZSITE to upload prior to ASM ARO curation, site center points for original site recordings in the backlog were added to a provisional data layer in AZSITE as an interim measure that would provide approximate site location information to users.

At the beginning of 2020, 121 projects and 528 original site recordings from the backlog had previously been uploaded to AZSITE. By the end of June 2023, 2,421 projects and 7,359 original site recordings had been uploaded. Progress on backlog uploads from January 2020 through June 2023 is summarized in Figures 4 and 5 below. Figure 5 summarizes total uploads over the same period, which includes submissions fully curated under the ASM ARO new fee structure, as well as backlog submissions. At the end of fiscal year 2022, 96% of backlog sites and 95% of backlog projects had been uploaded. The remaining submissions generally lack digital data or some component of the submission, requiring more effort to prepare for upload.
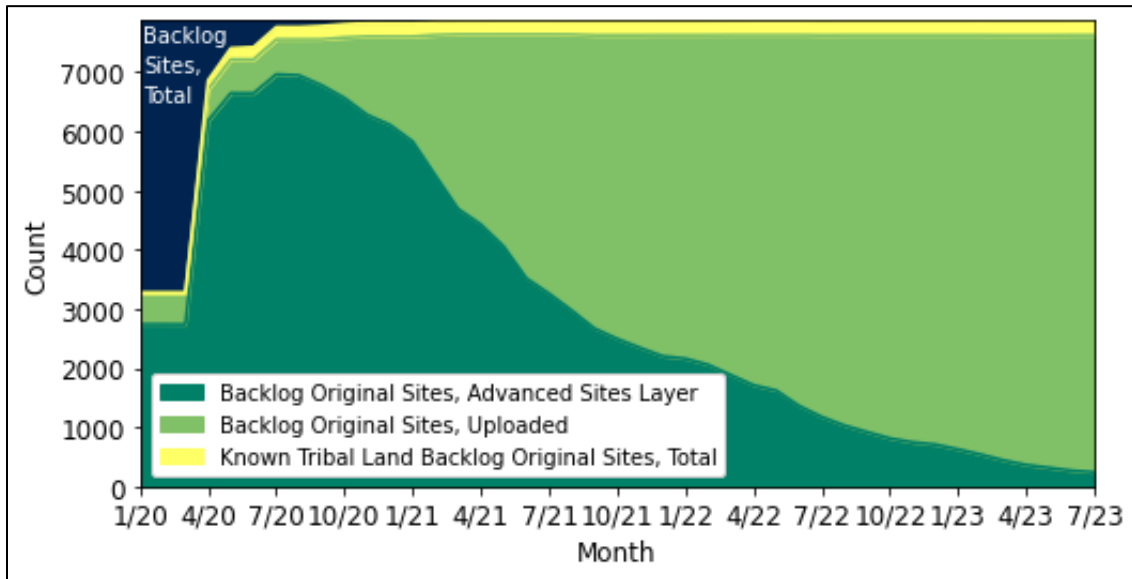
Figure 4: Backlog Original Site Recording Progress, Jan. 2020-June 2023
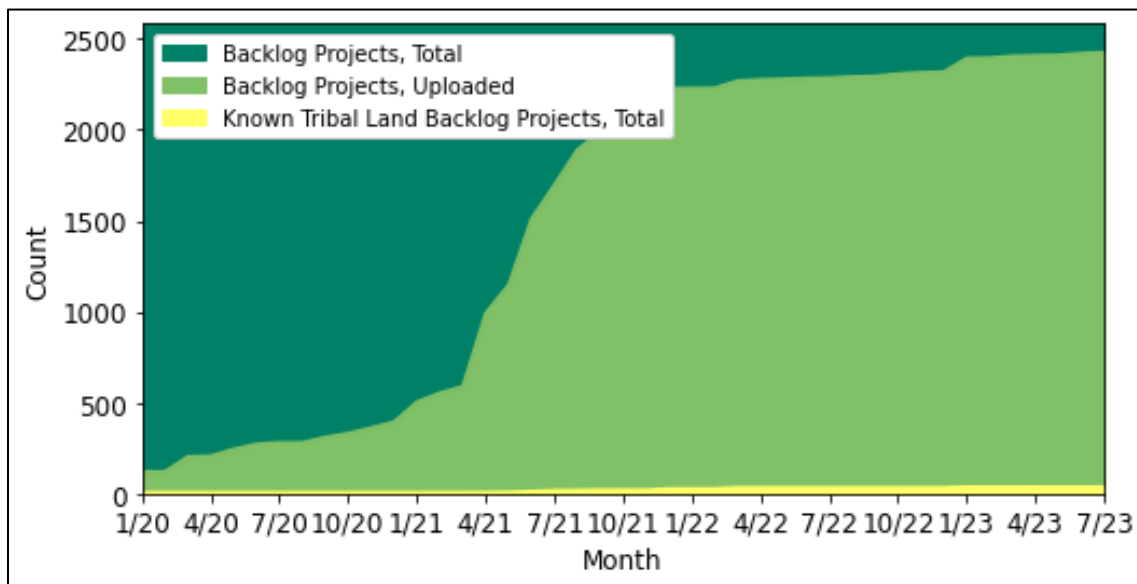
Figure 5: Backlog Project Progress, Jan. 2020-June 2023

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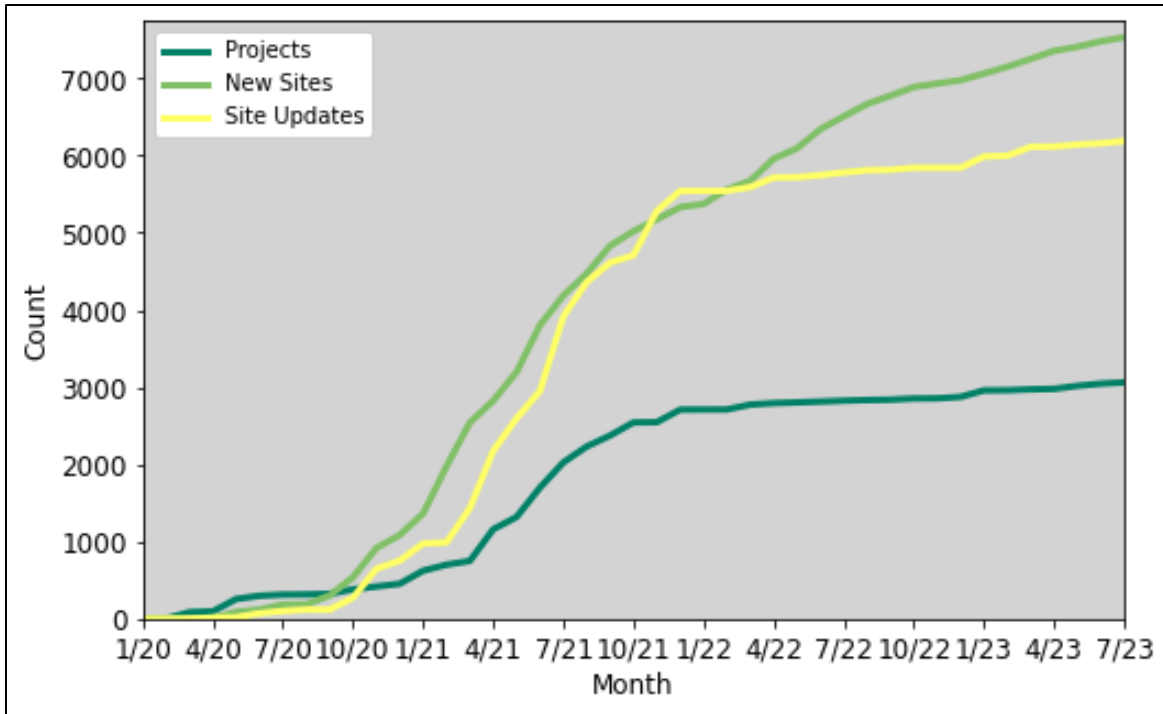
Figure 6: Total Projects, New Sites, and Site Updates Uploads, Jan. 2020-June 2023

Total uploads between January 2020 and June 2023 amounted to 3,044 projects, 7,479 original sites, and 6,158 site updates (Figure 6). Documents uploaded during fiscal year 2023 included 498 ASM Project Registration Forms and 729 ASM Site Cards. 132 fixes to existing AZSITE data were implemented over this period.

In addition, 1,205 ASM project reports and 150 ASU site documents were uploaded to AZSITE's document server and will be available in the new Attribute Search Application when it is deployed in August.

CONCLUSION

AZSITE continued to make significant progress on the backlog over the reporting period, with backlog uploads at 95% or better. We are in the "long tail" of the backlog, where the remaining submissions are more likely to be incomplete or missing digital data. The tools and workflows AZSITE developed to process the backlog are directly applicable to ASM ARO submissions under their new fee structure; these submissions are processed into AZSITE as soon as curation is complete and they are listed as available for AZSITE.

With the backlog of data under control, modernizing the web applications was the next logical point of emphasis for AZSITE. The redevelopment effort undertaken in fiscal year 2023 will allow users to get more out of AZSITE's existing data, while also adding additional, highly valuable documents (ASU site documents and ASM reports), and spotlighting SHPO's NRHP eligibility data. These significant improvements should make it easier for the user community to accept the proposed fee increase in the coming years.

With the recent increases to personnel costs, the need to account for administrative fees, and the anticipated significant increase to operating costs due to the server migration that will occur early in the next fiscal year, AZSITE needs to increase user fees while also pursuing alternative funding sources. As a general strategy, user fees will be used to cover base costs, while grants will be pursued for specific enhancements and developments. AZSITE will research potential grant projects so that we are ready to propose when a well-suited grant is identified. Historically, AZSITE also received significant funding from federal and state agencies through data sharing and other vehicles. AZSITE is conducting outreach to multiple agencies to identify opportunities for collaboration and data sharing that could include funding for improvements to AZSITE data and applications.