NATIONAL ASSOCIATION OF STATE WORKFORCE AGENCIES

Request for Proposals (RFP)

Learning Management System

Issued By:
National Association of State Workforce Agencies (NASWA)

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Bidders Webinar/Teleconference
May 10, 2019
3:00 PM EDT

Proposal Submission Date
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5:00 PM EDT

Introduction

The National Association of State Workforce Agencies (NASWA) is a national organization of state administrators of the publicly-funded state workforce system, including the Workforce Innovation and Opportunity Act (WIOA), employment services, training programs, unemployment insurance, employment statistics and labor market and workforce information. NASWA delivers policy expertise on workforce development, including unemployment insurance and other transitional support, as the voice of state workforce agencies.

NASWA is seeking a new Learning Management System (LMS) to support the delivery of training curricula to diverse audiences across the nation. NASWA's training curricula include courses, modules, and lessons delivered via eLearning, instructor-led training, virtual classes, video, webinar and other learning modalities. The LMS must be capable of hosting online lessons and course materials within an intuitive, user-friendly interface that will be accessed by workforce development staff from across the country.

Background

The National Association of State Workforce Agencies (NASWA) has a long and distinguished history.

It was founded in the depths of the Great Depression in the early years of unemployment insurance and employment service programs. Both unemployment insurance and programs linking workers with jobs have evolved over their histories, and the national organization of state officials who administer those programs has evolved also. However, the role of the organization is little changed. Much as it did in the 1930s, NASWA provides a forum for states to exchange information and ideas about how to improve program operations, serves as liaison between state workforce agencies and federal government agencies, Congress, business, labor, and intergovernmental groups, and is the collective voice of state agencies on workforce policies and issues.

Consistent with its history and purpose, NASWA is committed to providing high-quality training programs and materials to state workforce agencies on a variety of subjects, programs and technologies. The Association is uniquely positioned to facilitate the sharing of promising and emerging practices in workforce development across the nation. In addition, the Association also provides training on new workforce development issues, policies and programs.

Scope of Services

Project Description

NASWA is integrating its training offerings through the creation and implementation of NASWA Learning. Key to the success of NASWA Learning is the identification and procurement of a flexible, scalable, intuitive and comprehensive LMS to serve as the nation-wide training platform for NASWA Learning. The intent of NASWA Learning is to manage the administration, documentation, tracking, reporting, and delivery of education to its learners.

NASWA believes that the LMS platform should enable state staff to access learning opportunities on their own schedule and identify and participate in Instructor Led Training (ILT) events.

Learning opportunities include, but are not limited to:

- Self-paced eLearning;
- Instructor-led virtual classes;
- Webinars;
- Classroom training;
- Asynchronous virtual classrooms; and
- Access to supplemental course materials.

This Request for Proposals (RFP) is intended to procure and implement a Learning Management System that will serve as the primary learner interface with NASWA Learning and its training offerings.

The Association's Responsibilities in the Learning Management System Implementation

NASWA's organizational units have collaborated to determine a comprehensive list of system requirements to be fulfilled by the new LMS.

NASWA will provide the following to the selected vendor:

- Specifications required for the implementation of the LMS system;
- NASWA Style Guide and Logo Specification, including color usage standards;
- Media, such as imagery, icons, and video for branding of NASWA's LMS home page and subpages; and
- Intermittent and final quality reviews by NASWA staff of the implemented system.

Vendor Performance Requirements and Learning Management System Specifications

As part of its technical response, the vendor is asked to describe its capabilities and experience in meeting the specifications called out in the LMS requirements section of the RFP. Requirements are numbered and listed in Appendix A. Appendix B presents a table containing the same numbered requirements. The vendor must complete information within the table and return the completed table as part of its response to this RFP.

Project Management

As part of its response, the vendor is asked to describe how it plans to manage the implementation of the system selected through this RFP. What project management roles are employed by the vendor? For example, is there solely a project manager, or do you also incorporate other staff responsible for implementing specific components of the system?

Indicate project management staffing availability during the implementation of the learning management system. How does the vendor envision collaborating with NASWA's assigned project manager?

See Attachment C, *Project and Implementation Plan Outline,* for a description of the draft plan the vendor will be expected to provide as part of its response.

During the development of the project, the vendor will be required to conduct Weekly Progress Meetings and provide Weekly Progress Reports, and Monthly Status Reports.

Vendor Deliverables

Deliverables required as part of the project award:

1. Project Kickoff Meeting;
2. Project Management and Implementation Plan (described in Attachment C). (See NFR20 and NFR21);
3. Site for testing the LMS Implementation (Sandbox). (See NFR22);
4. Training Plan and Schedule for System Administrators (See NFR25 and NFR26);
5. Training Manuals and Other Materials (See NFR24 and NFR27);
6. Ongoing Progress Reports (Weekly/ Monthly); and

7. Implementation of a fully functioning LMS according to the implementation plan.

Note: The payment schedule for implementation will be negotiated based upon the deliverables in this section.

Preliminary LMS Delivery Schedule

	Deliverable	Format
1	Project Kickoff Meeting	Remote meeting
2	Project Implementation Plan (Described in Attachment C)	SmartSheet, MS Project, MS Excel, MS Word and/or another file formats
3	Testing Sandbox	Access to test site
4	Training Plan and Schedule for System Administrator	SmartSheet, MS Word or another file format
5	Training Manuals and Other Materials	Vendor format
6	Ongoing Progress Reports (Weekly/ Monthly)	MS Word or another file format

Note: LMS implementation must be completed no later than December 31, 2019.

Project Pricing

Please refer to the following table in submitting your cost proposal.

Description of Task/Service	Cost	Comments
Implementation of LMS, which includes branding, configuration, third-party integrations, and data transfer (including courseware, learners, and learning history.)	If you charge an implementation fee, please provide a Firm Fixed Price (FFP), for the following (1) branding and configuration, (2) integrations, and (3) data transfer.	
Hosting Cost, if applicable.	Please provide costs, if any.	
Training System Administrator(s)	Please provide your cost for training, if any.	
Customization of functionality after go-live, such as custom reports.	Please describe how you estimate costs for developing custom functionality.	Indicate cost per labor category.
On-going LMS support for NASWA administrators, after go-live.	Please provide the cost for on-going LMS support for NASWA Administrators, if any.	
License Fees It is estimated that an initial 6,000 user licenses will be needed at the time of implementation.	Provide cost per user per year.	Indicate whether licenses are per user or per active user. Include whether there is a discount across multiple years. Cost proposals should include information and pricing for incremental license increases in bundles, e.g. an additional 500 licenses. NASWA expects the inception of licensing fees to occur after NASWA has accepted the implementation of the LMS.

Description of Task/Service	Cost	Comments
		Please indicate whether your sandbox/test environment includes licensing.
Software maintenance fees, following the implementation period	Please provide the maintenance cost for implementing new versions of the LMS software, if any.	

Note: The vendor is also asked to provide a suggestion or preference for judging scope variations after the award of the contract. The goal is to reach an agreed upon method, which is not onerous for the vendor or NASWA, but that allows the vendor to deliver an equal scope of content to that which is bid within the vendor's RFP response. Should the overall scope of work exceed what has been agreed upon, the vendor will be asked to submit a change order for the additional work. The vendor's response to this question with this RFP will not be part of the consideration for contract award.

Vendor Qualifications

Vendors must demonstrate extensive experience in learning management system implementations for similar scale projects. Though not specifically required, the ideal vendor would be able to demonstrate prior work on a national level. Also, vendor experience in complying with Section 508 of the Rehabilitation Act is required.

Vendors must have adequate staffing assigned to the project including a primary point of contact for the duration of the project.

Place of Performance

Work for this task will be performed off-site at the vendor's location. Most meetings and activities can be managed through conference calls and webinars.

Travel

Travel for the selected vendors, prior to award, will occur at the vendor's expense. Following the award, intermittent travel may be necessary to attend meetings with NASWA project staff. If required by NASWA, travel costs will be reimbursed according to NASWA policies. A maximum of three (3) project review meetings will occur during the lifetime of the contract. These meetings shall occur at a venue selected by NASWA or shall occur virtually.

Project Timeline

It is anticipated that the project will begin by August 1, 2019. The projected timeline shall be determined by the vendor's project and implementation plan, which is anticipated to align with the estimates noted in the **Preliminary LMS Delivery Schedule** section, above.

Proposal Response Requirements and Basis for Award of Contract

Criteria used to evaluate vendor proposals in the awarding of this contract are shown in Attachment B. The responses to the RFP must include (refer to Attachment B):

1. Cover sheet (Attachment A).
2. Cover letter, description of company and qualifications, including a description of your company's financial qualifications, including growth history and viability.
3. Executive summary.
4. Technical response, narrative description and Table (see Appendix B).
5. Draft project and implementation plan and schedule (see Attachment C).
6. Narrative description of client implementations and references, three current clients and descriptions of past LMS implementations. Include a list of clients and the sectors they represent.
7. A narrative description of key staff to be assigned to the project, including, but not limited to, their education, training, job experience, certifications, and areas of expertise.
8. Cost proposal (see **Project Pricing** section).
9. Verification of business status (Minority and/or Woman-owned), if applicable.
10. Statement of Agreement to conform to NASWA's confidentiality requirements as they pertain to lesson content and other proprietary information. (See Attachment D)

Project Payment Schedule and Acceptance

The payment schedule for implementation will be negotiated based upon the deliverables in the section **Vendor Deliverables**.

Acceptance will be based upon implementation of the negotiated technical requirements (see Appendix B) and NASWA's confirmation that learner data has been satisfactorily transferred; LMS features and reports are functioning as designed and agreed upon functionality has been tested and is performing as expected.

Submission Information

Proposals must be submitted electronically to:

Amy Smith, Project Manager
National Association of State Workforce Agencies
444 N. Capitol St. NW, Suite 300
Washington, DC 20001
amy.smith@naswa.org

Proposals must be received by June 7, 2019 by 5:00 PM EDT.

For Additional Information and Clarification

NASWA will hold a vendor webinar question and answer session. This will be the only opportunity for interested vendors to ask questions for clarification on the RFP. NASWA will answer all questions to the best of its ability during this webinar or if necessary through a follow up email to registered vendors. Questions may be submitted in advance via email and will be answered during the webinar. No additional questions will be addressed after the close of the webinar/teleconference call.

Bidders should pre-register for the webinar. To pre-register, follow the instructions provided in the RFP announcement.

Submit any questions by contacting:

Amy Smith, Project Manager
National Association of State Workforce Agencies
amy.smith@naswa.org

RFP Schedule

EVENT	Key Dates
Issue RFP	4/26/2019
Bidders Webinar	5/10/2019
Proposal Due Date and Time	6/07/2019 5:00 PM EDT
Demonstrations of LMS Capabilities by Down-selected Vendors	Week of June 24, 2019
Notice of Intent to Award (estimated)	6/30/2019

Execution of Contract (estimated)	7/15/2019

NASWA reserves the right, at its sole discretion, to adjust the RFP Schedule of Events as it deems necessary. Any adjustment of the Schedule of Events shall constitute an RFP amendment, and NASWA will communicate such to potential vendors.

Selection Procedures

Proposals will be evaluated on the criteria outlined in the Proposal Response Review Criteria table shown in Attachment B.

After an initial review of each of the proposals for completeness, the vendors submitting the most highly-rated proposals will be invited for a web-conferenced demonstration of their learning management system.

Vendors selected to demonstrate their LMS application will be provided with test materials, such as SCORM content packages for upload, sample video file(s), and a minimum list of features that NASWA would like to review.

A panel of key stakeholders, convened by NASWA, will make vendor selection decisions based upon overall best value.

Attachment A

COVER SHEET

Name:	________________________
Contact Person Name & Title:	________________________
Address:	________________________ ________________________ ________________________
Phone:	____________ Fax: ____________
Type of Entity:	________________________ (e.g. individual, corporation, sole proprietorship, public agency, minority owned, woman owned, etc.) NOTE: Bonus points (5 in total) will be awarded to firms who certify their status or the status of any subcontractors as Minority and/or Women Owned Business Entities.

The undersigned certifies that this proposal is submitted in response to NASWA's request for a Learning Management System.

By submitting this proposal, the undersigned affirms to having the staffing, skills, knowledge, software and equipment to provide the services contained therein.

________________________ ________________________
Signature of Authorized Representative Date

Attachment B

Proposal Response Review Criteria			
Section Number	**Section Title**	**Max Points**	**Review Criteria**
1	Cover Sheet (Attachment A)	N/A	• Provide the full legal name of the Contractor who will execute the contract. • Provide specific information concerning the vendor, including: the vendor's legal name, and type of entity. • The cover sheet must be signed.
2	Cover Letter **(Max 2 pages)**	N/A	• Size of company or organization. • Length of time in business. • Include qualifications and a narrative description of the characteristics that set your company apart such as unique examples of service or added value, and any recognition or endorsements that you have received. • Description of your company's financial growth history and viability.
3	Executive Summary **(Max 3 pages)**	N/A	• Provides a clear, concise overview of the proposal.
4	Technical Response **(Max 3 pages narrative response and a completed table referred to in Appendix B.)**	45	• Overall Quality of Proposal. • Demonstrated understanding of the technical requirements. • Clear description of proposed solution(s). • Best overall functionality that address the technical requirements • Demonstrated ability to meet deliverables as sited in the **Vendor Deliverables** section. • Description of the work assigned to any sub-contractors proposed for use on this project and the vendors' past experience with them.
5	Draft Project and Implementation Plan	15	• Confirm in a draft plan, that you will execute the elements of the implementation plan required as a deliverable upon award, as described in Attachment C.

Proposal Response Review Criteria			
Section Number	**Section Title**	**Max Points**	**Review Criteria**
			• Explain that you are prepared to manage the implementation of the LMS in terms of change/scope management, quality management, and risk management. • A clearly described project management structure describing how your management team intends to collaborate with NASWA staff. • Provide approximate timelines along with typical tasks required when implementing your product. • Identify tasks that would be required by NASWA staff during the implementation and the effort that will be required by vendor staff. • Demonstrated understanding of sound project management principles and the capability to apply them to the work of this RFP. • Description of how the work assigned to any sub-contractors will be managed.
5	Proposed Staff	10	• Demonstrated knowledge, skills, and experience of staff proposed to accomplish the work. • Identify the individual to be assigned as the single point of contact for the project.
6	Previous Client Implementations and References **(Max two pages per reference and separate client list).** **Vendors are also encouraged to submit links for**	5	• Provide a minimum of three references that have used your services in the last five-year period. References from similar sized implementations are preferred. • References must include company name, address, contact name, position, telephone number, and the period during which services were provided. • Include description of the implementation for each reference that would include any customizations that were required and any issues the client

Proposal Response Review Criteria			
Section Number	**Section Title**	**Max Points**	**Review Criteria**
	examples of LMS implementations.		encountered and how they were resolved. If possible, include screen captures that reflect the branding. • Include a list of clients and the sectors they represent. • Consideration will be given to vendor's reputation in terms of quality, problem resolution, business control, timeliness, business relations, and customer service.
7	Cost Proposal	25	Cost Summary including: • Implementation of LMS, which includes branding, configuration, third-party integrations, and data transfer (including courseware, learners, and learning history.) • Training System Administrator(s) • Customization of functionality after go-live, such as custom reports. • Costs for licenses (cost per user per year), including incremental license increases in bundles of 500 or more licenses. • On-going maintenance of system following conclusion of implementation.
9	Bonus Points	5	• Documentation of status or subcontractor status as a Minority and/or Women Owned Business Enterprise.
10	Statement of Agreement	N/A	• Statement of Agreement to conform to NASWA's confidentiality requirements as they pertain to lesson content and other proprietary information.

Attachment C

Project and Implementation Plan Outline

As part of this RFP response, the vendor is asked to provide a draft project and implementation plan describing how the vendor plans to manage the implementation of the system selected through this RFP. Please include approximate timelines with typical tasks when installing your product. Identify what would be required by NASWA staff to do in the implementation and what would be done by vendor staff.

The successful vendor will create a finalized project and implementation plan as a deliverable for NASWA approval, including, at a minimum, the sections described in this attachment.

The implementation plan should include:

1. **KICK OFF MEETING**
    a. Identify all vendor Points of Contact (POCs) and roles.
    b. Methods of communications, email, phone, face-to-face, etc.
    d. Format and frequency of regular team meetings.
    e. Format of weekly progress reports.
    f. Format of monthly project status report.
2. **SCHEDULE MANAGEMENT**
    a. Create a project schedule. Within the initial schedule, provide a breakdown for all tasks and the time allocated for individual production tasks.
    b. The vendor is encouraged to indicate the number of hours allocated for each task during the LMS configuration, implementation and testing cycle.
    c. All deliverables in contract must be on the schedule and named the same. Add any additional detail and dependencies as necessary for project tracking.
3. **CHANGE MANAGEMENT/SCOPE MANAGEMENT**
    a. Describe your change management procedure.
    b. If a schedule change is required, the proposed updated schedule must be submitted to NASWA for sign-off.
    c. If a scope change is required that does, or does not, incur a cost to NASWA then the change must be discussed verbally in advance of submitting a formal change request to NASWA.

4. QUALITY MANAGEMENT

a. Propose deliverable review process for use on this project and include in the schedule. Iterative review process will be necessary.
b. Propose process for agreement of acceptance criteria for each deliverable with NASWA, at the start of the project.

5. RISK MANAGEMENT

a. Identify all risks (scope/schedule/cost/staffing/etc.) at outset of project, together with a mitigation or avoidance strategy for each negative risk.
b. Also identify any possible opportunities (‘positive risks’) that may exist and how these may be exploited.
c. Monitor risks during course of project and report status and update of each in status meetings. Newly arising serious risks must be reported immediately.

6. DATA TRANSFER

a. Describe your process and timeline for data transfer from existing LMS, including transferring courseware, learners, and learner history.
b. Indicate required role of NASWA staff during the data transfer process.
c. Explain your data validation procedure.

8. BRANDING AND CUSTOMIZATION

a. Provide samples of branding customizations.
b. Provide description and samples of icon designs and/or visual markers for identification for content organization and other feature identification, if applicable.
c. Describe the degree of customization available as part of your standard LMS offering in relation to NASWA technical requirements.

9. INTEGRATION OF THIRD-PARTY APPLICATIONS

a. Describe the integration available as part of your standard LMS offering in relation to NASWA technical requirements.
b. If custom integration is required, explain your integration process.

10. SANDBOX

a. Describe your sandbox environment that will allow NASWA to test your LMS implementation with NASWA data.
b. Based upon your implementation plan, when will the sandbox be available and how long will it be available to NASWA.
c. Describe your environment that will allow NASWA staff to perform testing of upcoming courseware and/or customizations before they are accessible to learners.

11. TRAINING PLAN

a. Provide comprehensive Administrator training to designated NASWA staff for purposes of administering the system following the conclusion of the implementation project.
b. Describe your plan and the schedule for training NASWA administrators.
c. Describe materials you will provide for learner training, such as job aids, reference guides and/or any other materials, and editable templates that can be modified for learners.

12. STAFFING

a. Describe your process for assigning staff to this project and managing staff turnover/change.
b. NASWA must be notified well in advance of any proposed vendor staffing changes, and a seamless transition to the new staff member be performed by the vendor.
c. Describe any sub-contractors you plan to utilize and how they will be recruited and managed.

13. IMPLEMENTATION COMPLETION AND SUPPORT

a. Assist NASWA in finalization of all deliverable sign-offs; final invoice submissions for implementation costs, if any; and any project implementation completion sign-offs.
b. Describe your procedures for on-going LMS support for NASWA administrators, after go-live. Include methods of communication, response times, availability, and other support standards.
c. Describe the vendor process for handling NASWA requests for adjustments and/or additional custom functionality after go-live.

Attachment D

NASWA Confidentiality Requirements

The selected vendor will be exposed to confidential information belonging to NASWA and confidential information belonging to entities working with NASWA (NASWA's Customers). The term "Confidential Information" means any and all information, documents, training or other materials pertaining to NASWA and its customers, and information, materials, documents, training maintained on NASWA's computer systems, websites, Learning Management System, electronic and print files.

Statement of Agreement to Conform with NASWA Confidentiality Requirements

The vendor agrees that information regarding NASWA and NASWA's Customers that is not generally publicly known or available, whether or not such information would constitute a trade secret under statutory or common law, that is disclosed to or discovered by the vendor during the course of the project proposed in this RFP (hereinafter, "Confidential Information") shall be considered confidential and proprietary to NASWA and to NASWA's Customers, and the Vendor shall maintain all Confidential Information in confidence; shall employ reasonable efforts to ensure the security of the Confidential Information; and shall not disclose the Confidential Information to any third party or use the Confidential Information without the express written consent of NASWA and then only to the extent specified in that consent. Should the vendor receive a subpoena directing disclosure of any Confidential Information, the vendor shall immediately inform NASWA and cooperate fully with NASWA in responding to the subpoena.

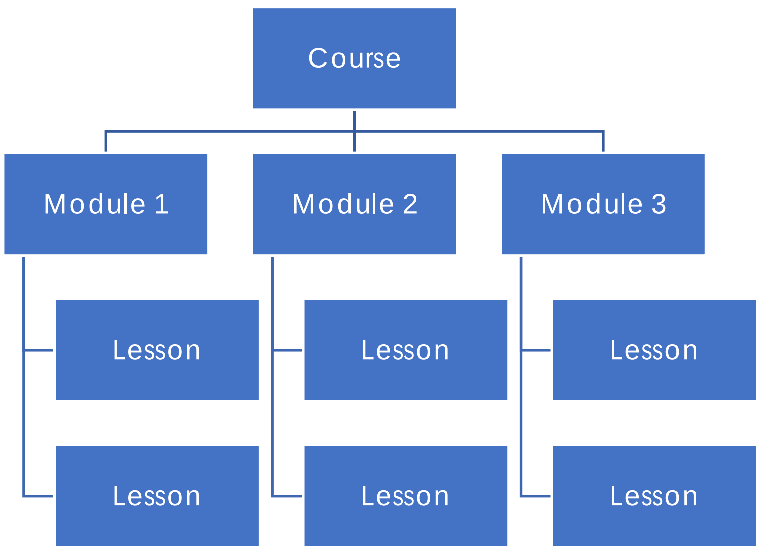
Appendix A

NASWA LMS REQUIREMENTS

NASWA LMS Requirements

Introduction

NASWA defines a **lesson** as a single SCORM package. A collection of lessons, training events, and training materials comprise a **course**. Currently we don't have the capacity to group lessons and materials that are within a course into subsets of **modules.** However, we can visually format lessons and materials under headers within a course, but there is no discrete functionality associated with these visual subsets. Moving forward, grouping lesson content by module is a requirement. At times, a lesson, training event, or training material will stand alone and not be accessed as part of a course. Within your RFP response, please define your terms for organizing training content in relation to NASWA terminology.



Description of Use Cases

Throughout our requirements, we have described our needs or problems that we have in administering an LMS and serving our learners. For each use case, if you have applicable solutions or suggestions on how to address our needs, please describe your approach.

Description of Embedded Questions

Questions do not reflect our LMS requirements, however, we are interested in hearing your responses to questions that apply to your LMS.

LMS Stakeholders

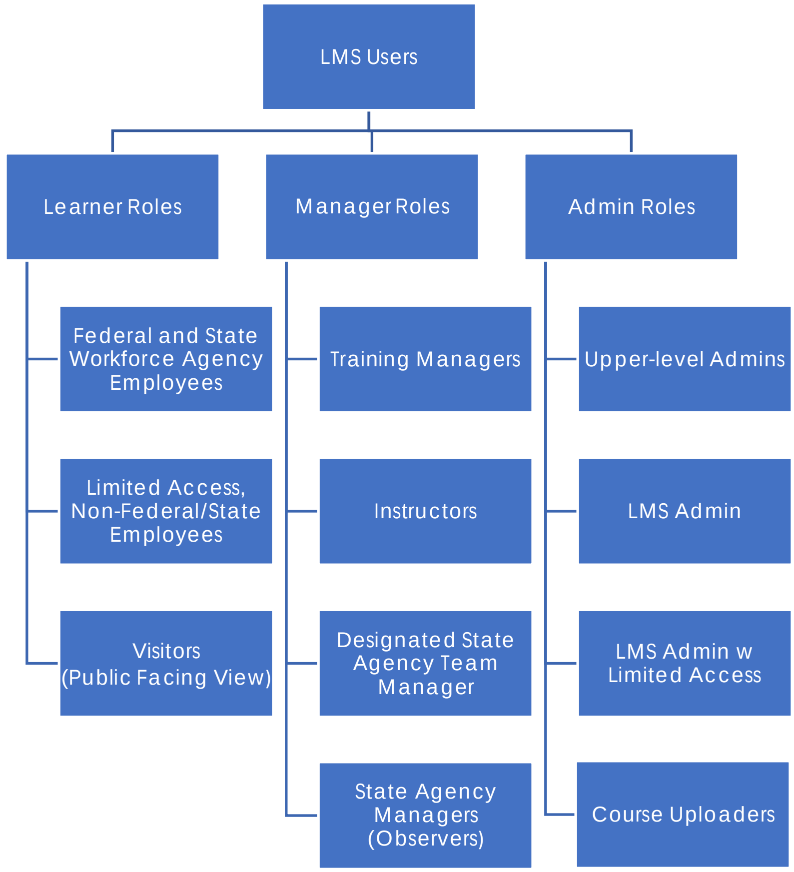
The following table displays stakeholders in NASWA's selection, implementation, and use of its learning management system (LMS).

Stakeholder Name	Organization	Role
NASWA Services (Program Areas) ▪ National Integrity Academy Project Manager (NIA) ▪ Information Technology Support Center (ITSC) ▪ Workforce Information Technology Support Center (WITSC) ▪ State Information Data Exchange System (SIDES) ▪ Interstate Connection Network (ICON)	NASWA	Project Sponsors
Office of Unemployment Insurance	USDOL	Project Sponsor
State Unemployment Insurance Programs (SUIP)	50 states; 3 territories	End Users – Learners

Training content delivered within the LMS includes fraud prevention training sponsored by the USDOL and developed by the NIA. WITSC provides training for staff members who work for State Workforce Agencies and for Workforce Innovation and Opportunity (WIOA) partners. ITSC provides training directed at states who are developing modernized enterprise Unemployment Insurance software applications. The SIDES program area provides training to states implementing software that allows electronic transmission of information requests among state Unemployment Insurance agencies, employers and third-party administration. The ICON program area provides training to states on the purpose, use and implementation of the various ICON applications. Additionally, training on UI programs is provided to states on behalf of USDOL. In the future, training internal to NASWA may be included within the LMS.

Required Roles

The following diagram shows the roles required for users of the LMS. Roles here refer to LMS user types, not to be confused with stakeholders of learner job roles, such as adjudicator or fraud investigator.



Description of Learner Roles

Learners accessing the LMS are primarily employees of **State Workforce Agencies** that include the fifty states and three territories. **Federal employees** of the U.S. Department of Labor and other agencies involved in providing training to the states and territories will all have access to LMS content. Some learners, such as outside vendors or employees of organizations affiliated with state workforce groups that are non-state and non-Federal employees will be provided with **limited access** to LMS content. An outward facing website will allow public access for **visitors** to view available content within the LMS, but not access the training, unless enrollment procedures are followed.

(Q62) **Question: Can you organize learners within your LMS based upon factors such as program area (NIA, WITSC, ITSC, SIDES, and ICON), U.S State, and job role. Will it require a workaround to accommodate this structure within your LMS? Please describe.**

Description of Manager Roles

Manager roles are primarily NASWA staff and state workforce management or designees. **Training Manager** access includes LMS functionality for NASWA staff (NIA, WITSC, ITSC, SIDES, and ICON) who manage instructors and events. **Instructors** are typically a subset of NASWA staff and subject matter experts.

State agency management includes representatives at state agencies referred to as **Designated State Agency Team Managers** who have approval rights and who control other limited LMS functionality. **State Agency Managers** are observers, such as the Chief Lower Authority Appeals officer for a state or the state's UI Directors who view reports.

Description of Administrator Roles

Four levels of LMS administrator roles are required, including **Upper-level Administrators**, who are top-level technical administrator(s), **LMS Administrators** who have control over most LMS functions and assign access to **LMS Administrators with Limited Access** and **Course Uploaders**. **LMS Administrators with Limited Access** are primarily able to view LMS data, access in-depth reports, and extract LMS data. **Course Uploaders** create courses, populate courses with learning objects, and upload SCORM content.

Non-Functional Requirements

(Q1) **Question: What is the platform for your LMS solution - SaaS, PaaS, or Self-hosted (on client infrastructure)?**

(Q2) **Question: If not a self-hosted solution, where can the system be housed, e.g. Amazon Web-services, Azure, Rackspace. If not SaaS, can our users access your system via a VPN?**

- (NFR1) Web-based
  - (NFR2) Support for HTML5

  (NFR3) Do you support Adobe Flash? What versions of Flash?

  - (NFR4) Required browsers (on desktop):
    - Internet Explorer 10 and above
    - Google Chrome
    - Microsoft Edge
    - Mozilla Firefox
    - Safari
- (NFR5) Responsive Design
- (NFR6) Support for desktop, laptop, and tablets
- (NFR7) Support for mobile devices (optional) with iOS / Android
- (NFR8) Please provide your Service-Level Agreement (SLA)
- (NFR9) Virus and anti-malware checker on all uploads into the LMS

(Q3) **Question: What database does your LMS use?**

(Q4) **Question: Have you conducted stress tests against your application? Provide details.**

(Q5) **Question: Will you stress test our organization's implementation prior to release in the production environment?**

(Q6) **Question: Although not a requirement currently, do you support other languages?**

Backups

(NFR10) A documented backup procedure must be implemented and maintained.

(Q7) **Question: What is your backup procedure?**

(Q8) **Question: How often do you back up the system?**

(Q9) **Question: What is your recovery process?**

(Q10) **Question: What is your restoration time?**

(Q11) **Question: How far can you go back to retrieve data?**

(Q12) **Question: What is the granularity of the backup?**

(Q13) **Question: Do you keep your backups offsite?**

Disaster Recovery

- (NFR11) A System Failover (DR) plan must be in place. Describe your disaster recovery plan.

(Q14) **Question: Is your primary production site replicated to another facility?**

Maintenance

- (NFR12) Vendor must practice continuous maintenance activities on the LMS application.

(Q15) **Question: How often do you update the application, i.e. versions and patches?**

(Q16) **Question: Do you provide a maintenance schedule? If yes, how far in advance is the administrator notified? (SaaS and PaaS)**

(Q17) **Question: How much down time annually have you historically had? Do you guarantee a minimum amount of down time?**

Extended Enterprise

(Q18) **Question: In a SaaS solution, is the LMS multi-tenant? If yes, is data isolated from other customers?**

(Q19) **Question: Can each tenant have its own branding? Provide examples.**

Security and Permissions

- (NFR13) Application Authentication and Identity support using LDAP, SAML2, or OpenID.
- (NFR14) FedRAMP (Federal Risk and Authorization Program) Compliant.

(Q20) **Question: Do you encrypt data at rest?**

(Q21) **Question: How will you protect credentials and data transmissions in transit to your application? I.e., Is encryption at the application level (SSL)?**

Compliance & Regulatory

(NFR15) LMS functionality must be designed to be accessible for people with disabilities and verifiably compliant with applicable sections of Section 508 of the Rehabilitation Act of 1973, which defines standards for electronic and information technology and web-based applications.

(NFR16) Vendor will be asked to demonstrate that graphical user interface screens are readable and easily navigable using the latest version of the JAWS or NVDA Screen Reader software.

(Q22) **Question: Has your LMS been tested for accessibility? If so, please describe the results and how you responded to any accessibility issues that were reported.**

- (NFR17) LMS must import content packages published as SCORM 2004 4th Edition.
  - Vendor will demonstrate the import of a NASWA-provided SCORM .zip file.
  - Provide a description of the subset of SCORM data model elements, if any, that are not retained in your LMS database.

  (Q23) **Question: What other SCORM versions your LMS support, e.g. AICC HACP, SCORM 1.2, xAPI?**

Licensing

- (NFR18) Allow purging of licensed learners.
- (NFR19) Provide continued storage of data for purged learners, so data remains should learners be re-licensed.

(Q24) **Question: How is your licensing structured, i.e. concurrent users/named users?**

(Q25) **Question: For named learners, do seats rollover to new learners?**

Initial Implementation of LMS

- (NFR20) Provide a description of your implementation process and timeframe
- (NFR21) Transfer data from existing LMS, including existing courseware and learner data e.g. allow administrator and/or tech team to load past learning history via batch import. Provide process and timeframe for data transfer.
- (NFR22) Provide a sandbox area where the LMS implementation can be tested.

(Q26) **Question: Is there an implementation fee?**

Support

(NFR23) Administrative support by email and, when required, telephone support. For critical matters, response time should be within two hours.

(Q27) **Question: What are your methods of communication, e.g. do you offer e-mail support, live support, phone support and/or web-based support?**

(Q28) **Question: What is the average response time for a priority one support call, during business hours and after business hours?**

(Q29) **Questions: What hours do you offer support?**

Business hours? What time zones?

Do you offer support on the weekends?

24/7, 365 day a year support?

(Q30) **Question: What types of support do you offer, e.g. administrator, learner? What are the fees for each type of support?**

(Q31) **Question: Is support included for a self-hosted solution?**

(Q32) **Question: Is support only for one administrator or if the client has multiple administrators (do they receive support too)? If an additional cost, please state fee(s).**

(Q33) **Question: How many people do you have in support? Where are your support agents based, i.e. located?**

(Q34) **Question: Do you have built-in help? Do you provide contextual help?**

Training

- (NFR24) Provide training manuals targeted for LMS Roles, i.e. learners, managers/instructors, and administrators.
- (NFR25) Provide training for administrators as part of implementation process.
- (NFR26) Provide training for administrators on overall LMS functionality.
- (NFR27) Provide materials for learner training, such as job aids, reference guides and/or any other materials, and editable templates that can be modified for learners.

(Q35) **Question: Do you provide free training? What is included in the "free" training?**

(Q36) **Question: Do you offer training, in addition to free training? What are the costs and what is included?**

(Q37) **Question: Do you offer a Community Site/Knowledge Portal? If yes, what is included?**

Functional Requirements

Types of Content to be Supported by the LMS

These content types must be supported within your LMS:

- (FR1) Self-paced eLearning built in Articulate Storyline and published as SCORM packages
- (FR2) Instructor-led in-person events
- (FR3) Instructor-led virtual classes, synchronous using an external web-conferencing tool, currently Adobe Connect

- (FR4) Webinars using Zoom, registration for synchronous (live) sessions and playback of asynchronous (previously recorded webinars).
- (FR5) Supplemental training materials
- (FR6) Blended learning - mix of online, instructor-led events, webinars, supplemental training materials, external content
- (FR7) Videos (track that a learner has linked to a video housed externally, e.g. Vimeo)
- (FR8) External Content (track that a learner has accessed a linked document housed externally)

(FR9) As previously defined, **courses** contain a collection of lessons, events, and learning materials. A **lesson** is one SCORM package. Lessons and events may also standalone, not as part of a course.

(Q38) **Question: Does your LMS have a document library accessible by learners?**

(Q39) **Question: Does your LMS allow learners to post informal learning?**

(Q40) **Question: What descriptors or identifying information are attached to learning objects and courses (collections of learning objects), e.g. title, description, length/duration.**

Publishing/Uploading Content

- (FR10) Upload SCORM and AICC custom content without vendor assistance.
- (FR11) Upload to a staging area before content goes live.

Customizations

(FR12) Details about required functionality that may require customization are defined throughout this requirements document. If requested requirements are not available, please indicate alternatives for customization that will address NASWA's needs. Also indicate when required customizations will incur costs.

(FR13) The following elements may require customizations:

- Branding, in compliance with the *NASWA Style Guide and Logo Specification*, e.g. GUI, web pages, Certifications of Completion, reports
- Fields
- Reports
- Buttons
- Email Notifications
- Functional Changes to meet requirements

Organization and Display of Content

Catalog

- (FR14) Group lessons, events, and materials (learning objects) within a course.
- (FR15) Group or filter courses by tags assigned by administrators.

- (FR16) Group or filter courses by tracks that reflect a job role or a content topic.
- (FR17) Group or filter courses by program area, i.e. NIA, ITSC, WITSC, SIDES, ICON.
- (FR18) Group by delivery method, e.g. instructor-led event, online
- (FR19) Display learning objects in multiple courses and tracks.
- (FR20) Display catalog on public site.
- (FR21) Store selected catalog objects within a learner site.
- (FR22) Link to catalog or courses, when URLS are embedded within emails.

(Q41) **Question: Does your content catalog identify new, popular or featured content?**

(Q42) **Question: Do you offer pre-built courses to your customers that integrate with your LMS at no additional charge, e.g. human resources topics like behavior in the workplace?**

(UC1) Use Case (Filter Catalog by Program Area): National Integrity Academy (NIA) learners may see NIA content for which they are approved, but cannot see ITSC, WITC, SIDES and ICON content. WITC, SIDES and ICON learners should only be able to view their program area's content. Some content may cross over program areas. ITSC learners may see content for all content program areas, unless that content requires supervisor approval. How would your LMS handle this?

(UC2) Use Case (Visually Distinct Programs Areas): Content in the separate NASWA program areas need to be visually identifiable as being associated with each program area. How would your LMS handle this?

(UC3) Use Case (Visually ID Course Learning Objects): We may like to visually identify the multiple learning objects (lessons, events, materials) in a course. For example, all course learning objects would be marked with a symbol or color to identify them as being part of the same course/curriculum. In some cases, learning objects are used across multiple courses/curriculum, so when they are not identified as being with a course/curriculum or, if the also lesson stands alone as an object, the visual cue would be removed. Can your LMS provide these needs?

Search Functionality

- (FR23) Search tagged content. Content tagged for searching and reporting, would include courses, lessons, materials.
- (FR24) Search functionality allowing learners to find specific courses, lessons, materials, delivery format, based on keywords, title, course description, job roles, and other tagged identifiers.
- (FR25) Enter search parameters within an easy-to-use search interface.
- (FR26) Display search results in an easy-to-interpret format.
- (FR27) Provide search results as permissions-based, i.e. learners can only see information they have permissions to access, via job role or other group assignments.

(Q43) **Question (Basic/Advanced Search): Do you provide basic and advanced search functionality? Please describe.**

(Q44) **Question (Search on SCORM metatags): Does your search functionality, search upon SCORM keyword metatags imported from SCORM packages?**

Public-facing Home Page

- (FR28) A public-facing home page should be customizable and branded for NASWA. State whether it's possible to brand the home page with a custom NASWA video.
- (FR29) Learners who are not licensed users with the LMS will view a public-facing LMS home page.
- (FR30) Display public view of course catalog with search functionality.
- (FR31) Allow visitors to request enrollment into the LMS.
- (FR32) Display announcements.

(UC4) Use Case (Access Catalog from Public Site): Learners enrolled within the LMS will access the internal catalog. However, visitors may access the catalog from a public-facing site and send courses that interest them to a "favorites list." Upon selecting a course or an event from the list, the visitor is prompted to enroll. If a visitor enrolls, the "favorites lists" is saved to his or her learner site.

Learner Site

(FR33) A "learner site" as described within this LMS is an area where learners may access information specific to them. Please describe how learners access and interact with the following information with your LMS.

- (FR34) Access personal training information by licensed learners, likely from a learner site.
- (FR35) Display a collection of training content selected from the catalog by learners within learner site.
- (FR36) Allow learners to enroll, or request enrollment in course, or cancel their enrollment (see Enrollment section for more information)
- (FR37) Display training content within the learner site assigned or recommend by state personnel at the direction of state management or by LMS administrators.
- (FR38) Display assigned or recommended content on the learner site based upon the learner's role.
- (FR39) Display training materials accessed and downloaded by learners within the learner site.
- (FR40) Review learning history/completed work by learners.
- (FR41) Download learning history/transcript by learners.
- (FR42) View and download certificates of completion by learners.
- (FR43) Identify and display system-recommended/suggested courses on the learner site based upon learner job role(s).

- (FR44) Provide ranking for courses, events, and instructors, e.g. assign numbers of satisfaction stars.
- (FR45) Display learner training progress and completions by course, module, and lesson.
- (FR46) Notify learners, when they are wait-listed for registered events (see Event Management and Event Registration section for more information).
- (FR47) Provide learner with ability to request that prerequisites attached to learning objects be waived from the learner site.
- (FR48) Display announcements.

(Q45) **Questions: Describe whether there is a learner site in your LMS. For example, is the learner site a portal or a dashboard? What information is displayed? How does the learner access his or her learner site – e.g. is it displayed upon logging in to the LMS or do they navigate to the site?**

(UC5) Use Case (Push Filtered Content to Learner Profile): Learner role and/or group information in the learner profile can be used to assign course content. Content would be tagged accordingly. If the learner's role is Adjudicator then, Adjudication content is pushed to that learner. As an alternative, a message could notify learners of content that is relative to them.

Announcements

- (FR49) Create, modify and post announcements on Public-facing Home Page.
- (FR50) Create, modify and post announcements on learner sites.

Learner Profile

- (FR51) Establish a learner profile when a learner enrolls within the LMS.
- (FR52) Query the learner upon enrollment for required and optional information and save to learner profile.
- (FR53) Provide a template that delineates information to include profile query; the template must be configurable by LMS administrators.
- (FR54) Allow learner to view their profile at any time.
- (FR55) Allow learners to view a subset of the learner profile of others (some information will be private). For example, a state employee from one state may want email addresses for employees from other states with a similar job role.
- (FR56) Identify learners with single or multiple job roles.
- (FR57) Display content within the learner site based on the job role(s) identified by the learner in their learner profile.

(Q46) **Question: Can a learner have more than one role?**

Enrollment

- (FR58) Collect enrollment information from the learner upon his or her request for access to the LMS.
- (FR59) Store enrollment information in a learner profile.

(Q47) **Question: If enrollment information is stored separately from a Learner's profile, can it be viewed and edited by the learner and administrator?**

(UC6) Use Case (Self-Enrollment from Public Site): New learners will look at LMS catalog from a public-facing site. Upon choosing training content, the learner will be prompted to enroll in the LMS. Learner will complete a learner profile form in advance of being provided credentials for single sign on (SSO). How does your LMS handle SSO?

(UC7) Use Case (SSO): NASWA requires the learners be provided with SSO credentials across applications/sites. NASWA relies on integration with Active Directory for SSO access to its current LMS. How would your LMS handle SSO?

- (FR60) Attach the requirement for Supervisor approval before learners can access some courses. Supervisor approval is not required for all courses.

(Q48) **Questions: How does your LMS handle Supervisor approval? Is Supervisor approval addressed during the LMS enrollment process or is it addressed at the course level? Does the learner indicate his or her supervisor's name and contact information during the enrollment process? Does the LMS allow supervisor information to be updated?**

- (FR61) Allow Administrator to create mass enrollments.

(UC8) Use Case (Mass Enrollment): A state representative from Pennsylvania requests that 300 Pennsylvania state employees be registered in the LMS, without requiring self-enrollment. How does your LMS handle this? How can learner profile/enrollment data be entered when learners are mass enrolled?

Event Management and Event Registration

(FR62) Registration refers to learners registering for events, such as in-person classroom training, Adobe Connect virtual training, or Zoom webinars.

- (FR63) Create an event and instances of that event; define properties, e.g. date and times, location, maximum class size, ability to wait list
- (FR64) Create an event as a standard template and then create multiple instances of that event, e.g. over multiple days, times, and locations.
- (FR65) Override maximum class size by Instructors
- (FR66) Accommodate different time zones for live events
- (FR67) Assign instructors to an event. If possible, assign multiple instructors to an event.
- (FR68) Allow mass registration for events by LMS Administrators
- (FR69) Allow attendees to register, modify registration, and unregister for events
- (FR70) Specify end date for learner enrollment and changes to enrollment status (self-register, unregister).
- (FR71) Create approval process for courses within the LMS catalog for all courses, including external courses

- (FR72) Send automated confirmation reminder notices by email for events via email/calendar
- (FR73) Provide wait listing:
  - Automatic wait list functionality, i.e. for an event that becomes filled
  - Automatic wait list adjustment–learner at top of waitlist is automatically enrolled when a space becomes available)
  - Management of the wait list and roster (administrator only)
- (FR74) Sign up for an ILT without first signing into the LMS. (Signup for the event on a public facing site without signing in to the LMS.)
- (FR75) Pass learner registration for events from the LMS to the event application and pass attendance data back to learners' records in the LMS using an API for Adobe Connect and for Zoom.
- (FR76) Delete registrants for an event after the event has taken place.

(Q49) **Question: How does your LMS handle event registration?**

(UC9) Use Case (Email Links to Events): Learners receive an email notification with a link to register for an event. Upon clicking the link, the learner is taken to the event within the LMS to allow them to register. If the event is part of a course that requires supervisor approval and the learner has not yet enrolled in the course, the learner is asked to register for the course. If the learner does not have an LMS license, instructions for enrolling are provided. Otherwise, the learner can choose to immediately register for the event.

Calendar

- (FR77) Provide a calendar that displays all events.
- (FR78) Filter calendar listings by properties, e.g. program area.
- (FR79) Enroll in events from within the calendar, e.g. learners click on any event listed on the calendar to register.
- (FR80) Provide calendar view configured to display learner events on the learner site.

(Q50) **Question: Does your LMS calendar feature save event registration to external calendars, such as iCal in Outlook, Gmail, and other internet e-mail platforms?**

(Q51) **Question: What views does your calendar display? What other functionality does your calendar provide?**

Online Training (eLearning)

- (FR81) As called out in the Specification Section of this requirements document, LMS must minimally be able to accept SCORM 2004 4th edition content. Vendor must demonstrate the upload of a sample NASWA SCORM package.

(Q52) **Question: What descriptors or identifying information are attached to online lessons? Are the descriptors separate and in addition to the descriptors passed from the SCORM manifest?**

(UC10) Use Case (Lesson Length): Learners want to know how long a lesson will take to complete, without opening the actual lesson to view estimated completion time. Does your LMS display completion times for lessons, for course, or for other non-SCORM learning objects?

(Q53) **Question: What data which is available in a SCORM manifest is stored in your LMS database?**

(Q54) **Question: Does your LMS have canned reports and/or views of SCORM manifest data?**

- (FR82) Provide Test Item Analysis data, i.e. test item data passed from SCORM parameters must be viewable for trainers and administrators to evaluate percentages of incorrect answers per test questions across an audience.
- (FR83) When exiting a lesson, a learner closes the lesson by using exit functionality within the lesson itself. If the lesson has not been completed, it is automatically bookmarked. If the lesson has been completed, as defined by the lesson settings, exiting the lesson reports completion to the LMS. In other words, separate LMS button functionality is not necessary.
- (FR84) Allow administrators to view courses uploaded to the LMS, before making them visible to learners.

Prerequisites

- (FR85) Provide two levels of prerequisites:

  (1) prerequisites among courses, e.g. Fraud Course is a prerequisite for the Fraud Continuing Education course.

  (2) force the order of viewing learning objects within a course

- (FR86) Allow learners to request that certain prerequisites be waived. (This requirement is also noted with the learner site description.)
- (FR87) Allow the administrator to override prerequisites for individual learners or groups of learners.

(UC11) Use Case (Prerequisites): A course contains multiple types of learning objects. We would like to allow: a forced order of course objects; no forced order; and/or a mixture where certain objects of a lesson have a forced order, and others do not. For example, a course has several introductory online lessons which are prerequisite to attending an event. Additional learning objects should then be accessible after the learner attends the event; in other words, the event is a prerequisite for accessing additional lessons. (The administrator must have the flexibility to override prerequisites.)

(UC12) Related Use Case: When prerequisite learning objects are overridden by an administrator, the learner does not receive a completion status for the course, unless the learner eventually goes back and completes the overridden learning objects.

However, the administrator can opt to manually assign a learner's course status as complete, without the learner completing the waived learning objects.

(Q55) **Questions: Can assigned prerequisites vary depending on a specific user role or by U.S State? If so, can we assign those prerequisites in bulk, rather than one learner at a time?**

Certificates of Completion, Management & Tracking

- (FR88) Provide certificates of completion when learner completes certain courses (groups of learning objects), stand-alone lessons, or events that are not associated with a course.
- (FR89) Identify which learning objects will generate a certificate of completion (preference set by administrator).
- (FR90) Allow custom certificates to be designed/modified by Administrator. Editable templates are preferred.
- (FR91) Pre-populated content on certificate of completion from the LMS database, minimally with learner name, course name, and date of completion.
- (FR92) Custom certificates can be attached to a course or a stand-alone lesson.
- (FR93) Ability to automatically award a certificate, once course/content is complete. Learner receives immediate visual notification on learner site and option email.
- (FR94) Display, print, download certificates completed on the learner site.
- (FR95) Email the learner's supervisor a copy of certificate generated by learner or system.
- (FR96) Allow trainers and supervisors to download certificates.
- (FR97) Display a report of learners who have earned certificates for courses.

(Q56) **Question: What features are provided in your LMS' certification functionality?**

Email Notifications / Alerts

- (FR98) Integrate email notification with NASWA's email server or secure NASWA-provided external SMTP server
- (FR99) Create, edit, and manage content of notification messages.
- (FR100) Create email notifications based on group or learner profile, e.g. for announcements.
- (FR101) Send email notification of supervisor approval for learner access to requested course(s).
- (FR102) Send email confirmation after learner registers for events.
- (FR103) Send email notification of event wait listing status.
- (FR104) Send auto-reminder email for upcoming events.
- (FR105) Generate custom survey email notifications at multiple specific times after course completion (not required for all courses). (See Survey section for more details.)

- (FR106) Send email notifications to learners when certificates of completion have been earned.

(Q57) **Question: What email notification features does your LMS provide?**

(Q58) **Question: Does your LMS integrate with a third-party email service, such as Constant Contact or MailChimp.**

(UC13) Use Case (Enrollment Notification): A learner enrolls and is approved for LMS access, or an administrator enrolls a group of learners within the LMS. The learner should automatically be sent a welcome email with credentials or the administrator should be able to trigger a batch of emails for learners, which contain each learner's credentials. With current SSO requirements, this is a manual process using mail merge.

Surveys

(FR107) NASWA regularly provides surveys to multiple audiences and performs extensive analysis of survey data. We currently use two commercial survey products. We are interested in any survey capability provided within your LMS but anticipate that we are more likely to require integration with third-party software.

- (FR108) Integrate with a survey application, specifically Survey Gizmo and/or SurveyMonkey.
- (FR109) Generate custom survey email notifications at multiple specific times after course completion (not required for all courses).

(UC14) Use Case (Multiple Survey Emails): Upon completion of some courses an email needs to be generated at the completion of the course and sent to the learner asking them to complete a survey. The survey link is embedded within the email. A second email is automatically sent to the learner at a specified time after the first survey request (usually 8 weeks) providing a link to another survey. Can your LMS automatically generate these email notifications?

(UC15) Use Case (Survey Courses in Development): During the course development process, lessons are posted for learners, e.g. 5 of 10 lessons, on a rolling schedule. We would like to email learner at differing intervals during the course development process as they complete modules and lessons. Emails will contain links to surveys.

(UC16) Use Case (Event Surveys): Upon completion of a virtual event, an email should be sent automatically to attendees that contains a link to a survey. For in-person events, the email should be manually triggered.

(UC17) Use Case (Survey/LMS Data Analysis): One of the program groups performs a robust evaluation process looking at data collected using external survey software tools (Survey Monkey and Survey Gizmo) as well as LMS data, to evaluate training outcomes. Evaluations are performed on a planned and *ad hoc* basis and generates several reports. We are looking for a way to minimize our current manual labor intensive and time-consuming evaluation process. Could your LMS help automate this process by integrating with external tools or using a survey tool that is native to the LMS?

Built-in Tools / Integration with Apps

- (FR110) Link to other systems using APIs and web services (open architecture).
- (FR111) Link to surveys and survey management applications, specifically Survey Gizmo and/or SurveyMonkey
- (FR112) Exchange data with Drupal-based and SharePoint-based sites via API integration, e.g. scheduling and course information.
- (FR113) Integrate email notification with NASWA's email server or secure NASWA-provided external SMTP server (also listed in Notification section).
- (FR114) Integrate with a business intelligence/business analytics tool, e.g. Microsoft BI or Tableaux (see Reporting/BI Tool sections).
- (FR115) Integrate with web-conferencing platforms, i.e. Adobe Connect and Zoom (virtual classrooms).
- (FR116) Provide analytics data for login information, e.g. who logged in and when they logged in.

Social Learning Requirements

(FR117) NASWA would like to implement social learning features and are open to hearing about the types of features provided within your LMS.

- (FR118) Provide social learning capabilities, such as chat rooms, discussion boards, workspaces, and/or threaded discussion forums.
- (FR119) Allow learners to post questions and comments on topics in a social area and respond to other learners.
- (FR120) Create communities across all program areas by topic; create communities tied to each program area.
- (FR121) Create communities tied to a specific course, e.g. learners accessing Legislative training may post questions and comments that may only be viewed by others taking that course.
- (FR122) Social areas are moderated by an Administrator.

Reporting / Business Analytics

Reports

- (FR123) View real-time reports
- (FR124) View *ad hoc* reports
- (FR125) Create and filter reports by date range, job role and other learner profile data, program area, U.S. state, course, learning objects and training delivery type, and other database fields.
- (FR126) Create custom reports and/or alter "out-of-the-box" reports.
- (FR127) Print, download, and export reports. Export data as tab delimited .xls, .csv

- (FR128) Schedule reports which are subsequently sent via email.

(Q59) **Question: How does your system preserve custom reports during system upgrades?**

Administrator Reports:

- (FR129) Display training progress and completions by course, module, and lesson and sort by state and/or job role.
- (FR130) Display Test Item Analysis Reports to identify percent of current responses for individual test questions
- (FR131) Display Learner enrollment reports within the LMS and enrollment within courses.

(UC18) Use Case (Analysis of Data from Multiple Sources): A series of reports for management correlating information from various data sources. NASWA would like to reduce the manual processing of creating required reports. Please describe possible integration of this data through your LMS. Data includes:

- Results of learner satisfaction surveys within Survey Gizmo and resulting Survey Gizmo course evaluation summary reports.
- Learner profile data from an external Drupal website (enrollment form data), completed prior to LMS enrollment. This includes job roles and length of experience within their state agency.
- Course progress and completion data from an LMS,
- The date credentials are assigned and last learner login date; data is currently accessed from Active Directory logs.

Instructor Reports:

- (FR132) Display reports of learner enrollments for events.

Learner Reports:

- (FR133) Display list of courses completed and in progress (learner history) accessible from learner site.
- (FR134) Display list of certifications of completion accessible from learner site. (Not all courses issue certificates.)

Integrated Business Analytics Tool

(FR135) Integrate all reporting data from the LMS with a 3rd party database, such as Microsoft Power BI or Tableau, if the LMS does not provide analytics functionality.

(FR136) If your LMS provides analytics functionality, it is required to:

- allow users and report writers to see and access information in simple business language, without having to comprehend the complexities of the underlying data or database

- allow creation of user-configurable dashboards for administrator and manager roles that display visual representations of data
- allow drill-down within dashboard views
- map and visualize data in geographical formats
- use conditional formatting to set data alerts, which highlight data exceptions

Administrator Features

Upper-level Administrator

Allow Upper-level Administrators to:

- (FR137) control and manage nonfunctional requirements
- (FR138) direct implementation of LMS on behalf of NASWA stakeholders
- (FR139) manage activities related to integration with APIs to external applications
- (FR140) manages decisions related to upgrading LMS versions
- (FR141) accesses LMS Vendor top-tier support for addressing issues

LMS Administrator

Allow LMS Administrators to:

Related to Assigning Permissions:

- (FR142) create and assign system roles, e.g. Manager, Instructor
- (FR143) specify a subset of functionality available to the LMS Administrator with Limited Access and the Course Uploader roles

Related to Courses / Online Training:

- (FR144) upload SCORM and AICC custom content without vendor assistance
- (FR145) assign course properties (e.g. duration, description, tags)
- (FR146) identify prerequisites within and among courses
- (FR147) disable a course without removing it from the LMS
- (FR148) create, modify and cancel a course
- (FR149) create/design certificates of completion and assign them to courses.

Related to Catalog:

- (FR150) maintain catalog and tag catalog entries

Related to Search:

- (FR151) tag learning objects for use in search functionality
- (FR152) tag courses with job roles

Related to Public-facing Home Page:

- (FR153) create and modify the public-facing home page

Related to Learner Profiles and Learner Site

- (FR154) create and modify the learner site
- (FR155) assign or change information within individual learner profiles, e.g. job roles, U.S. state, or information previously populated by the learner.
- (FR156) assign or change information within learner profiles to groups of learners, e.g. job roles, U.S. state
- (FR157) assign learners to program areas
- (FR158) assign learners to supervisor-approved courses (by-pass supervisor approval)
- (FR159) manage a learner's training record by marking any course or learning object as complete, in-progress, or incomplete.
- (FR160) batch upload learners for enrollment into LMS
- (FR161) export learner records from LMS, e.g. .xls or .csv

Related to Announcements:

- (FR162) create, modify and post announcements on public-facing home page / learner site

Related to Enrollment:

- (FR163) manage learner enrollment within LMS
- (FR164) mass enroll learners in LMS

Related to Event Management:

- (FR165) manage registration functionality
- (FR166) create, modify, wait list, and cancel instructor-led events
- (FR167) create, modify, wait list, and cancel virtual events using Adobe Connect and Zoom APIs
- (FR168) track attendance (e.g., no show, cancelled, attended) for all events

Related to Calendar:

- (FR169) manage calendar and calendar events

Related to Prerequisites:

- (FR170) assign prerequisites to courses and course content
- (FR171) manage exceptions to prerequisites

Related to Certificates of Completion:

- (FR172) create and manage certificates of completion
- (FR173) assign certificates of completion to courses

Related to Emails and Notifications

- (FR174) create, modify, and trigger emails.

Related to Surveys:

- (FR175) creates and manage assignment of survey email notification to courses
- (FR176) support the reporting of survey data

Related to Social Learning Requirements:

- (FR177) create, populate, and monitor social learning features

Related to Reports

- (FR178) access administrator dashboard (see business analytics requirements)
- (FR179) create and view real-time reports
- (FR180) create and view *ad hoc* reports
- (FR181) filter reports by date range, job role and other learner profile data, program area, U.S. state, course, learning objects and training delivery type, and other database fields.
- (FR182) create custom reports and/or alter “out-of-the-box" reports.
- (FR183) print, download, and export reports. Export data as tab delimited .xls, .csv
- (FR184) schedule reports which are subsequently sent via email.

(UC19) Use Case (Multiple Instances of a Single SCORM Object): When a training object, e.g. a SCORM object, is used across multiple courses. We prefer that the SCORM object is stored once and is pointed to multiple times. Is it also possible to keep a prior version of the SCORM object for some courses, while other lessons use a revised version? If you upload new training object, do learners who have started a course show the new version of the learning object or does it show the earlier version; when learners access a course for the first time, will they be shown the newer learning object? If learner who has accessed a course and sees the older version of a learning object, upon completion of the course, can they review the course and be shown the newer version of the learning object.

(UC20) Use Case (New Content in a Completed Course): Learners have completed a course. Administrator adds additional lessons and content to that course later. Learners must be able to access the new content.

Use Cases related to Administrator Content Management

(UC21) Use Case (Optional Courses): When all required learning objects within a course have been completed by the learner, the course status is marked as complete. However, within a course, some of the learning objects are marked as optional. If learners complete all required learning objects and not the optional objects, they should receive a course completion status. Additionally, learners should be able to go back and access the required and the optional material, even after a course has been completed.

(UC22) Use Case (Additional Learning Objects): Learners have completed a course. Sometime later, additional learning objects are added to the course. Learners must be allowed to reenter the completed course and access additional learning objects.

(UC23) <u>Use Case (In-progress Status)</u>: A course in development is posted for learners, e.g. 5 of 10 lessons are delivered. We would like the status of the course to remain in-progress after learners have completed the first set of lessons, since more content will be added later. Can we keep the status of the course as "in progress," although the first set of learning objects has been completed?

(UC24) <u>Use Case (Limited View by Role)</u>: Currently we use enrollment rules to limit learner-access to training in a specific program area. Learners also may be limited to viewing a subset of content within a program area. For example, learners with the LMS role, *Limited Access, Non-Federal/State Employees* should only be able to access SIDES training for vendors, and no other SIDES program-area content. How would you handle these LMS role-based viewing restrictions?

(Q60) **Question: Does your LMS have additional content management functionality? If so, does it provide version control, a content library, or the ability to tag content?**

Use Case related to Administrator Grading

(UC25) <u>Use Case (Edit Properties for a Group)</u>: Administrators can filter and select a subset of learners and alter their learning information all at once, e.g. manually give a group of learners credit for having completed a lesson or course.

LMS Administrator with Limited Access

Allow LMS Administrators with Limited Access to:

- (FR185) access functionality as defined by the LMS Administrator for this role
- (FR186) view LMS data
- (FR187) access in-depth reports and extract LMS data
- (FR188) create and view real-time reports
- (FR189) create and view *ad hoc* reports
- (FR190) filter reports by date range, job role and other learner profile data, program area, U.S. state, course, learning objects and training delivery type, and other database fields
- (FR191) create custom reports and/or alter "out-of-the-box" reports
- (FR192) print, download, and export reports. Export data as tab delimited .xls, .csv
- (FR193) schedule reports which are subsequently sent via email

Course Uploaders

Allow Course Uploaders to:

- (FR194) access functionality as defined by the LMS Administrator for this role
- (FR195) create courses and populate courses with learning objects
- (FR196) upload SCORM packages for online learning
- (FR197) modify courses

Manager Features

- (FR198) Adjust permissions of other managers' roles.
- (FR199) Access manager dashboard (see business analytics requirements).
- (FR200) Adjust content of dashboard viewed by other Managers' Roles.
- (FR201) View learners assigned to courses and events.

Training Managers / Lead Instructors

Allow Training Managers/Lead Instructors to:

- (FR202) assign instructors to events
- (FR203) assign learners to events
- (FR204) create, modify, wait list, and cancel events
- (FR205) create, modify, waitlist, and cancel events using Adobe Connect and Zoom APIs for virtual instructor-led events and webinars
- (FR206) track attendance (e.g., no show, cancelled, attended) for all events
- (FR207) add/reject/update/approve learners for events
- (FR208) view learner profiles
- (FR209) create, modify, and trigger emails for events
- (FR210) create, modify and post announcements on public-facing home page / learner site
- (FR211) approve or reject a learner's request that prerequisites be waived
- (FR212) manage a learner's training record by marking any course or learning object as complete, in-progress, or incomplete

Instructors

Allow Instructors to:

- (FR213) view registered learners for the instructor's assigned events
- (FR214) add/reject/update/approve learners for events
- (FR215) update course attendance after events are conducted

Designated State Agency Team Manager

Allow the Designated State Agency Team Manager to:

- (FR216) view learning data for LMS-enrolled employees of that state
- (FR217) view a list of registered learners from their U.S. state for the instructor's assigned events
- (FR218) approve learners for courses that require supervisor approval

State Agency Managers (Observers)

Allow State Agency Managers to:

- (FR219) view learning data for LMS-enrolled employees of their state

Learner Features

Federal and State Workforce Agency Employees

Allow Federal and State Workforce Agency Employees to:

- (FR220) access training from a catalog based upon their roles
- (FR221) search and filter catalog content
- (FR222) change learner profile settings by field
- (FR223) access a learner site and learner site features (see Learner Site section)
- (FR224) view, print, and download learning history, including completed work and work in progress
- (FR225) receive and access announcements
- (FR226) provide rankings for courses, events, and instructors, e.g. assign numbers of satisfaction stars
- (FR227) enroll or request enrollment in courses or cancel their enrollment
- (FR228) request that prerequisites be waived (also noted with the Prerequisites description)
- (FR229) access and download training materials associated with courses
- (FR230) register and unregister for training events, including instructor-led virtual classes, webinars, and classroom training
- (FR231) view a calendar of all events
- (FR232) register for events directly from the calendar
- (FR233) view personal calendar displaying the learner's registered events
- (FR234) view, print, and download a Certificate of Completion issued upon course completion
- (FR235) view and respond to social learning features

Limited Access, Non-Federal/State Employees

Allow Limited Access, Non-Federal/State Employees to:

- (FR236) access assigned training, but not view or access internal catalog

Non-licensed Visitors (Public-facing View)

Allow Visitors (Public Facing View) to:

- (FR237) view catalog
- (FR238) filter catalog content
- (FR239) request enrollment in LMS. Visitors are presented enrollment option, upon accessing catalog content

Miscellaneous

(Q61) **Question: Is there functionality within your LMS, which we have not specified, that you would like to call out to us?**

Appendix B

LMS Requirements in Table Form

Product Information	
	Vendor Comments
Product Name	
Original release date of your product	
Current release	
Current release date	
Release frequency	
Planned upgrades and releases for next 6 months	
Number of individual clients	
Largest number of active users for one client (client name not needed)	
Please include Screen Captures of the following:	
Public facing home page - if one exists	
View of Catalog page	
View of objects within a course, e.g. online lessons, instructor-led event, peripheral course documents	
Learner home page - what learners see every time they enter the LMS	
Administrator's home page	
View of select reports	
Additional screenshots that would be helpful	

Non-Functional Requirements			
ID#	**Requirements and Questions**	**Y/N**	**Vendor Comments**
NFR1	Web-based		
NFR2	Support for HTML-5		
NFR3	Do you support Adobe Flash? What versions of Flash?		
NFR4	Required Browsers (on Desktop)		
	o Internet Explorer 10 and above		
	o Google Chrome		
	o Microsoft Edge		
	o Mozilla Firefox		
	o Safari		
NFR5	Responsive Design		
NFR6	Support for desktop, laptop, and tablets		
NFR7	Support for mobile devices (optional) with iOS / Android		
NFR8	Please provide your Service-Level Agreement (SLA)		
NFR9	Virus and anti-malware checker on all uploads into the LMS		
	Questions		
Q1	What is the platform for your LMS solution - SaaS, PaaS, or Self-hosted (on client infrastructure)?		
Q2	If not a self-hosted solution, where can the system be housed, e.g. Amazon Web-services, Azure, Rackspace. If not SaaS, can our users access your system via a VPN?		
Q3	What database does your LMS use?		
Q4	Have you conducted stress tests against your application? Provide details.		

Q5	Will you stress test our organization's implementation prior to release in the production environment?		
Q6	Although not a requirement currently, do you support other languages?		
	Backups - Requirements		
NFR10	A documented backup procedure must be implemented and maintained.		
	Questions		
Q7	What is your backup procedure?		
Q8	How often do you back up the system?		
Q9	What is your recovery process?		
Q10	What is your restoration time?		
Q11	How far can you go back to retrieve data?		
Q12	What is the granularity of the backup?		
Q13	Do you keep your backups offsite?		
	Disaster Recovery		
NFR11	A System Failover (DR) plan must be in place. Describe your disaster recovery plan.		
	Question		
Q14	Is your primary production site replicated to another facility?		
	Maintenance		
NFR12	Vendor must practice continuous maintenance activities on the LMS application.		
	Questions		

Q15	How often do you update the application, i.e. versions and patches?		
Q16	Do you provide a maintenance schedule? If yes, how far in advance is the administrator notified? (SaaS and PaaS)		
Q17	How much down time annually have you historically had? Do you guarantee a minimum amount of down time?		
	Extended Enterprise		
	Questions		
Q18	In a SaaS solution, is the LMS multi-tenant? If yes, is data isolated from other customers?		
Q19	Can each tenant have its own branding? Provide examples.		
	Security and Permissions		
NFR1 3	Application Authentication and Identity support using LDAP, SAML2, or OpenID.		
NFR1 4	FedRAMP (Federal Risk and Authorization Program) Compliant.		
	Questions		
Q20	Do you encrypt data at rest?		
Q21	How will you protect credentials and data transmissions in transit to your application? I.e., Is encryption at the application level (SSL)?		

	Compliance & Regulatory		
NFR15	LMS functionality must be designed to be accessible for people with disabilities and verifiably compliant with applicable sections of Section 508 of the Rehabilitation Act of 1973, which defines standards for electronic and information technology and web-based applications.		
NFR16	Vendor will be asked to demonstrate that graphical user interface screens are readable and easily navigable using the latest version of the JAWS or NVDA Screen Reader software.		
	Questions		
Q22	Has your LMS been tested for accessibility? If so, please describe the results and how you responded to any accessibility issues that were reported.		
NFR17	LMS must import content packages published as SCORM 2004 4th Edition.		
	o Vendor will demonstrate the import of a NASWA-provided SCORM .zip file.		
	o Provide a description of the subset of SCORM data model elements, if any, that are not retained in your LMS database.		
	Question		
Q23	What other SCORM versions your LMS support, e.g. AICC HACP, SCORM 1.2, xAPI?		
	Licensing		
NFR18	Allow purging of licensed learners.		

NFR19	Provide continued storage of data for purged learners, so data remains should learners be re-licensed.		
	Questions		
Q24	How is your licensing structured, i.e. concurrent users/named users?		
Q25	For named learners, do seats rollover to new learners?		
	Initial Implementation of LMS		
NFR20	Provide a description of your implementation process and timeframe		
NFR21	Transfer data from existing LMS, e.g. allow administrator and/or tech team to load past learning history via batch import. Provide process and timeframe for data transfer.		
NFR22	Provide a sandbox area where the LMS implementation can be tested.		
	Question		
Q26	Is there an implementation fee?		
	Support		
NFR23	Administrative support by email and, when required, telephone support. For critical matters, response time should be within two hours.		
	Questions		
Q27	What are your methods of communication, e.g. do you offer e-mail support, live support, phone support and/or web-based support?		

Q28	What is the average response time for a priority one support call, during business hours and after business hours?		
Q29	What hours do you offer support?		
	o Business hours? What time zones?		
	o Do you offer support on the weekends?		
	o 24/7, 365 day a year support?		
Q30	What types of support do you offer, e.g. administrator, learner? What are the fees for each type of support?		
Q31	Is support included for a self-hosted solution?		
Q32	Is support only for one administrator or if the client has multiple administrators (do they receive support too)? If an additional cost, please state fee(s).		
Q33	How many people do you have in support? Where are your support agents based, i.e. located?		
Q34	Do you have built-in help? Do you provide contextual help?		
	Training		
NFR24	Provide training manuals targeted for LMS Roles, i.e. learners, managers/instructors, and administrators.		
NFR25	Provide training for administrators as part of implementation process.		
NFR26	Provide training for administrators on overall LMS functionality.		
NFR27	Provide materials for learner training, such as job aids, reference guides and/or any other materials, and editable templates that can be modified for learners.		

	Questions		
Q35	Do you provide free training? What is included in the "free" training?		
Q36	Do you offer training, in addition to free training? What are the costs and what is included?		
Q37	Do you offer a Community Site/Knowledge Portal? If yes, what is included?		

Functional Requirements			
ID#	**Requirements and Questions**	**Y/N**	**Vendor Comments**
	Types of Content to be Supported by the LMS		
FR1	Self-paced eLearning built in Articulate Storyline and published as SCORM packages		
FR2	Instructor-led in-person events		
FR3	Instructor-led virtual classes, synchronous using an external web-conferencing tool, currently Adobe Connect		
FR4	Webinars using Zoom, registration for synchronous (live) sessions and playback of asynchronous (previously recorded webinars).		
FR5	Supplemental training materials		
FR6	Blended learning - mix of online, instructor-led events, webinars, supplemental training materials, external content		
FR7	Videos (track that a learner has linked to a video housed externally, e.g. Vimeo)		
FR8	External Content (track that a learner has accessed a linked document housed externally)		
FR9	As previously defined, courses contain a collection of lessons, events, and learning materials. A lesson is		

	one SCORM package. Lessons and events may also standalone, not as part of a course.		
	Questions		
Q38	Does your LMS have a document library accessible by learners?		
Q39	Does your LMS allow learners to post informal learning?		
Q40	What descriptors or identifying information are attached to learning objects and courses (collections of learning objects), e.g. title, description, length/duration.		
	Publishing/Uploading Content		
FR10	Upload SCORM and AICC custom content without vendor assistance.		
FR11	Upload to a staging area before content goes live.		
	Customizations		
FR12	Details about required functionality that may require customization are defined throughout this requirements document. If requested requirements are not available, please indicate alternatives for customization that will address NASWA's needs. Also indicate when required customizations will incur costs.		
FR13	The following elements may require customizations:		
	o Branding, e.g. GUI, web pages, Certifications of Completion, reports		
	o Fields		
	o Reports		

	o Buttons		
	o Email Notifications		
	o Functional Changes to meet requirements		
	Organization and Display of Content		
	Catalog		
FR14	Group lessons, events, and materials (learning objects) within a course.		
FR15	Group or filter courses by tags assigned by administrators.		
FR16	Group or filter courses by tracks that reflect a job role or a content topic.		
FR17	Group or filter courses by program area, i.e. NIA, ITSC, WITSC, SIDES, ICON.		
FR18	Group by delivery method, e.g. instructor-led event, online		
FR19	Display learning objects in multiple courses and tracks.		
FR20	Display catalog on public site.		
FR21	Store selected catalog objects within a learner site.		
FR22	Link to catalog or courses, when URLS are embedded within emails.		
	Questions		
Q41	Does your content catalog identify new, popular or featured content?		
Q42	Do you offer pre-built courses to your customers that integrate with your LMS at no additional charge, e.g. human resources topics like behavior in the workplace?		

UC1	<u>Use Case (Filter Catalog by Program Area):</u> National Integrity Academy (NIA) learners may see NIA content for which they are approved, but cannot see ITSC, WITC, SIDES and ICON content. WITC, SIDES and ICON learners should only be able to view their program area's content. Some content may cross over program areas. ITSC learners may see content for all content program areas, unless that content requires supervisor approval. How would your LMS handle this?		
UC2	<u>Use Case (Visually Distinct Programs Areas):</u> Content in the separate NASWA program areas need to be visually identifiable as being associated with each program area. How would your LMS handle this?		
UC3	<u>Use Case (Visually ID Course Learning Objects):</u> We may like to visually identify the multiple learning objects (lessons, events, materials) in a course. For example, all course learning objects would be marked with a symbol or color to identify them as being part of the same course/curriculum. In some cases, learning objects are used across multiple courses/curriculum, so when they are not identified as being with a course/curriculum or, if the also lesson stands alone as an object, the visual cue would be removed. Can your LMS provide these needs?		
	Search Functionality		
FR23	Search tagged content. Content tagged for searching and reporting, would include courses, lessons, materials.		

FR24	Search functionality allowing learners to find specific courses, lessons, materials, delivery format, based on keywords, title, course description, job roles, and other tagged identifiers.		
FR25	Enter search parameters within an easy-to-use search interface.		
FR26	Display search results in an easy-to-interpret format.		
FR27	Provide search results as permissions-based, i.e. learners can only see information they have permissions to access, via job role or other group assignments.		
	Questions		
Q43	(Basic/Advanced Search): Do you provide basic and advanced search functionality? Please describe.		
Q44	(Search on SCORM metatags): Does your search functionality, search upon SCORM keyword metatags imported from SCORM packages?		
	Public-facing Home Page		
FR28	A public-facing home page should be customizable and branded for NASWA.		
FR29	Learners who are not licensed users with the LMS will view a public-facing LMS home page.		
FR30	Display public view of course catalog with search functionality.		
FR31	Allow visitors to request enrollment into the LMS.		
FR32	Display announcements.		

UC4	Use Case (Access Catalog from Public Site): Learners enrolled within the LMS will access the internal catalog. However, visitors may access the catalog from a public-facing site and send courses that interest them to a "favorites list." Upon selecting a course or an event from the list, the visitor is prompted to enroll. If a visitor enrolls, the "favorites lists" is saved to his or her learner site.		
	Learner Site		
FR33	A "learner site" as described within this LMS is an area where learners may access information specific to them. Please describe how learners access and interact with the following information with your LMS.		
FR34	Access personal training information by licensed learners, likely from a learner site.		
FR35	Display a collection of training content selected from the catalog by learners within learner site.		
FR36	Allow learners to enroll, or request enrollment in course, or cancel their enrollment (see Enrollment section for more information)		
FR37	Display training content within the learner site assigned or recommend by state personnel at the direction of state management or by LMS administrators.		
FR38	Display assigned or recommended content on the learner site based upon the learner's role.		
FR39	Display training materials accessed and downloaded by learners within the learner site.		
FR40	Review learning history/completed work by learners.		
FR41	Download learning history/transcript by learners.		

FR42	View and download certificates of completion by learners.		
FR43	Identify and display system-recommended/suggested courses on the learner site based upon learner job role(s).		
FR44	Provide ranking for courses, events, and instructors, e.g. assign numbers of satisfaction stars.		
FR45	Display learner training progress and completions by course, module, and lesson.		
FR46	Notify learners, when they are wait-listed for registered events (see Event Management and Event Registration section for more information).		
FR47	Provide learner with ability to request that prerequisites attached to learning objects be waived from the learner site.		
FR48	Display announcements.		
	Questions		
Q45	Describe whether there is a learner site in your LMS. For example, is the learner site a portal or a dashboard? What information is displayed? How does the learner access his or her learner site – e.g. is it displayed upon logging in to the LMS or do they navigate to the site?		
UC5	<u>Use Case (Push Filtered Content to Learner Profile):</u> Learner role and/or group information in the learner profile can be used to assign course content. Content would be tagged accordingly. If the learner's role is Adjudicator then, Adjudication content is pushed to that learner. As an alternative,		

	a message could notify learners of content that is relative to them.		
	Announcements		
FR49	Create, modify and post announcements on Public-facing Home Page.		
FR50	Create, modify and post announcements on learner sites.		
	Learner Profile		
FR51	Establish a learner profile when a learner enrolls within the LMS.		
FR52	Query the learner upon enrollment for required and optional information and save to learner profile.		
FR53	Provide a template that delineates information to include profile query; the template must be configurable by LMS administrators.		
FR54	Allow learner to view their profile at any time.		
FR55	Allow learners to view a subset of the learner profile of others (some information will be private). For example, a state employee from one state may want email addresses for employees from other states with a similar job role.		
FR56	Identify learners with single or multiple job roles.		
FR57	Display content within the learner site based on the job role(s) identified by the learner in their learner profile.		

	Question		
Q46	Can a learner have more than one role?		
	Enrollment		
FR58	Collect enrollment information from the learner upon his or her request for access to the LMS.		
FR59	Store enrollment information in a learner profile.		
	Question		
Q47	If enrollment information is stored separately from a Learner's profile, can it be viewed and edited by the learner and administrator?		
UC6	<u>Use Case (Self-Enrollment from Public Site):</u> New learners will look at LMS catalog from a public-facing site. Upon choosing training content, the learner will be prompted to enroll in the LMS. Learner will complete a learner profile form in advance of being provided credentials for single sign on (SSO). How does your LMS handle SSO?		
UC7	<u>Use Case (SSO):</u> NASWA requires the learners be provided with SSO credentials across applications/sites. NASWA relies on integration with Active Directory for SSO access to its current LMS. How would your LMS handle SSO?		
FR60	Attach the requirement for Supervisor approval before learners can access some courses. Supervisor approval is not required for all courses.		
	Questions		

Q48	How does your LMS handle Supervisor approval? Is Supervisor approval addressed during the LMS enrollment process or is it addressed at the course level? Does the learner indicate his or her supervisor's name and contact information during the enrollment process? Does the LMS allow supervisor information to be updated?		
FR61	Allow Administrator to create mass enrollments.		
UC8	<u>Use Case (Mass Enrollment):</u> A state representative from Pennsylvania requests that 300 Pennsylvania state employees be registered in the LMS, without requiring self-enrollment. How does your LMS handle this? How can learner profile/enrollment data be entered when learners are mass enrolled?		
	Event Management and Event Registration		
FR62	Registration refers to learners registering for events, such as in-person classroom training, Adobe Connect virtual training, or Zoom webinars.		
FR63	Create an event and instances of that event; define properties, e.g. date and times, location, maximum class size, ability to wait list		
FR64	Create an event as a standard template and then create multiple instances of that event, e.g. over multiple days, times, and locations.		
FR65	Override maximum class size by Instructors		
FR66	Accommodate different time zones for live events		
FR67	Assign instructors to an event. If possible, assign multiple instructors to an event.		

FR68	Allow mass registration for events by LMS Administrators		
FR69	Allow attendees to register, modify registration, and unregister for events		
FR70	Specify end date for learner enrollment and changes to enrollment status (self-register, unregister).		
FR71	Create approval process for courses within the LMS catalog for all courses, including external courses		
FR72	Send automated confirmation reminder notices by email for events via email/calendar		
FR73	Provide wait listing:		
	o Automatic wait list functionality, i.e. for an event that becomes filled		
	o Automatic wait list adjustment–learner at top of waitlist is automatically enrolled when a space becomes available)		
	o Management of the wait list and roster (administrator only)		
FR74	Sign up for an ILT without first signing into the LMS. (Signup for the event on a public facing site without signing in to the LMS.)		
FR75	Pass learner registration for events from the LMS to the event application and pass attendance data back to learners' records in the LMS using an API for Adobe Connect and for Zoom.		
FR76	Delete registrants for an event after the event has taken place.		
	Question		
Q49	How does your LMS handle event registration?		

UC9	Use Case (Email Links to Events): Learners receive an email notification with a link to register for an event. Upon clicking the link, the learner is taken to the event within the LMS to allow them to register. If the event is part of a course that requires supervisor approval and the learner has not yet enrolled in the course, the learner is asked to register for the course. If the learner does not have an LMS license, instructions for enrolling are provided. Otherwise, the learner can choose to immediately register for the event.		
	Calendar		
FR77	Provide a calendar that displays all events.		
FR78	Filter calendar listings by properties, e.g. program area.		
FR79	Enroll in events from within the calendar, e.g. learners click on any event listed on the calendar to register.		
FR80	Provide calendar view configured to display learner events on the learner site.		
	Questions		
Q50	Does your LMS calendar feature save event registration to external calendars, such as iCal in Outlook, Gmail, and other internet e-mail platforms?		
Q51	What views does your calendar display? What other functionality does your calendar provide?		

	Online Training (eLearning)		
FR81	As called out in the Specification Section of this requirements document, LMS must minimally be able to accept SCORM 2004 4th edition content. Vendor must demonstrate the upload of a sample NASWA SCORM package.		
	Questions		
Q52	What descriptors or identifying information are attached to online lessons? Are the descriptors separate and in addition to the descriptors passed from the SCORM manifest?		
UC10	Use Case (Lesson Length): Learners want to know how long a lesson will take to complete, without opening the actual lesson to view estimated completion time. Does your LMS display completion times for lessons, for course, or for other non-SCORM learning objects?		
	Questions		
Q53	What data which is available in a SCORM manifest is stored in your LMS database?		
Q54	Does your LMS have canned reports and/or views of SCORM manifest data?		
FR82	Provide Test Item Analysis data, i.e. test item data passed from SCORM parameters must be viewable for trainers and administrators to evaluate percentages of incorrect answers per test questions across an audience.		

FR83	When exiting a lesson, a learner closes the lesson by using exit functionality within the lesson itself. If the lesson has not been completed, it is automatically bookmarked. If the lesson has been completed, as defined by the lesson settings, exiting the lesson reports completion to the LMS. In other words, separate LMS button functionality is not necessary.		
FR84	Allow administrators to view courses uploaded to the LMS, before making them visible to learners.		
	Prerequisites		
FR85	Provide two levels of prerequisites:		
	(1) prerequisites among courses, e.g. Fraud Course is a prerequisite for the Fraud Continuing Education course.		
	(2) force the order of viewing learning objects within a course		
FR86	Allow learners to request that certain prerequisites be waived. (This requirement is also noted with the learner site description.)		
FR87	Allow the administrator to override prerequisites for individual learners or groups of learners.		
UC11	<u>Use Case (Prerequisites):</u> A course contains multiple types of learning objects. We would like to allow: a forced order of course objects; no forced order; and/or a mixture where certain objects of a lesson have a forced order, and others do not. For example, a course has several introductory online lessons which are prerequisite to attending an event. Additional learning objects should then be accessible after the learner attends the event; in other words, the event is a prerequisite for		

	accessing additional lessons. (The administrator must have the flexibility to override prerequisites.)		
UC12	<u>Related Use Case:</u> When prerequisite learning objects are overridden by an administrator, the learner does not receive a completion status for the course, unless the learner eventually goes back and completes the overridden learning objects. However, the administrator can opt to manually assign a learner's course status as complete, without the learner completing the waived learning objects.		
	Questions		
Q55	Can assigned prerequisites vary depending on a specific user role or by U.S State? If so, can we assign those prerequisites in bulk, rather than one learner at a time?		
	Certificates of Completion, Management & Tracking		
FR88	Provide certificates of completion when learner completes certain courses (groups of learning objects), stand-alone lessons, or events that are not associated with a course.		

FR89	Identify which learning objects will generate a certificate of completion (preference set by administrator).		
FR90	Allow custom certificates to be designed/modified by Administrator. Editable templates are preferred.		
FR91	Pre-populated content on certificate of completion from the LMS database, minimally with learner name, course name, and date of completion.		
FR92	Custom certificates can be attached to a course or a stand-alone lesson.		
FR93	Ability to automatically award a certificate, once course/content is complete. Learner receives immediate visual notification on learner site and option email.		
FR94	Display, print, download certificates completed on the learner site.		
FR95	Email the learner's supervisor a copy of certificate generated by learner or system.		
FR96	Allow trainers and supervisors to download certificates.		
FR97	Display a report of learners who have earned certificates for courses.		
	Question		
Q56	What features are provided in your LMS' certification functionality?		
	Email Notifications / Alerts		
FR98	Integrate email notification with NASWA's email server or secure NASWA-provided external SMTP server		

FR99	Create, edit, and manage content of notification messages.		
FR100	Create email notifications based on group or learner profile, e.g. for announcements.		
FR101	Send email notification of supervisor approval for learner access to requested course(s).		
FR102	Send email confirmation after learner registers for events.		
FR103	Send email notification of event wait listing status.		
FR104	Send auto-reminder email for upcoming events.		
FR105	Generate custom survey email notifications at multiple specific times after course completion (not required for all courses). (See Survey section for more details.)		
FR106	Send email notifications to learners when certificates of completion have been earned.		
	Questions		
Q57	What email notification features does your LMS provide?		
Q58	Does your LMS integrate with a third-party email service, such as Constant Contact or MailChimp.		
UC13	<u>Use Case (Enrollment Notification):</u> A learner enrolls and is approved for LMS access, or an administrator enrolls a group of learners within the LMS. The learner should automatically be sent a welcome email with credentials or the administrator should be able to trigger a batch of emails for learners, which contain each learner's credentials. With current SSO requirements, this is a manual process using mail merge.		

	Surveys		
FR107	NASWA regularly provides surveys to multiple audiences and performs extensive analysis of survey data. We currently use two commercial survey products. We are interested in any survey capability provided within your LMS but anticipate that we are more likely to require integration with third-party software.		
FR108	Integrate with a survey application, specifically Survey Gizmo and/or SurveyMonkey.		
FR109	Generate custom survey email notifications at multiple specific times after course completion (not required for all courses).		
UC14	Use Case (Multiple Survey Emails): Upon completion of some courses an email needs to be generated at the completion of the course and sent to the learner asking them to complete a survey. The survey link is embedded within the email. A second email is automatically sent to the learner at a specified time after the first survey request (usually 8 weeks) providing a link to another survey. Can your LMS automatically generate these email notifications?		
UC15	Use Case (Survey Courses in Development): During the course development process, lessons are posted for learners, e.g. 5 of 10 lessons, on a rolling schedule. We would like to email learner at differing intervals during the course development process as they complete modules and lessons. Emails will contain links to surveys.		

UC16	Use Case (Event Surveys): Upon completion of a virtual event, an email should be sent automatically to attendees that contains a link to a survey. For in-person events, the email should be manually triggered.		
UC17	Use Case (Survey/LMS Data Analysis): One of the program groups performs a robust evaluation process looking at data collected using external survey software tools (Survey Monkey and Survey Gizmo) as well as LMS data, to evaluate training outcomes. Evaluations are performed on a planned and ad hoc basis and generates several reports. We are looking for a way to minimize our current manual labor intensive and time-consuming evaluation process. Could your LMS help automate this process by integrating with external tools or using a survey tool that is native to the LMS?		
	Built-in Tools / Integration with Apps		
FR110	Link to other systems using APIs and web services (open architecture).		
FR111	Link to surveys and survey management applications, specifically Survey Gizmo and/or SurveyMonkey		
FR112	Exchange data with Drupal-based and SharePoint-based sites via API integration, e.g. scheduling and course information.		
FR113	Integrate email notification with NASWA's email server or secure NASWA-provided external SMTP server (also listed in Notification section).		
FR114	Integrate with a business intelligence/business analytics tool, e.g. Microsoft BI or Tableaux (see Reporting/BI Tool sections).		

FR115	Integrate with web-conferencing platforms, i.e. Adobe Connect and Zoom (virtual classrooms).		
FR116	Provide analytics data for login information, e.g. who logged in and when they logged in.		
	Social Learning Requirements		
FR117	NASWA would like to implement social learning features and are open to hearing about the types of features provided within your LMS.		
FR118	Provide social learning capabilities, such as chat rooms, discussion boards, workspaces, and/or threaded discussion forums.		
FR119	Allow learners to post questions and comments on topics in a social area and respond to other learners.		
FR120	Create communities across all program areas by topic; create communities tied to each program area.		
FR121	Create communities tied to a specific course, e.g. learners accessing Legislative training may post questions and comments that may only be viewed by others taking that course.		
FR122	Social areas are moderated by an Administrator.		
	Reporting / Business Analytics		
	Reports		
FR123	View real-time reports		
FR124	View ad hoc reports		
FR125	Create and filter reports by date range, job role and other learner profile data, program area, U.S. state, course, learning objects and training delivery type, and other database fields.		

FR126	Create custom reports and/or alter "out-of-the-box" reports.		
FR127	Print, download, and export reports. Export data as tab delimited .xls, .csv		
FR128	Schedule reports which are subsequently sent via email.		
	Question		
Q59	How does your system preserve custom reports during system upgrades?		
	Administrator Reports:		
FR129	Display training progress and completions by course, module, and lesson and sort by state and/or job role.		
FR130	Display Test Item Analysis Reports to identify percent of current responses for individual test questions		
FR131	Display Learner enrollment reports within the LMS and enrollment within courses.		
UC18	<u>Use Case (Analysis of Data from Multiple Sources):</u> A series of reports for management correlating information from various data sources. NASWA would like to reduce the manual processing of creating required reports. Please describe possible integration of this data through your LMS. Data includes:		
	o Results of learner satisfaction surveys within Survey Gizmo and resulting Survey Gizmo course evaluation summary reports.		

	o Learner profile data from an external Drupal website (enrollment form data), completed prior to LMS enrollment. This includes job roles and length of experience within their state agency.		
	o Course progress and completion data from an LMS,		
	o The date credentials are assigned and last learner login date; data is currently accessed from Active Directory logs.		
	Instructor Reports:		
FR132	Display reports of learner enrollments for events.		
	Learner Reports:		
FR133	Display list of courses completed and in progress (learner history) accessible from learner site.		
FR134	Display list of certifications of completion accessible from learner site. (Not all courses issue certificates.)		
	Integrated Business Analytics Tool		
FR135	Integrate all reporting data from the LMS with a 3rd party database, such as Microsoft Power BI or Tableau, if the LMS does not provide analytics functionality.		
FR136	If your LMS provides analytics functionality, it is required to:		
	o allow users and report writers to see and access information in simple business language, without having to comprehend the complexities of the underlying data or database		

	o allow creation of user-configurable dashboards for administrator and manager roles that display visual representations of data		
	o allow drill-down within dashboard views		
	o map and visualize data in geographical formats		
	o use conditional formatting to set data alerts, which highlight data exceptions		
	Miscellaneous		
	Question		
Q61	Is there functionality within your LMS, which we have not specified, that you would like to call out to us?		

Functional Requirements by Role			
ID#	**Requirements and Questions**	**Y/N**	**Vendor Comments**
	Question		
Q61	Can you organize learners within your LMS based upon factors such as program area (NIA, WITSC, ITSC, SIDES, and ICON), U.S State, and job role. Will it require a workaround to accommodate this structure within your LMS? Please describe.		
	Administrator Features		
	Allow Upper-level Administrators to:		
FR137	control and manage nonfunctional requirements		
FR138	direct implementation of LMS on behalf of NASWA stakeholders		
FR139	manage activities related to integration with APIs to external applications		

FR140	manages decisions related to upgrading LMS versions		
FR141	accesses LMS Vendor top-tier support for addressing issues		
	Allow LMS Administrators to:		
	Related to Assigning Permissions:		
FR142	create and assign system roles, e.g. Manager, Instructor		
FR143	specify a subset of functionality available to the LMS Administrator with Limited Access and the Course Uploader roles		

	Related to Courses / Online Training:		
FR144	upload SCORM and AICC custom content without vendor assistance		
FR145	assign course properties (e.g. duration, description, tags)		
FR146	identify prerequisites within and among courses		
FR147	disable a course without removing it from the LMS		
FR148	create, modify and cancel a course		
FR149	create/design certificates of completion and assign them to courses.		
	Related to Catalog:		
FR150	maintain catalog and tag catalog entries		
	Related to Search:		
FR151	tag learning objects for use in search functionality		
FR152	tag courses with job roles		
	Related to Public-facing Home Page:		
FR153	create and modify the public-facing home page		
	Related to Learner Profiles and Learner Site:		
FR154	create and modify the learner site		
FR155	assign or change information within individual learner profiles, e.g. job roles, U.S. state, or information previously populated by the learner.		
FR156	assign or change information within learner profiles to groups of learners, e.g. job roles, U.S. state		
FR157	assign learners to program areas		

FR158	assign learners to supervisor-approved courses (by-pass supervisor approval)		
FR159	manage a learner's training record by marking any course or learning object as complete, in-progress, or incomplete.		
FR160	batch upload learners for enrollment into LMS		
FR161	export learner records from LMS, e.g. .xls or .csv		
	Related to Announcements:		
FR162	create, modify and post announcements on public-facing home page / learner site		
	Related to Enrollment:		
FR163	manage learner enrollment within LMS		
FR164	mass enroll learners in LMS		
	Related to Event Management:		
FR165	manage registration functionality		
FR166	create, modify, wait list, and cancel instructor-led events		
FR167	create, modify, wait list, and cancel virtual events using Adobe Connect and Zoom APIs		
FR168	track attendance (e.g., no show, cancelled, attended) for all events		
	Related to Calendar:		
FR169	manage calendar and calendar events		
	Related to Prerequisites:		
FR170	assign prerequisites to courses and course content		
FR171	manage exceptions to prerequisites		

	Related to Certificates of Completion:		
FR172	create and manage certificates of completion		
FR173	assign certificates of completion to courses		
	Related to Emails and Notifications:		
FR174	create, modify, and trigger emails.		
	Related to Surveys:		
FR175	creates and manage assignment of survey email notification to courses		
FR176	support the reporting of survey data		
	Related to Social Learning Requirements:		
FR177	create, populate, and monitor social learning features		
	Related to Reports:		
FR178	access administrator dashboard (see business analytics requirements)		
FR179	create and view real-time reports		
FR180	create and view ad hoc reports		
FR181	filter reports by date range, job role and other learner profile data, program area, U.S. state, course, learning objects and training delivery type, and other database fields.		
FR182	create custom reports and/or alter “out-of-the-box" reports.		
FR183	print, download, and export reports. Export data as tab delimited .xls, .csv		
FR184	schedule reports which are subsequently sent via email.		

UC19	Use Case (Multiple Instances of a Single SCORM Object): When a training object, e.g. a SCORM object, is used across multiple courses. We prefer that the SCORM object is stored once and is pointed to multiple times. Is it also possible to keep a prior version of the SCORM object for some courses, while other lessons use a revised version? If you upload new training object, do learners who have started a course show the new version of the learning object or does it show the earlier version; when learners access a course for the first time, will they be shown the newer learning object? If learner who has accessed a course and sees the older version of a learning object, upon completion of the course, can they review the course and be shown the newer version of the learning object.		
UC20	Use Case (New Content in a Completed Course): Learners have completed a course. Administrator adds additional lessons and content to that course later. Learners must be able to access the new content.		

UC21	<u>Use Case (Optional Courses):</u> When all required learning objects within a course have been completed by the learner, the course status is marked as complete. However, within a course, some of the learning objects are marked as optional. If learners complete all required learning objects and not the optional objects, they should receive a course completion status. Additionally, learners should be able to go back and access the required and the optional material, even after a course has been completed.		
UC22	<u>Use Case (Additional Learning Objects):</u> Learners have completed a course. Sometime later, additional learning objects are added to the course. Learners must be allowed to reenter the completed course and access additional learning objects.		
UC23	<u>Use Case (In-progress Status):</u> A course in development is posted for learners, e.g. 5 of 10 lessons are delivered. We would like the status of the course to remain in-progress after learners have completed the first set of lessons, since more content will be added later. Can we keep the status the course as "in progress," although the first set of learning objects has been completed?		

UC24	<u>Use Case (Limited View by Role):</u> Currently we use enrollment rules to limit learner-access to training in a specific program area. Learners also may be limited to viewing a subset of content within a program area. For example, learners with the LMS role, Limited Access, Non-Federal/State Employees should only be able to access SIDES training for vendors, and no other SIDES program-area content. How would you handle these LMS role-based viewing restrictions?		
	Questions		
Q60	Does your LMS have additional content management functionality, if so does it provide version control, a content library, ability to tag content?		
UC25	<u>Use Case (Edit Properties for a Group):</u> Administrators can filter and select a subset of learners and alter their learning information at all at once, e.g. manually give a group of learners credit for having completed a lesson or course.		
	Allow LMS Administrators with Limited Access to:		
FR185	access functionality as defined by the LMS Administrator for this role		
FR186	view LMS data		

FR187	access in-depth reports and extract LMS data		
FR188	create and view real-time reports		
FR189	create and view ad hoc reports		
FR190	filter reports by date range, job role and other learner profile data, program area, U.S. state, course, learning objects and training delivery type, and other database fields		
FR191	create custom reports and/or alter "out-of-the-box" reports		
FR192	print, download, and export reports. Export data as tab delimited .xls, .csv		
FR193	schedule reports which are subsequently sent via email		
	Allow Course Uploaders to:		
FR194	access functionality as defined by the LMS Administrator for this role		
FR195	create courses and populate courses with learning objects		
FR196	upload SCORM packages for online learning		
FR197	modify courses		
	Manager Features		
FR198	Adjust permissions of other managers' roles.		
FR199	Access manager dashboard (see business analytics requirements).		
FR200	Adjust content of dashboard viewed by other Managers' Roles.		

FR201	View learners assigned to courses and events.		
	Allow Training Managers/Lead Instructors to:		
FR202	assign instructors to events		
FR203	assign learners to events		
FR204	create, modify, wait list, and cancel events		
FR205	create, modify, waitlist, and cancel events using Adobe Connect and Zoom APIs for virtual instructor-led events and webinars		
FR206	track attendance (e.g., no show, cancelled, attended) for all events		
FR207	add/reject/update/approve learners for events		
FR208	view learner profiles		
FR209	create, modify, and trigger emails for events		
FR210	create, modify and post announcements on public-facing home page / learner site		
FR211	approve or reject a learner's request that prerequisites be waived		
FR212	manage a learner's training record by marking any course or learning object as complete, in-progress, or incomplete		
	Allow Instructors to:		
FR213	view registered learners for the instructor's assigned events		

FR214	add/reject/update/approve learners for events		
FR215	update course attendance after events are conducted		
	Allow the Designated State Agency Team Manager to:		
FR216	view learning data for LMS-enrolled employees of that state		
FR217	view a list of registered learners from their U.S. state for the instructor's assigned events		
FR218	approve learners for courses that require supervisor approval		
	Allow State Agency Managers to:		
FR219	view learning data for LMS-enrolled employees of their state		
	Learner Features		
	Allow Federal and State Workforce Agency Employees to:		
FR220	access training from a catalog based upon their roles		
FR221	search and filter catalog content		
FR222	change learner profile settings by field		
FR223	access a learner site and learner site features (see Learner Site section)		
FR224	view, print, and download learning history, including completed work and work in progress		
FR225	receive and access announcements		

FR226	provide rankings for courses, events, and instructors, e.g. assign numbers of satisfaction stars		
FR227	enroll or request enrollment in courses or cancel their enrollment		
FR228	request that prerequisites be waived (also noted with the Prerequisites description)		
FR229	access and download training materials associated with courses		
FR230	register and unregister for training events, including instructor-led virtual classes, webinars, and classroom training		
FR231	view a calendar of all events		
FR232	register for events directly from the calendar		
FR233	view personal calendar displaying the learner's registered events		
FR234	view, print, and download a Certificate of Completion issued upon course completion		
FR235	view and respond to social learning features		
	Allow Limited Access, Non-Federal/State Employees to:		
FR236	access assigned training, but not view or access internal catalog		
	Allow Non-licensed Visitors (Public Facing View) to:		
FR237	view catalog		
FR238	filter catalog content		

FR239	request enrollment in LMS. Visitors are presented enrollment option, upon accessing catalog content		