Independent Review

Enterprise Learning Management System (LMS) Project

Version 5

For the

State of Vermont
Agency of Transportation/Department of Information and Innovation

Submitted to the
State of Vermont, Office of the CIO
By

Jennifer A. Mincar
Mincar Consulting
106 Main Street ~ Burlington, VT ~ 05401 ~ mincar@gmavt.net ~ 802.363.0170

03.09.16

Table of Contents

1. Executive Summary

The State of Vermont (State) Agency of Transportation (AOT) is proposing the implementation of a Learning Management System (LMS). An LMS solution will allow for registering, training, tracking and reporting of all training efforts for the Vermont Agency of Transportation (VTrans) and eventually across the State.   The processes currently used to register, manage and report on employee training records are manual, resource intensive and time consuming for both the users and the administrators.   The agency has built requirements, issued an RFP and is in the process of contracting with a company called Cornerstone OnDemand for a Software as a Service (SaaS) LMS solution.   During the requirements phase, other State agencies also identified a need for an LMS and were brought into the process, namely the Department of Human Resources (DHR), the Agency of Human Services (AHS), and the Department of Public Safety (DPS).   A Master Agreement and AOT SOW has been drafted and is poised to be shared with the vendor pending the Independent Review results.

For Phase 1, The State and Cornerstone are finalizing terms to implement a Master Agreement and AOT specific SOW for an LMS. Other agencies will require their own SOW, schedule and will incur costs for follow-on phases.

The purpose of this independent review is to evaluate the IT activity costs, architecture and implementation plans for AOT as well as for the Enterprise (enterprise is defined as all State agencies other than AOT). The scope of this review is for the State of Vermont in its entirety, however this review also calls out AOT specific information when appropriate.

1.1 Cost Summary

This Cost Summary is based on a Best and Final Offer (BAFO) proposal from Cornerstone OnDemand dated December 2, 2015 and a cost analysis created by Christine Hetzel of AOT dated August, 2015.   The State is proposing a system called Cornerstone, a software as a service web-based system.

COST	AOT	ENTERPRISE (not including AOT)	TOTAL (for the State)
IT Activity Lifecycle:	10 Years	10 years	10 Years
Total 10 year Lifecycle Costs:	**$215K**	**$2.6M**	**$2,818,532**
Total Implementation Costs:	**$113K**	**$488K**	**$602,034**
New Total Operating Costs:	**$102K**	**$2.1M**	**$2,216,498**
Difference Between Current and New Operating Costs, including resources:			**$2,013,548 Increase**
Funding Source(s) and Percentage Breakdown if Multiple Sources:	AOT: 50%state/50% fed	DHR: 100% state funds AHS: 10% state funds DEMHS/CJ: 100% federal grants	

By implementing the new LMS, the State will realize an INCREASE in operating costs of $2M. This represents an increase of ten year operating costs from $202,000 to $2.2M.

1.2 Disposition of Independent Review Deliverables

Deliverable	Highlights from the Review
Acquisition Cost Assessment	The cost of this implementation for AOT and the Enterprise is **$602K**. Costs seem low when compared to other State IT projects, but in line with what other State's paid for the Cornerstone solution. Since it's a SaaS solution, the bulk of the operation costs are user license costs, and a large percentage of those costs are for external (non-State employee) licenses. Care should be taken to examine whether an external license is really required, and to ensure that two different agencies aren't paying for two different licenses for one individual.
Technology Architecture Review	Cornerstone, the proposed vendor, provides an LMS Service using a multi-tenant SaaS architecture. Moving to a cloud environment always presents risks regarding security for data at rest and data in transit, however, the State is taking action to ensure that any data in the SaaS , while sensitive, is not identifiable, thus keeping the risks resulting from a breach low. Cornerstone has an extremely robust architecture, allowing State agencies the flexibility and individuality they desire for administration. This could also backfire by allowing too much diversity across the State. The Enterprise LMS Collaboration, a decision making group leading the LMS implementation with representation from each agency, is key to ensuring consistency and oversight where appropriate.
Implementation Plan Assessment	The implementation plan is phased, with AOT being the first agency to implement the solution, then DHR, then AHS/ DEMHS/CJ. The implementation plan presented in the proposal is realistic for AOT, and aggressive but obtainable for the follow-on agencies. Each agency should ensure that they are using best practices and lessons learned from prior phase LMS implementations. It would be unfortunate to proceed too quickly and make the same mistakes twice. Cornerstone has a solid reputation, and they have implemented many projects like this one with other states over the past 5 years. They have a very solid implementation methodology and plan with clear roles for client and vendor mapped out. Feedback from other States about Cornerstone was very positive, especially in the area of implementation guidance and customer support. Cornerstone was also very

	quick and thorough when responding to questions for this Independent Review.
Cost Analysis and Model for Benefit Analysis	This project and new system will have a 10 year total cost of **$2.8M.** Operating Costs will be **$2.2M** (not including labor costs) with **$246K annually,** each subsequent year 2-10. There are $225K of Tangible savings if a new LMS is implemented. The Cost Benefit Analysis reveals a project ROI of -76% . The costs of this project are greater than the tangible gains. On the other hand, if you include the resource time saved (intangible gains) , the ROI then becomes 5% and the gains outweigh the costs, however these costs can't be considered as tangible because positions won't be eliminated, instead work will shift to other agency initiatives. Section 8.1 shows the calculation details.
Impact Analysis on Net Operating Costs	The operating costs impact is an **INCREASE OF $2M** over 10 years. A bulk of the operating costs today are the resources required to man-handle the LMS "system" currently in place. See the chart on page 57; the current operating costs are $651K, of which $629K or 96% of current costs. Although this new system will cost $2.8M, there are significant savings to be had in employee, manager and administration time by implementing an LMS. The proposed solution will also move support and maintenance of the software solution from State staff to vendor staff. This will free up time for the Agency program staff to focus on the business instead of the technology and system**. If we include the resource time saved over the 10 year life cycle, the operating costs will decrease by $551**. However, the agencies do not plan on reducing staff as a result of the LMS implementation; time saved will be moved to other projects or responsibilities . Therefore, because there will simply be a resource shift and not a reduction, the true operating costs impact is an INCREASE OF $2M over 10 years.

1.3 Identified High Impact &/or High Likelihood of Occurrence Risks

See the risk register in Attachment A for list of High Risks.

1.4 Other Key Issues

AOT (including DMV), including executive management, is strongly advocating for this implementation, as is DHR, AHS, CJTC, and DEMHS . In the words of Scott Rogers "I am extremely supportive of the project and feel it is a requirement for the continued success of our Agency.   Simply put, it is necessary to achieve our strategic goals. This

may be one of the most important projects we've undertaken in terms of employee development during my time at the Agency."

There are significant process and reporting inefficiencies and negative impacts if these agencies continue to use the current LMS processes and tools, the biggest being that employee development turns down a negative path because of difficulties providing and managing training.

1.5 Recommendation

If the State executes the (Action Item) risk responses identified in the risk register (Attachment 1), Mincar Consulting recommends moving ahead with the phased implementation of an Enterprise LMS system using Cornerstone OnDemand, starting with Phase 1/AOT in April of 2016.   A lessons learned should be performed after each implementation to ensure the State is building best practices in future agency implementations.

1.6 Certification

I hereby certify that this Independent Review Report represents a true, independent, unbiased and thorough assessment of this technology project/activity and proposed vendor(s).

_____   _____

Signature   **Date**

2. Scope of this Independent Review

2.1 In-Scope

The scope of this document is fulfilling the requirements of Vermont Statute, Title 3, Chapter 45, §2222(g):

The Secretary of Administration shall obtain independent expert review of any recommendation for any information technology initiated after July 1, 1996, as information technology activity is defined by subdivision (a)(10), when its total cost is $1,000,000 or greater or when required by the State Chief Information Officer.

The independent review report includes:
- An acquisition cost assessment
- A technology architecture review
- An implementation plan assessment (which includes a Risk Analysis)
- A cost analysis and model for benefit analysis; and
- An impact analysis on net operating costs for the Agency carrying out the activity

2.2 Out-of-Scope

Any subject not contained in section 2.1 is considered Out of Scope for the Review.

A separate deliverable contracted as part of this Independent Review may be procurement negotiation advisory services, but documentation related to those deliverables are not part of this report.

3. Sources of Information

3.1 Independent Review Participants

Name	Agency / Department	Job Title	Project Role
Scott Rogers	AOT	Directors of Operations	AOT Executive Sponsor
Christine Hetzel*	AOT	VTTC Program Manager	Sponsor/Project Manager
Mary Borland*	AOT	VTTC Logistics	Project Assistant/System Admin
JoAnn Stevens	AOT	VTTC Finance and Logistics Branch Manager	Key Stakeholder/Backup System Admin
Lenny Leblanc	AOT	AOT CFO	AOT Project Funder
Shawn Nailor	AOT	Director Data Services	AOT business lead
Angela Rouelle	DHR	Director VTHR Operations	DHR business lead
Frank Costantino	DII	Director ERP Tech Services	ERP technical lead
Kimmie Cruickshank*	DEMHS	Training Coordinator	DEMHS business lead
John Gonyea*	VCJTC	Director of Administration and Certification	CJTC business lead
Dean Hamel	DPS	Director of OTM	None
Jason DeForge	DMV	DMV Training Specialist	Potential DMV subsite administrator
Karen Crowley*	AHS	Prof and Org Dev Director	AHS business lead
Becky-Jo Cyr*	AHS	AHS IT Manager for Central Office	LMS Tech lead
Ellie Mack*	AHS	AHS Business Analyst	LMS Business Analyst
Helen Tanona*	AHS	Project Manager	AHS project manager
Darin Prail*	AHS	CIO	AHS Project Sponsor
Stephen Fazekas	BGS	Office and Purchasing	Procurement Advisor for Master Agreement and SOWs
Jack Green	DII	Security	Security and System Advisor
Glenn Schoonover	DII	Security	Security and System Advisor
Frank Corsaro	Cornerstone OnDemand	Regional Sales Manager/ Public Sector S&L	Vendor
Bernie Tokarz	Cornerstone OnDemand	State and Local Government Division Manager	Vendor

Crystal Lupton	North Carolina Office of State Human Resources	Manager of Learning Technology	Cornerstone Reference
Barbara McCleary	State of Delaware	Manager of Statewide Training & Organizational Development	Cornerstone Reference
Tony Loomer	State of Idaho/ Idaho Transportation Department	Training & Development Manager	Cornerstone Reference

* These people are members of the LMS Collaboration team; a group that is responsible for implementing the new SOV LMS in a manner that fits the whole state rather than just AOT. Additional members include: Rose Gowdey , Kari Miner, Amy Rogers, and Keri Toolan.

3.2 Independent Review Key Documentation

The following documents and sources were used in the process and preparation for this Independent Review:

Document Name	Description	Source
ABC Form Calculations	IT Activity Business Case & Cost Analysis. Dated 12/29/15.	AOT
ABC Form AHS	IT Activity Business Case & Cost Analysis .	AHS
Project Charter	AOT Project Charter. Dated 8/4/15.	AOT
eLMS Cost Analysis 020516 Final	Cost Analysis Spreadsheet created by Mincar Consulting	Mincar Consulting
Cornerstone Technical Proposal	A scope and schedule estimate from the proposed vendor, Cornerstone, for the implementation of an enterprise LMS system.	AOT
Cornerstone Cost Proposal BAFO	A cost estimate from the proposed vendor, Cornerstone, for the implementation of an enterprise LMS system.	Cornerstone
Cornerstone Master Agreement	A draft Master Agreement contract with Cornerstone for LMS System and Services	AOT/BGS
AOT SharePoint Site	Various Historical Project Documents regarding AOT Requirements Process, Project Management, Project Funding, and Procurement.	AOT
AHS SharePoint Site	Various Historical Project Documents regarding AHS Requirements Process, Project	AHS

	Management, Project Funding, and Procurement.	
Project Team member interviews	Notes from the IR team interviews	Mincar Consulting
Internal Memos and Emails	Various emails regarding the history of the project	AOT & AHS SharePoint

4. Project Information

4.1 Historical Background

Today the VTTC (VTrans Training Center) utilizes several inadequate and home-grown systems to create classes, register students, record training results and maintain training results. These systems include TMS (an AccessdB to manage training records which has since been retired), MATS (a dB to track time and materials of employees and training records), Microsoft Access and Excel spreadsheets with historical data. No student self-service funciton exists so all communication is done via email and phone calls. Data is housed in several different places. Employee training records are often inaccurate, or not up to date, and do not follow the employee when they move to different state agencies. VTTC has outgrown the functionality of these systems and require a more robust single system.

The Agency of Transportation is seeking to implement a Learning Management System. Ideally, this solution will be a vendor hosted SaaS (Software as a Service) LMS. The solution will allow for communicating, registering, training, tracking and reporting of all training efforts as well as delivering electronic training programs.   For many entities, specific trainings are legally mandated or a condition of funding; the ability to deliver, audit, and report on required trainings is a critical need. Although AOT will be the first agency to adopt this new, robust learning management system, other State Agencies have also indicated a need and built plans to implement an LMS in the near future.   AHS, for example, created their own set of requirements independently but kept aware of the AOT effort underway. Since multiple agencies are now in the market for an LMS, a broader state-wide perspective needs to be considered when defining functional requirements, procuring a vendor, architecting a solution and launching the final service.   While an individual agency LMS implementation would most likely fall under the $500K mark, an Enterprise solution and rollout will push the project cost well over $1M, prompting the need for an Independent Review.

AOT, in conjunction with DHR, decided to post and process an RFP for a Learning Management System that may be leveraged by other State Agencies.   An RFP committee was established. A vendor (BerryDunn) was hired to assist AOT with the development of business requirements. These requirements, although originally created by AOT, were reviewed by other interested agencies to ensure that the requirements developed captured the needs for their agencies. Their responses were:

Agency	Did requirements meet Agency need?
AOT	yes
DHR	yes
AHS	Most likely; Risk #9 notes that AHS wants to be able to work with Cornerstone directly in order to do further and final planning.
DEMHS	Yes

CJTC	Most likely; would like another demo
DMV	Yes

The RFP team read the bids, developed selection criteria, called in three vendors for demos (all agencies were invited to attend), and decided on a vendor called Cornerstone OnDemand.   BGS send Cornerstone a letter of intent (LOI) and AOT/BGS are developing a Master Agreement and Statement of Work.   If the conclusion of the Independent Review is a recommendation to proceed, then the AOT team is planning to finalize the contracts in March and begin work shortly thereafter.   Each follow on agency can create an individual SOW for their specific agency implementation.

The following tasks were completed prior to this independent review:

Date	Task	Owner
11/3/2015	AHS ABC form and charter created for an AHS Training System	AHS
5/2015-6/2015	Business requirements developed by AOT (contract with BerryDunn ended on 11/5/15)	AOT
6/2015	Review requirements with other interested agencies (DHR and AHS)	AOT/DHR/AHS/CJDEMHS
8/4/2015	AOT Project Charter and AOT ABC form created	AOT
10/5/2015	RFP developed and posted	AOT/BGS
12/2/2015	8 bids received; Three vendors identified for demos; Demos occurred at SOV	AOT/BGS
12/3/2015	Vendor selected (Cornerstone OnDemand)	RFP Committee and BGS
12/8/2015	Letter of Intent (LOI) sent to Cornerstone	BGS
2/19/16	Master Agreement and AOT SOW being developed	AOT/BGS
2/19/16 (planned)	eLMS Independent Review Complete	Mincar Consulting
3/15/16 (planned)	Contract review and negotiations with vendor	AOT/BGS
3/31/2016 (planned)	Project Start	AOT
3/31/2016 (planned)	DHR/AHS SOW developed	DHR/AHS/BGS

4.2 Project Goals and Success Criteria

The following objectives and success criteria are from the AOT Project Charter:

#	Goal	Success Criteria
1	Training Records Create, import and maintain accurate and up to date employee training records for the Agency and Municipalities.	Successful import of data from TMS, MATS, Excel and Access from existing data records. Includes accurate recording and maintenance of training records.
2	Class Administration	Utilize system in the administration of current traditional classes. Ability to grow into

	Ability to administer traditional and eLearning classes for the Agency and Municipalities.	eLearning area. Ability to post curriculum and administer eLearning classes.
3	Training Plans Implement automated training plans by job class.	Assign various training plans to individuals, based upon their job class. This would pre-determine particular training that employees must complete and would track their progress on completion of these classes/courses.
4	Track Certifications Track certification and recertification, in particular, in the area of mandated safety training, supervisory training mandates and VLR Road Scholar Program.	Track certification and recertification requirements based upon predetermined timing requirements.

While similar, the project objectives for AHS are specifically:
1. Identify and implement a universal, robust learning management system (software and business process) for the Agency of Human Services.
2. Meet "Agency of One" objectives by implementing an extensible solution that meets the training related needs of each department of AHS (i.e. user and department-specific training production, communication, delivery, and reporting; asynchronous learning, computer-based training, synchronous learning and blended course modules).
3. Enable timely and accurate reporting of personnel training requirements and progress, ensuring compliance with statutory, legislative and funding requirements.
4. Deliver a learning management solution that is compliant with SCORM standards.
5. Effectively manage change by delivering audience appropriate training and diligent stakeholder management across all levels of the Agency.
6. Document all business and technical processes for ongoing maintenance and operations of the learning management ecosystem (human and software integration) and hand off to an identified Operations owner.
7. Achieve productivity benefits by reducing personnel time dedicated to manual activities that are not currently system supported.
8. Achieve user satisfaction benefits through implementation of a superior software and implementation of a robust business process.

With Measures of Success defined as:
- SCORM compliance.
- ADA compliance.
- Federal 508 standard compliance (these Standards are part of the Federal Acquisition Regulation (FAR) and address access for people with physical, sensory, or cognitive disabilities)
- Variance to schedule < 15%.
- Variance to budget < 10%.
- Variance to scope < 5%.

While the AOT and AHS goals and measurements share some commonalities, there are some different needs and success factors.   However, of the 8 objectives identified above, only 2 of are measurable and only one is part of the measures of success.   Some of the AOT outcomes are measureable and others are not and they are in the process of solidifying measurable outcomes. Measureable outcomes must be documented for all agencies, and an effort to define overlapping Enterprise project goals and individual agency goals should be defined and discussed by the LMS Collaboration team.   As noted in Risk #4, all project charters should be updated with measurable objectives and reviewed on a regular basis.

4.3 Project Scope

4.3.1   Product Scope
Implement a vendor hosted Learning Management System with the following functionality:

- Create and deliver traditional or eLearning training classes.
- Schedule, reschedule or cancel training classes.
- Employee/Municipality self-registration and approval for training class.
- Create and administer testing.
- Record training class results for attendance, certificate issuance and certification.
- Proactive notification to trainee for training mandates and recertification.
- Training plan management by job class.
- Produce a user transcript.
- Instructor management and facility management.
- Reporting on training mandate/training plan.
- Employee/supervisor dashboard to view class availability and progress on training plans/mandates or robust reporting capability.
- Record keeping for non VTTC classes.
- System integration with VTHR and AOT data warehouse to provide a variety of employee data and to receive employee training records.
- Ability to receive employee training records information from DHR/CAPS.
- Ability to grow system to a state-wide enterprise level at a later date and/or integrate with other state LMS systems.
- Single sign on functionality tied, if possible, to active directory.

The following product features are considered out of scope:
- Ability to track continuing education credits toward outside certification that exist in another system, i.e., PMP, CPA, etc. during Phase 1 of project implementation.

4.3.2   Project Scope

As defined in the Master Agreement with Cornerstone, the Project Scope and deliverables of work is:
- Complete in accordance with this Contract any applicable project management planning documentation;
- Resolve all material functional and operational deficiencies prior to deployment in the production environment;
- Complete within budget as defined by each Statement of Work;
- Configure to meet all specified requirements and needs of the State;

- Migrated historical data, if included as part of each Statement of Work;
- Successfully interact with State HRIS PeopleSoft (HRIS) to capture employee and existing training data.
- Meet and adhere to all requirements and timeframes set forth in service level terms set forth;
- Provide a solution that is fully documented, including but not limited to requirements specifications, architecture, design, configuration, operational environment and user manuals, as appropriate;
- Provide Acceptable support, service and maintenance as required.

4.3.3 Major Product and Project Activities and Deliverables from the Cornerstone Proposal

Product Phases: The following table identifies the major system development stages that are being proposed for this project. Each stage is repeated in each LMS Organization Unit (OU) Implementation, meaning that each agency will go through these phases and activities.

PHASE	ESTIMATED DATES	PHASE DESCRIPTION
Initiate and Discovery	**Determined for each Statement of Work**	Informational sessions, consultant kick-off, discovery session, integration discovery and admin training.
Design	**Determined for each Statement of Work**	Preconfigure production preferences, preferences validation, finalize production configuration, test configurations in pilot, production portal sign off
Legacy Data Migration	**Determined for each Statement of Work**	State-approved migration plan and data mapping templates required.
User Acceptance	**Determined for each Statement of Work**	User acceptance testing, validate and finalize configurations, user acceptance configuration review, executive sign off, end user training, final communications.
Go Live	**Determined for each Statement of Work**	When the system is deployed to end users.

Post-Implementation Support/Warranty	Determined for each Statement of Work	Contractor shall be responsible for fixing all Defects found during the Warranty Period. All Defects found within the Warranty Period, shall be corrected by Contractor at no additional cost to the State.

Detailed deliverables per phase are outlined in the Roles and tasks timeline table below.

Approach

Cornerstone will provide a project manager to work as the primary point of contact with the State. Cornerstone will follow the project management methodology and produce the project management deliverables as set forth in the Master Contract.

4.4 Project Phases, Milestones and Schedule

The proposed project will be done in Phases. The first implementation will be AOT.

The AOT LMS Implementation schedule shown below will utilize the Cornerstone Hybrid 1,2,3, LIVE! Implementation Services Timeline. It's a 3-5 week implementation that Cornerstone has used with hundreds of implementations. The timeline is detailed by week, outlining the Cornerstone and State responsibilities:

Phase	Date	Cornerstone Deliverables	State Deliverables

Initiate and Discovery (Pre-work)	**3/21/2016 & 3/28/2016**	**Week One and Two**
		Schedule and lead calls:
		• Kick Off Call
		  o Review 1,2,3, LIVE! Learning process, implementation expectations, project parameters and required pre-work including: selecting team members, user acceptance test dates, scheduled go-live date and all required Learning E-learning courses and documentation found in the Training Plan
		• Client Discovery Call
		  o Review client process and samples of current client documents
		• Organizational Unit (OU) and User Data Call
		  o Review OU and User Data templates
		• Boot Camp Readiness Check-In
		  o Review requirements for Week 3 boot camp
		  o Determine client readiness and determine go or no go for boot camp session attendance
		
		Tasks and Deliverables include:
		• Create Client Portals (Live, Pilot, Stage)
		• Deliver access to Client Success Center (CSC), provide Welcome Kit and provide Training Plan with required Learning E-Learning courses and documentation
		• Configure portal based on submitted Welcome Kit
		• Deliver Custom Login Page (CLP) template and implement project
		• Provide template for OU and User Data
		• Support client in OU and User Data formatting
		• Support Salary Data Formatting (COMP Only)
		• Validate OU and User Data format in preparation for load
		• Load OU and User Data
		• Deliver Single Sign On (SSO) documentation and code
		• Review Discovery Questionnaire Guide and samples of current client documents
			Week One and Two
			Attend calls:
			• Kick Off Call
			• Client Discovery Call
			• Organizational Unit and User Data Call
			• Boot Camp Readiness Check-in
			
			Tasks and Deliverables include:
			• Assemble project team knowledgeable of Client's internal Learning Management processes and empowered to make real time decision
			• Review Welcome Kit and Training Plan activities including required Learning E-Learning courses
			• Completion of the following activities:
			  o Identify and provide the list of participants for Boot Camp
			  o Submit Welcome Kit and provide client account settings, preferences, and logo
			  o Access Client Success Center and complete required Learning E-Learning courses and documentation provided in Training Plan
			  o Submit Discovery Questionnaire Guide and samples of current client documents
			  o Submit Custom Login Page template
			  o Submit Organizational Unit and User Data in delivered template and required format
			  o Review Single Sign On specifications and submit decision on SSO technology
			• Items marked as required in the training plan must be completed prior to the start of Week 3 boot camp.
			
			Required for Client to finalize / bring to Week 3 Boot Camp for configuration sessions:
			• E-Learning courses in a SCORM/AICC format
			• Documents for Document Repository
			• Events/Sessions structure
			• Content list for Curriculums

Design (Cornerstone	**4/4/2016**	**Week Three** Tasks and Deliverables include:	**Week Three** Tasks and Deliverables include:

Phase	Date	Cornerstone Deliverables	State Deliverables

Onsite at Client)		• Review Welcome Kit configurations, preferences, OUs, user data and security access roles
		• Review and guide client thru application practice scenarios
		• Review and advise client on configuration and set up for:
		   o Groups
		   o Content Loading (E-Learning, ILT, Materials)
		   o Catalog Permutations
		   o Curriculum Structure
		   o Proxy Assignment
		   o Emails and custom reports
		• Review and User Acceptance Testing (UAT) presentation
		• Provide UAT scripts for:
		   o Reversioning a course
		   o Adding a session and updating a roster
		   o Assigning/Requesting Training
		• Review change management presentation
			• Review Welcome Kit configurations, preferences, OUs, user data and security access roles
			• Client completes application practice scenarios
			• Items for Client to build / test during configuration sessions:
			   o Groups
			   o Content Loading (E-Learning, ILT, Materials)
			   o Catalog Permutations
			   o Curriculum Structure
			   o Proxy Assignments
			   o Emails and custom reports
			• Client reviews UAT presentation and scripts
			• Client demonstrates Learning portal set-up to key stakeholders (if required) Client demonstrates
			• Client review change management presentation
			• Client is responsible for all change management activities

User Acceptance Testing and Prepare for Go Live	4/11/2016 & 4/18/2016	**Week Four, Five**
		Tasks and Deliverables include:
		• Provide twice daily phone support, if needed
		• Morning call to align day's activities
		• Afternoon call to discuss any questions, resolve any issues and provide any additional guidance
		• Calls will also include support for UAT and scripts:
		   o Reversioning a course
		   o Adding a session and updating a roster
		   o Assigning/Requesting Training
		• Ongoing validation of Live portal data
		• Provide guidance for ongoing project communication, client training and system launch
		• Review final demonstration
		• Portal is configured and project complete
		• Project sign off is complete and ready to Go-Live
			Week Four, Five
			Tasks and Deliverables include:
			• Participate in twice daily phone support, if needed
			• Morning call to align day's activities
			• Afternoon call to discuss any questions, resolve any issues and provide any additional guidance
			• Continued execution of UAT and scripts:
			   o Reversioning a course
			   o Adding a session and updating a roster
			   o Assigning/Requesting Training
			• Execute and provide continuous project communication and system launch timeline to key stakeholders
			• Final system demonstration
			• Complete change management activities
			• Portal is configured and project complete
			• Project sign off is complete and ready to Go-Live

The Enterprise Rollout schedule below shows the AOT (Phase 1) Schedule and the Enterprise Rollout Schedule (all remaining phases).

Enterprise Rollout Schedule					
Task	Begin Date	End Date	Assigned To	% Complete	Notes
Independent Review	12/18/16	2/15/16	Barb Cormier Christine Hetzel Angela Rouelle	10%	In progress

Contract Development and Negotiations	12/18/15	3/15/16	BGS, AG, AOT, DHR	5%	First draft developed
AOT SOW Development	1/4/16	3/15/16	Christine Hetzel	10%	First draft partially developed
DHR SOW Development	1/4/16	3/15/16	Angela Rouelle		
Begin LMS Collaboration Group	1/11/16	Ongoing	Angela Rouelle		First meeting completed
AOT Implementation	3/21/16	4/22/16	Christine Hetzel		If contract finalized by 3/15/16
DHR Implementation	4/25/16	5/13/16	Angela Rouelle CAPS Staff		DHR takes copy of AOT OU and updates configuration as needed
AHS, CJ, DEMHS Implementation	5/16/16	8/30/16			Additional Implementations can begin; end date is contingent on whether implementations will be done sequentially or in parallel which is tbd.

These are high level milestones. A detailed schedule for the AOT implementation can be found on the AOT SharePoint site. The dates are aggressive but obtainable; a lessons learned should be done after each implementation. The dates cited above are dependent on a Cornerstone Master Agreement and SOW contract getting signed by 3/15/16.

- Project Date dependencies across Phase
  The first two Phases are planned to be implemented sequentially; the last three can all proceed in parallel. DHR will load all of the non-AOT employees, therefore it would make sense for them to start before other Agencies start. However, that doesn't mean that one phase (implementation) must finish before another can start work. Each of the agencies has a project team started, and most teams are already doing some of the pre-implementation tasks required. These are agency specific tasks and are not dependent on a previous implementation finishing. The tasks being done include data cleansing and defining external user license ownership/management to eliminate duplicates.
- Resources
  Cornerstone recommends a project "war room" approach to implementation. Key Resources should be physically placed together in a room away from their regular office environments. This encourages project focus and teamwork.   AOT is planning that type of implementation and is making plans to back-fill key resources during the 5 week

implementation.   Other agencies should learn from the success or struggles of the AOT team with this approach.

5. Acquisition (Implementation) Cost Assessment

Acquisition Costs	Cost	Comments
Hardware Costs	$ 0	The new solution is a SaaS, vendor hosted solution and does not require purchasing any new hardware. The system is accessible through a web browser with version levels that are compatible with the State's desktop and laptop PC environment.
Software Licensing Costs (for year 1)	$234,550	A total of 20611 licenses need to be purchased for internal and external users. This software cost also includes the purchase of the Success Center (on-line help) license and one DataLoad Wizard license. There is no limit on the number of users that can have access to the system. This cost also includes Hosting and Support Services.
Implementation Services	$215,000	This cost covers the project management and implementation specialists provided by Cornerstone on the project. It includes pre-configuration work, configuration changes in the boot camp, and go-live guidance for 5 OUs .
Additional System Integration Costs	$89,000	The interface from the State VTHR Peoplesoft system to Cornerstone, data loads, and web work.
External Professional Services (e.g. Project Management, Technical, Training, etc.)	$0	No additional costs are anticipated for external professional services. Admin training costs are included in the Implementation services.
Hosting	$0	Hosting will be done at a Cornerstone third-party facility and is included in the software license cost.
Professional Services - State	$36,557	This includes the cost of the DII Oversight Project Manager (EPMO) and the Independent Review.
Contingency	$26,928	A 5% contingency is included in all costs. This will cover any additions needed, especially for external licenses, and any additional Cornerstone consulting services that AHS or later phase implementations might need. A 5-10% contingency is typical in a low risk IT project.

Total Acquisition Costs	$602,034	

1. Cost Validation

All Costs were documented using input from State agency staff including agency financial leads, the Cornerstone cost proposal and Cornerstone Sales and Technical team, and the ABC (Cost analysis) Form completed by AOT and AHR.   The numbers were reviewed and approved by AOT, DHR and the EPMO. The Acquisition (Implementation) costs per agency are outlined below:

Cost Per Agency	Implementation	Operation (over 10 years)	Total per agency
AOT Cost	$113,880.00	$102,109.50	$215,990
DHR Cost	$158,601.00	$863,059.50	$1,021,661
AHS Cost	$77,851.00	$129,109.50	$206,961
DEMHS	$167,851.00	$939,109.50	$1,106,961
CJTC	$83,851.00	$183,109.50	$266,961
Totals	**$602,034.00**	**$2,216,497.50**	**$2,818,531.50**

2. Cost Comparison
The State of Idaho DOT, the State of Delaware Enterprise, and the State of Rhode Island are three comparable examples of multi-agency, state-wide deployments that Cornerstone has completed over the past five years.

State Statistics	VT – 2016 (planned)	Idaho – 2015 (DOT)	Delaware (Enterprise)	Rhode Island (Enterprise)
When was the system launched?	March, 2015	August, 2013	December, 2014 (contract signed March 2014)	
Length of implementation	AOT - 5 weeks DHR – 5 weeks AHS – 14 weeks (3 mos) DEMHS – 3 weeks CJ – 3 weeks	3 months	6 months	
Scope/Modules	All internal employees, plus municipal employees and external contractors	All internal employees, plus county DMV employees and external contractors; Learning Cloud	All state common needs training	
Key Project Team	Each agency has a project manager and technical lead	One project manager and one technical lead	One Project Manager and one technical lead	

Current system	5 Disparate systems AccessdBs, Spreadsheets, MATS and SkillsManager		45 different LMS "systems", Access dB - nothing automated	
Which agencies are served?	AOT/DHR/AHS/CJ	Transportation	DOC, DCF, financial system, and pension office; Eventually all agencies - Health and transportation in by July	
# of internal/external/total users (licenses)	I: 8635 E: 13320 T: 21955	I: 1750 E: 1250 T: 3000	I: 17000 E: 2500 T: 19500	T: 1800
Price per license	$10	$14	$16	$14
Total Acquisition Costs Year 1 (includes Yr licensing)	$602K	$135K	$702K	$70K
Ongoing Maintenance Costs (Software Service Costs)	$234K annually	$65,000 annually	$320K annually external users use self-registration (per class - pay as you go)	$26,950 annually
Hardware Costs	None	None	None	None
Implementation & Integration Services	Inbound feed; Data loads; Web work; Training; SSO (for AOT)	Training; Data load; Initial preference setup	Inbound feed; Data Load (from 2000); SSO; Additional ad-hoc reporting for EEO-4. 5 customer online content training licenses; 20 content publishing licenses (DE has articulate elearning; in order to publish your own you must have a license); Virtual instructor lead training (VILT) - i.e. webex integration function is a little weak	Inbound; Outbound; SSO; Web work; Training
Additional External Professional Services (e.g. Project Management, Technical, Training, etc.)	Will utilize a Cornerstone PM but cost is included in implementation fees	None	Used a Cornerstone PM	
How many internal staff support the LMS?	Possibly 2 part-time admin per OU; .75 FTE per OU	Many different staff have varying levels of administrative access. All maintenance and administration requires just under ½-FTE;	Central admin - one admin, one support (some of the large agencies have their own OUs but that is something new) - they are now helping the whole state, so a lot of their time is helping other agencies	

		.5 FTE per OU	(roles have changed) - meet with the Cornerstone success manager once a month 1 FTE per OU	
Cornerstone relationship/insight		We have always enjoyed a good working relationship with Cornerstone. They are a rapidly growing company, so our dedicated support person has changed several times in the past 2 ½ years, but they do a great job handing that role off. They are responsive and offer great help and solutions for our challenges.	Very pleased ; Professional Support package (DE likes to call on the phone as well as putting in a ticket) - online help is great and Cornerstone community online is really helpful ; There are user community groups where users can post functional suggestions and users can vote on them. They attend some local user groups around DC. Cornerstone also has a conference called Convergence. Cornerstone helped with best practices.	
SW Updates			Occur every 3 months and they have been great (new functions include sign in sheets, reversioning of materials, etc)	
Data Standards			Had a governance meeting with Cornerstone; When they configured the system they did it for across the state. Individual agencies can create classes, certs, etc, but they can't set up preferences and config and workflow (one level of approval). They restrict the configuration across the state. The more configuration each agency does, the harder it is to do an upgrade. They only have one web front end, so central can put notices out there. Creating Subjects and groups needs to be governed. This was identified as Risk #39.	
User acceptance/ Launch methodology			They did a quiet soft launch with early adopters that take a lot of training. Also launched in December which is a quiet training	

			month. No huge announcement. Now they are starting to push out to everyone.	
Auditing			They based their user numbers on employee data feed from PS; started with 10K and upped to 20K ;Cornerstone may also run a report to see how many self-registration people there are (custom report for that, i.e. pay by course, not class)	
Lessons learned			• Data Migration - Make sure that IT people work closely with training admin **(you can't delete data as an admin, you can edit objects but you can't delete) ;** load employees, then load courses & course names, then sessions, then transcripts. • TEST all of the steps & pieces in pilot before you move to production. • SSO on didn't work for everyone at first but they got it working (they were matching email address to employee id and the email address field wasn't updated in every PS account) • Take the online training (only 2 of 8 did the training and it showed); • Data Cleanup occurred	

Green – indicates costs are below average
Yellow – indicates costs are at or above average

3. **Cost Assessment**   Based on a review of the Cornerstone proposal, the proposed project schedule, the Cornerstone BAFO pricing and evaluating other states that have implemented Cornerstone solutions, it is the opinion of Mincar Consulting that the costs for implementation seem reasonable. The per user license fees are actually the lowest fee found in comparison with

other states. The implementation services and respective costs are on par with what the other states experienced.

Additional Comments on Acquisition Costs:
- Self-registration pricing: The State should explore (with The State of Delaware and Cornerstone) self-registration pricing for external users; if the functionality works for the State, this could be an opportunity to reduce the fees.
- VILT fees: The State should ask about VILT pricing/additional fees. Although VILT is not in scope in the early years, it was mentioned by some State training employees as something the agency could explore in the future.

6. Technology Architecture

6.1 Architecture Overview

Cornerstone provides the LMS Service using a multi-tenant SaaS architecture.
SaaS is a software delivery model in which applications are hosted and managed by a vendor and made available to customers over the Internet. Software-as-a-Service has proven repeatedly to be a successful and lasting solution for organizations of all sizes and types – from the largest multinationals and government agencies, to small businesses and non-profits. The State has had success with SaaS solutions for new IT Implementations, such as Care Management for DVHA.

The Cornerstone LMS platform is built on a system of organizational units (OU). For multiple business units with different missions, different organizational units can be configured in the same instance with different OUs. Organizational Units are:
- The foundation of Cornerstone
- Capture the Organizational Structure
- Define User Relationships

Some standard Organizational Units include:
- Division/Agency - A division is typically an entity or a department, service in an organization. In Cornerstone, a large number of preferences can be defined at the Division level.
- Location - Locations are typically geographical entities used to group users, from regions to countries, including cities, buildings or even desks and classrooms
- Position - Is the Position occupied by the employee in the company. If Positions are normalized in the State, the Position OU can be used to perform targeted availability of learning

A user can be pulled into multiple organizational units (groups). Groups are used to define groups of users which can be dynamic or static. Dynamic groups are configured using any combination (AND/OR) of user criteria as well as OU criteria (*ex: all "Road Maintenance" based in the "Burlington" office with a Last Hire Date prior to "May 24, 2014"*). Static groups are defined as a list of named users (i.e. not dynamic).

Because of this flexible organizational model, the State of Vermont will be able to grow this proposed LMS in multiple phases, including adding organization units or new and distinct portals within an OU and yet maintain the flexibility desired by agencies.

The LMS Collaboration group has developed the following OU structure for the State:
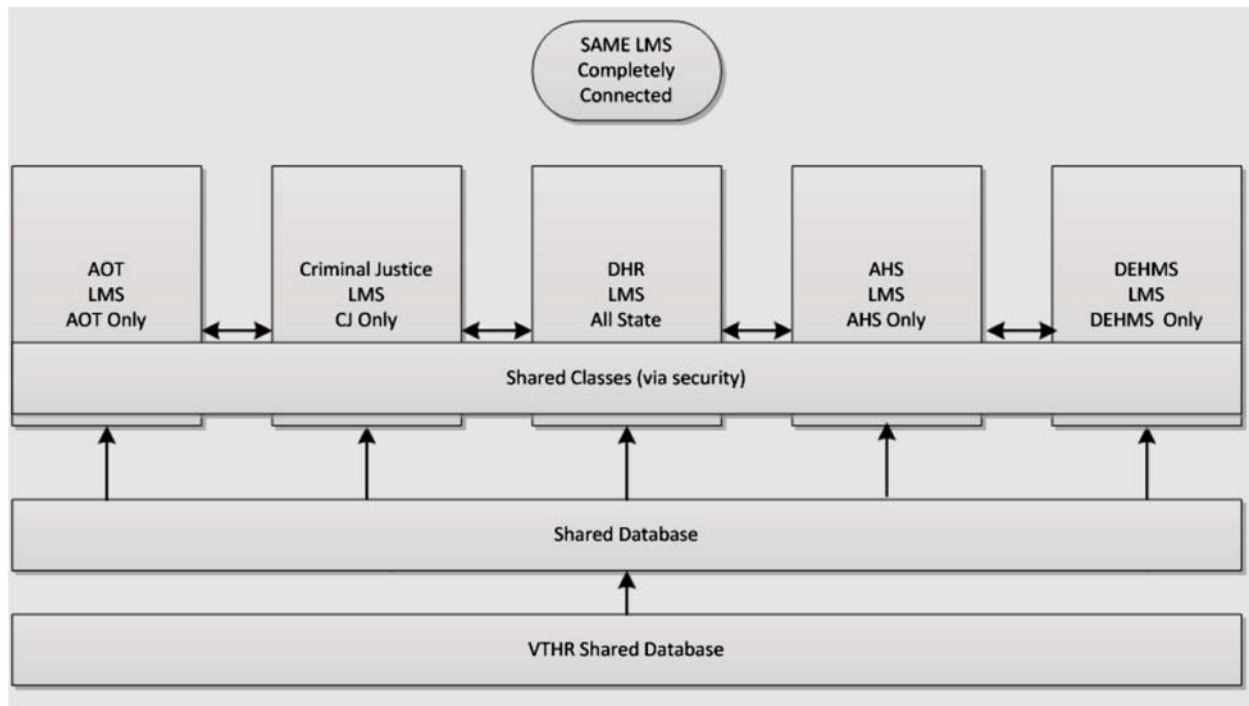
This structure should be communicated, agreed upon, and managed by all agencies considering an LMS. Running a decentralized type of Learning Management System, i.e. multiple OUs, allows for the implementation and administrative flexibility each agency wants, but it also introduces the need for some central coordination for vendor contact and upgrades. This is highlighted in Risk #6.

6.2 Data Standards

As noted in the Learning Solutions Magazine, LMS standards include policies, procedures, guidelines, conventions, and criteria related to course properties and structures. Standards ensure that all administrators and stakeholders are using the LMS in a consistent and uniform way, which in turn improves its usability and manageability.

Cornerstone did not emphasize the need for data standards in their proposal.   A few of the LMS Team Leaders or members mentioned standards, but a centralized data standard or strategy for the State has not yet been created.   While it's not imperative that each agency have the same retention policy, it is important that these standards be discussed, developed and documented prior to implementation as identified in Risk #39.

Policies

Policies provide a set of rules that all LMS administrators and stakeholders must follow. As a starting point, there are four common LMS policies that the State should consider.

- o *Content inclusion policy*
  A content-inclusion policy defines what content should reside in the LMS and what content should not. Some organizations start out using their LMS for training—its intended purpose. But, when other departments discover the system's tracking and reporting capabilities, they start using it for other purposes, such as delivering corporate communications, organizational meetings, and other events. The content inclusion policy addresses this problem by clarifying the rules for what content is appropriate for the LMS.

- o *Content ownership policy*
  A content ownership policy defines the requirements for establishing and tracking ownership of each learning activity in the LMS. It defines the responsibilities that content owners have, how ownership passes from person to person, and what happens to learning activities that have no owner. One of the chief complaints from organizations with outdated content in their LMS is that, after they publish the content, no one is responsible for its continued relevance, accuracy, and timeliness. A content ownership policy addresses this problem by establishing the ongoing responsibilities of LMS content owners.

- o *Content lifecycle policy*
  A content lifecycle policy defines how often you should review content and what criteria to use for removing content from circulation. Without a content lifecycle policy it is unlikely that content will be reviewed, updated, and archived when appropriate.

- o *Training information retention policy*
  A training information retention policy defines how long you must retain student transcript data. If the LMS contains training history data that is older than other non-training data in your enterprise, then you may not have established, implemented, or acted on your policy. Most organizations have a broad-based enterprise information retention policy, which can provide some guidance for how long you must retain training data.

Procedures

Procedures outline the steps for administrators and content sponsors to follow when interacting with the LMS. Some common procedures include requesting a new learning program, updating or deactivating an existing learning program, adding or inactivating a user, requesting a custom report, and assigning administrator permissions to a user. These procedures may be supported by online request forms, documented workflows, roles and responsibilities, step-by-step instructions, and information for setting stakeholder expectations such as turnaround times, confirmations, and other communications.

Guidelines

Guidelines provide a benchmark for administrators to use when entering information into the LMS. For example, you may provide guidelines related to creating titles and descriptions for learning programs.

Conventions

You use conventions to ensure the consistency of items such as course numbers. A course number can be useful in sorting report and search results in some systems. It is sometimes helpful to embed keys to the nature of the course in the course number.

Standards for course properties

Every LMS contains a set of configurable course properties. Some course properties, such as title and description, are consistent for all types of courses. Other course properties vary based on the type of course. For example, an online course has a launch method and URL, while an instructor-led course has an instructor, location, start date and time, and end date and time.

From a system point of view, some course properties are required fields. Your LMS will not allow you to publish a course without setting these properties. Others are optional.

When considering your organization's needs, you may designate some course properties as required by the State, even if the system does not require them. It is important to document these standards and communicate them to all LMS administrators. Adherence to these standards will ensure the consistency of course configuration in the system, which will improve your reports and make the system easier to use.

Standards for course structures

Course structures are the frameworks in which you assemble course activities. A course structure may contain a variety of activities such as classes, self-paced modules, tests, or surveys. You may arrange activities in an enforced sequence or at the user's option. A higher-level curriculum or learning path structure may contain multiple courses, each of which contains its own learning activities.

Since many LMS products offer a variety of ways to accomplish the same result, it is important to define, document, and communicate standards for how you should structure your organization's learning programs. When courses of a similar nature are structured consistently, students taking those courses become more familiar with how to access and complete them.

Once you have established your standards, it is important to communicate them through administrator training, job aids, and administration guides.

Taxonomy

You may organize content in your LMS in a number of ways. The LMS may contain a configurable catalog structure and a number of metadata tags that you can associate with courses. Together, these organizing components comprise the taxonomy of your content in the LMS.

The Cornerstone LMS system will define the taxonomy for the State through guided configuration.

Configuration management

It is important to document your configuration decisions and keep the documentation up-to-date whenever changes are made. LMS configuration settings you should document include access and authentication, HR data feeds, user account and profile settings, security roles and permissions,

audience rules, catalog and metadata taxonomies, transcripts and certificates, active notifications, and look-and-feel settings. Maintaining LMS configuration documentation enables you to plan and make changes to the configuration more easily, understand the impact of the changes on other settings, and provide clear direction to your vendor or IT department.

Cornerstone will provide a template and/or guidance on how to best document the configuration.

Housekeeping

The best time to clean up your data is when you migrate to a new LMS product or perform a major upgrade to your existing LMS. The state should identify clean-up requirements and tasks and build that into the project plans, leveraging the resources already assigned to the implementation.

Governance

System governance ensures that the LMS implementation is in alignment with the goals and needs of the organization. Governance establishes appropriate representation from all stakeholder groups and provides a structure for decision-making. Without adequate governance, it is more difficult to establish and enforce standards.

The State has created an LMS Collaboration team to provide governance to the LMS implementation.

Summary

Taking steps to establish and maintain standards, taxonomy, configuration management, housekeeping, and governance will   help to ensure that the LMS remains easy to use and operates for years to come.

6.3 State IT Strategic Plan

It is our opinion that the State of Vermont's procurement of the Cornerstone SAAS model Learning Management System for AOT and the Enterprise follows all of the State's IT Strategic Plan Principles:

- Leverage IT successes of others, leaning industry best practices from outside Vermont

Cornerstone has become a leader in Learning Management Systems, serving 22.2 million subscribers across 191 countries, with 175 public sector clients and local agencies across the U.S. Mincar Consulting contacted three of these implementations:
- The State of Idaho – Dept of Transportation/Agency Implementation
- The State of Delaware – Enterprise implementation
- The State of North Carolina
- The State of Delaware (contacted previously by State learning employees)

These referenced clients had extremely positive things to say about Cornerstone: generally the product was outstanding and that Cornerstone had extremely high customer service; the project implementations referenced were completed on time and within budget.

Cornerstone was rated very highly in the 2015 Gartner Magic Quadrant and are considered leaders in the LMS industry:

Figure 1. Magic Quadrant for Talent Management Suites

Source: Gartner (August 2015)

- **Leverage shared service and cloud based computing, taking advantage of IT economies of scale.**

Currently the State uses many different rudimentary processes and tools to manage employee learning. These tools include: Outlook email, Outlook Calendar, various access dBs (TADS), a very archaic LMS called SkillsPath, and very manual, labor-intensive methods for reporting.

The proposed LMS solution from Cornerstone calls for a web-based, SaaS solution. This model reduces or eliminates separate IT support costs for the State by reducing or eventually eliminating expensive and time-consuming hardware and software administration.

- **Apply enterprise architecture principles to drive digital transformation based on business needs. Couple IT with business process optimization, to improve overall productivity and customer service**

Moving to a delivery environment where design, development, implementation and support of changes is outsourced will improve the State agencies' ability to focus on their core business and

keep pace with required changes.

- **Align the Vermont workforce to the evolving needs of state government**
  The core competency of the Agency of Transportation is not technology and should not be man-handling an LMS process in 2016. The outsourced solution from CCG will provide the opportunity for State of Vermont staff to better focus their skills and abilities on policy and program implementation and providing quality learning rather than being burdened with learning service delivery activities.
  This will also enable the State to begin exploring and offering more e-learning and Virtual Instructor Lead Training to employees and external partners.
- **Optimize IT investments via sound Project Management**
  All agencies have a designated and experienced Project Manager named.   Cornerstone will also assign   an Account Manager, a Client Success Manager, and provide access to their team of Global Product Specialists to ensure the project proceeds as planned.
- **Manage data commensurate with risk**

  The project team has researched the definition of PII and believe that the data in the LMS is PII, and this is in agreement with Vermont statute definition of PII (9 VSA 2430(5)(A) and 1 VSA 317). The team is currently building a strategy to either prevent the data from being PII or prevent the system from showing PII. It would also be valuable to determine the PII <u>confidentiality impact</u> level. The data in the LMS, while sensitive and confidential, does not contain social security numbers or HIPAA data, therefore there are less rigid security and encryption requirements.   Cornerstone does have a high level of security built into their technical architecture by default. They have many gov't and public sector clients and seem to have an extremely good understanding of the regulatory requirements and the risks associated with accompanying data.   This was identified in Risk #23 in the risk register.

- **Incorporate metrics to measure outcomes**

Today it is challenging to pull Learning Metrics at an Enterprise level. The proposed LMS solution has a very powerful reporting feature and will provide the desired metrics for the agencies and the Enterprise.   EEO0-4 reporting and compliance will be much easier with an LMS.   The value proposition is to be fully compliant should DHR or any individual agency get audited for compliance. Using the new LMS will accelerate the ability to generate the data and reports required.

6.4 Service Level Agreement (SLA)

Cornerstone provides a standard SLA for all clients. The SLA guarantees initial response and resolution to defects using defined priority and severity levels. Cornerstone's SLA guarantees 99.5% uptime (excluding reasonable and scheduled maintenance periods) per month. This is consistent with industry expectations and best practices and is adequate and acceptable for AOT and Enterprise needs
The terms of the SLA are subject to any additional terms and conditions of the final Master Agreement. As of this date there were no deviations in the Master Agreement from the standard Cornerstone service. The SLA does not become operative until the SOV has signed off on a

Cornerstone Implementation Acceptance Form and the portal is live on Cornerstone's production environment. The Service Level Agreement applies only to Live portals, however, it does cover all three portals: Production, Pilot and Stage.

Cornerstone uses the following definitions in their standard SLA:

Defects

A "Defect" is a technical defect with the Cornerstone application and/or those portions of software integrations within Cornerstone's control. Defects fall into two general categories: major (Severity 1 and Severity 2) and minor (Severity 3). The "Severity" of a Defect is determined by Cornerstone, subject to the following definitions and parameters. If the State does not agree with the assigned severity level then it can be appealed. Feedback from other states has been that issues are resolved quickly and to full client satisfaction.

Major Defects

Severity 1 (S1): A Defect that results in at least one of the following: (i) the Cornerstone URL produces no results, or (ii) Client's authorized users cannot log in to Cornerstone's application after repeated attempts. "Severity 1" does not include downtime for maintenance.

Severity 2 (S2): A Defect that results in any of the following: (i) an entire application module (e.g., Learning Cloud, Extended Enterprise Cloud, etc.) is inaccessible; (ii) no course is being delivered; (iii) no queue will process any transactions; (iv) no report within the application produces any data or the data has not been refreshed in fewer than twenty-four (24) hours; or (v) no tasks will launch.

	S1	S2
Initial Notification	One (1) hour via an Incident Report	
Status Updates	Every two (2) hours until resolution or as indicated in the Incident Report	
Resolution	Twelve (12) hours	Twenty-four (24) hours

Remedy	In the event that Cornerstone has not complied with its "Resolution" obligations set forth above, then, for each calendar day (or portion thereof) that Cornerstone has not so complied, the SOV shall be entitled, as its sole and exclusive remedy therefor, to a credit against the State's next invoice equal to 1/365th of the annual fees for Software set forth in the Agreement.

Defects are communicated from the State to Cornerstone as defined in the Support section 6.10.

It is the State's plan to define OU service level agreements in each SOW with Cornerstone. The Collaborative team believes that Cornerstone SLA is at an OU level and not at the instance level , meaning that if one OU is down but another is still up, that would still qualify as a Sev 1 situation because "a Cornerstone URL does not produce results".   This action item was identified in Risk #38.

6.5 Technical Sustainability

Modern SaaS infrastructures can scale rapidly and add relatively inexpensive storage rapidly. The State will not have to worry about buying or maintaining hardware or server space. The benefits that the State will achieve by implementing an LMS SaaS-based system include:

- o **Service, Not Software.** No software to install or maintain.
- o **Flexibility / Ease-of-Use.** Immense flexibility in configuration, self-customization, and general ease-of-use. Furthermore, Cornerstone provides unique flexibility in how AOT and DHR can deploy the system to different groups of users. Different branding, business rules, and functionality can be established for any Organizational Unit (such as Division, Location, Position, custom group of individuals, etc.).
- o **No Patches or Upgrades.** On-demand applications like Cornerstone do not require costly patches, service interruptions, or annual upgrades. New functionality comes out as an update from the vendor and is applied at the States convenience.
- o **Implementation.** Large-scale enterprise implementation is measured in days and weeks – NOT months and years.
- o **Scalability.** The system can scale to hundreds of thousands of global users.
- o **System Integrations.** Today's web services ensure tight linkages with all manner of systems.
- o **System Administration** Cornerstone was designed to be administered by the client and not the vendor.   The State can make configuration changes on its own without any assistance from Cornerstone or for any additional costs. The high configurability of the Cornerstone system is one of its distinct advantages over competitor products.

The State is comfortable that the Cornerstone LMS will be utilized for the full ten years shown in the Cost Analysis spreadsheet. Mincar Consulting also agrees that the LMS chosen will be sustainable for ten years, especially because of the SaaS model which will allow the State to keep up-to-date with system and functional updates.

6.6 License Model

The Cornerstone SaaS LMS system can be accessed by an unlimited number of users all operating at the same time. Cornerstone uses a standard per user license annual basis pricing model. AOT estimates approximately 2000 users upon launch. The enterprise (including AOT) anticipates a total of over 21,000 users.

Agency	Total Internal Users (State Employees)	Total External Users	Total number of licenses to pay for
AOT (Including DMV)	1300	700	2000
DHR	7335	20	7355
AHS	0*	1000	1000
Criminal Justice	0*	1600	1600
DEMHS	0*	10000	10000
Total	8635	13320**	21955***

* The number of State Employees in this agency is included in the DHR internal user number

** This number represents the maximum possible number of external users until an enterprise level scrub and review of overlapping external user licenses is completed. This number is user licenses only and does not represent a license or access needed for the Success Center or the DataLoad Wizard (1).

*** External Training Instructors will also need to be included in the external license count. There are approximately 75-100 external instructors across the State. This number is inconsequential to the total number of users, but not irrelevant and therefore should be accounted for upon setup.

The annual fee does not change based on the number or type of users, however, a careful scrub of the external users requiring access to the State LMS should be performed _prior_ to launch. There is significant likelihood that external users requiring training overlap multiple State agencies. The State should develop a comprehensive strategy to create and administer these external user licenses at an Enterprise level. This was identified in Risk #10.

The State of Maryland used a self-registration model for pricing for external users. The State should reach out to Maryland to better understand their pricing and then work with Cornerstone to see if this could be used for some slice of the State external users.

Competitive pricing : Cornerstone has proposed a Best and Final Offer (BAFO) price of $10.00 per user, annual model for both internal and external users. This is a very good price, and in the current

plan external users will have an account, however there is functionality in Cornerstone to access the LMS through self-registration. This option should be further explored with Cornerstone. Professional Support will be used for AOT will be offered for all implementations and is included in the software cost. Future implementations will adhere to pricing identified in the table below for the length of the Master Agreement term (ten years). Cornerstone does typically increase pricing after Year 5, therefore the master agreement should be written in such a way that even if a State agency decides to implement the Cornerstone LMS in Year 8, the pricing of $10/user will still apply.

The pricing that the State of Vermont is getting is well below what other states pay for Cornerstone:

State	Price per user per year
Vermont	$10
Idaho	$14
Maryland	$16
Rhode Island	$14

Work from Anywhere: The Cornerstone LMS can be accessed from any computer or device at any time; the only requirement is an internet connection and a supported browser. The user hardware and software requirements for the SaaS model is compatible with the current State desktop and mobile platform. This will result in utilizing existing infrastructure investment and experiencing less long-term operating costs.

The State should encourage mobile device users to access the system through a browser rather than an application. Using an application raises new security concerns for the State.

The proposed Cornerstone system is extremely user friendly and the learning curve is very low. In addition, online help is available within the Cornerstone system. There is an additional yearly charge of $2000 per year to access the Basic Training/Client Success Center, regardless of the number of active users, and the State is opting to buy the Success Center .

The number of users is audited each year by Cornerstone (internal users are determined from the feed from the VTHR system) and an invoice is generated accordingly. There is no maximum or minimum number of users, and a minimum number of users was not required by Cornerstone.

6.7 Security

Cornerstone SaaS has a thorough security architecture which has been reviewed by the DII Security team. There are a few technical security directions that will need to be set and implemented once a Master Agreement is signed. While no cause for concern, they should be discussed at the early stages of the AOT implementation as it will set the stage for the Enterprise implementation.

ACCESS AND AUTHENTICATION

Cornerstone clients only access the presentation layer of the system through the Internet. Users need a unique username and password to access the application. All passwords are stored in the database in a hashed format to minimize security liability.

Alternatively, clients can be authenticated using security tokens, utilizing a symmetric algorithm, passed by the client's local authenticator for Single Sign-On functionality. Clients can also be authenticated via their identity provider with SAML assertions.

Client browser access to the web servers utilizes 128-bit SSL encryption (version 3.0 or higher) to minimize network packet snooping vulnerability for any transmitted sensitive data.

Access by IP Address

Clients may control access to their portal by IP address. Clients with this requirement can provide Cornerstone with their "white list" with acceptable IP addresses for accessing the portal. Cornerstone configures the client's portal to only allow access from users with IPs on the white list. If the IP address from which the user attempts to access the portal is not on the white list, the user cannot access the portal and receives an error message.

Single Sign-On (SSO) Login

> The Single Sign-On (SSO) process allows a user to seamlessly launch into Cornerstone from another site without having to re-authenticate or enter login credentials a second time. Once a user is logged into his corporate network, he can enter Cornerstone simply by clicking on a link.

> The Cornerstone application provides added security as it prevents multiple sessions by the same user to be run from different machines. If a user is logged into Cornerstone from his machine, and then goes to another machine and tries to log in, his initial session will be timed out.

> Cornerstone offers clients two technical solutions based on their needs: SSO Private Shared Key Authentication (Cornerstone's) and SSO SAML (1.1 and 2.0).   Cornerstone also offers clients four types of functionality with their SSO implementations and each can be mixed and matched (independent and complementary). The State will need to determine as an Enterprise, which SSO strategy to implement. This may prove challenging as there were many different Active Directories used to authenticate users across the state, however, SSO can be activated at an OU level so each agency can decide when and to utilize SSO.

Cornerstone Login Page

Cornerstone Login Pages authentication involves providing a login ID and password. Username, UserID, or email address can be used as the login ID. "Initial" and "reset" passwords must be changed at login. Industry standard Password preferences allow the administrator to specify a variety of options and requirements for passwords.

Application Permissions and Roles

The Cornerstone application is entirely rights and roles-driven. The application features hundreds of security permissions, related to the thousands of features, which can be configured to roles or individual users. Hence, users only see what they have been given permission to see. Security roles are managed by Client Administrators.

ENCRYPTION

Cornerstone has multiple types of encryption ensuring that data is protected both at rest and while in transit.

Encryption at Rest

For clients that elect to add encryption at rest onto their contract, Cornerstone offers the ability to encrypt database files using AES-256 encryption. The databases files are encrypted using Microsoft's TDE (Transparent Data Encryption) technology. The State did not opt to pay for encryption at Rest; the State thinks the data is not high-risk (not PII) and therefore additional encryption is not needed. Consideration is being given by the LMS Collaboration team to restrict displaying an employee id along with the employee name.

Encryption of Portable Media

The only portable media allowed to contain production data are LTO4 backup tapes that are secured by AES-256 encryption that is performed at a hardware level by the tape device.

Encryption of Data In Transit

> **The Cornerstone Application**
>
> The Cornerstone application is secured with 128-bit SSL encryption of HTTP traffic. The certificates used to encrypt the traffic are issued from publically trusted certificate authorities. All information is encrypted all the way from the client, through the Akamai network and into the Cornerstone servers.
>
> **File Transfers**
>
> Cornerstone supports FTP, SFTP (FTP over SSH), and FTPS (FTP over SSL). File transfers are secured using SFTP or FTPS encryption. Authentication for file transfers can be accomplished by either username/password or PGP certificates. The certificate used to encrypt the FTPS traffic is issued from a publically trusted certificate authority. SFTP is the recommended protocol.
>
> **Email**
>
> Cornerstone SMTP servers use TLS encryption by default. All mail from the Cornerstone application is encrypted during transmission when TLS is enabled at the receiving server.

PENETRATION TESTING

Cornerstone contracts leading third party information security consulting and services companies to run external penetration tests against production environments to coincide with major code releases throughout the year. Both automated testing and manual validation is performed. Additionally, monthly external vulnerability scans validate both the patch level and protection from known attacks, and numerous penetration tests are run on a regular basis.

SECURITY INCIDENT RESPONSE

Cornerstone maintains a Security Incident Response Policy and an Incident Management Standard Operating Plan (SOP) in order to organize resources to respond in an effective and efficient manner to an adverse event related to the safety and security of a computer resource under Cornerstone's management. An adverse event may be malicious code attack, unauthorized access to Cornerstone managed networks or systems, unauthorized utilization of Cornerstone services, denial of service attack, or general misuse of systems. The plan clearly defines the appropriate steps and processes in communication. Clients are notified within 24 hours of the identified issue.

INTERNAL ACCESS TO PRODUCTION DATA
A limited number of Cornerstone Information Technology personnel, including Database Administrators, System Administrators and production support members are provided with access to the production SQL databases for troubleshooting, bug fixes, etc. as needed. This access is requested by customers or identified through Cornerstone monitoring procedures. Each of the activities are authorized, either through role description, or individual activity authorization (via email). All IT personnel access to customer databases is logged and audited on a periodic basis. Remote privileged access to production data centers requires two-factor authentication.

To date there have been no security breaches on a Cornerstone implementation.   As part of the contract process, Cornerstone should provide attestation for their ISO 27001, FISMA, and SSAE 16 compliance and was highlighted in Risk #34.

The security plan was reviewed with two members of the State Security team.   Mincar Consulting believes that the SaaS system being proposed complies with the State's security program requirements. Cornerstone has a strong, clear, and complete security strategy in place and has built the SaaS eLMS system with security in mind.

6.8 Disaster Recovery

Disaster Recovery
For all Cornerstone LMS systems:
- RTO (recovery time objective) is 24 hours.
- RPO (recovery point objective) is 1 hour or less.
- Disaster recovery testing in the US is performed bi-annually.
These objectives are in line with the State recovery requirements.

Plan Components
The Cornerstone Disaster Recovery Plan is comprised of a number of elements, all working in concert to provide a safe working environment for the State and to assure that Cornerstone meets all known industry and regulatory requirements:
- Business Continuity Plan (BCP)
- Pandemic Response Plan (PRP)
- Recovery Service Providers
- Data Center Recovery
- Data Safeguards
- Emergency Information Phone Line

Availability
Cornerstone maintains a variety of availability strategies, tactics, and solutions. They involve a combination of short-term data recovery tactics, distribution of functionality to avoid single-points-of-failure, redundancy, business function duplication, backup processes, proven documentation, and cross training of critical personnel. Recovery Point Objectives (RPOs) have been established; no recovery of computing or business function has unacceptable latency. Recovery Time Objectives (RTOs) have been established; it takes no longer than a designated amount of time to restore

business functionality after declaration of a business disaster or interruption. Critical functions and personnel will be in operational readiness, but possibly operating in "degraded mode". "Degraded mode" is where business operations may be slower than normal and may only include mission-critical functionality.

Awareness Program

Cornerstone mandates that all employees and contract personnel are aware of the disaster recovery program, and have access to information pertinent to their health, safety, and responsibilities within the program.

Compliance

One of the key strategies of the program is to assure compliance with regulations, disaster recovery (DR) industry best-practices, and compliance with governmental laws and statutes. Additionally, accepted computing practices for operational stability, availability, data backup, and data recoverability are underlying goals within the program.

A good disaster recovery plan should cover five components:

- Disaster Recovery Plan basics
- Understanding Threats and Consequences
- Prevention, Detection and Correction
- Address Data Loss
- Test the plan (Disaster recovery testing is performed semi-annually at each Cornerstone DR site)._

Cornerstone handles all five items and therefore Mincar Consulting believes the disaster recovery element of the Cornerstone SaaS is solid.

6.9 Data Center, Data Retention and Backup

All equipment and services are fully managed by Cornerstone. The data center is engineered for the optimal management and operation of comprehensive information technology solutions. They feature industrial grade environmental systems to minimize risks from electrical power failure, fire, water damage, acts of nature, and unauthorized access.

The following physical security controls are featured:

- Security personnel onsite 24 x 7 x 365
- Visitor screening upon entry for verification of identity
- Keyless security with biometric hand geometry readers with required additional pass code for access to enter the security tunnel from the welcome area, leave the security tunnel to enter the main center, enter the co-location area, and enter a customer cage
- CCTV digital camera and recorder coverage of the facility
- Cages separating tenants and racks within a secured cage area that can only be accessed by biometric hand scan
- Alarm system with motion detection

All Cornerstone servers and infrastructure are installed in racks within a secured cage area, controlled by a biometric hand scan.

The data center is fully redundant utilizing multiple ISPs for high availability. The data center is designed and built with a redundant routing and switching architecture in the core to ensure that there is no single point of failure. A multi-layer access and distribution network has been deployed that allows for the highest levels of network availability within the hosting infrastructure.

Cornerstone application environment consists of redundant load balancers, firewalls, web servers, SQL servers, as well as Active Directory servers. High availability is also made possible through a redundant system of switches, routers, Internet connections, and destination routing paths.

Data is a primary concern for Cornerstone and the State, including the backup of critical and confidential data. Cornerstone performs daily backups of the full database and hourly transactional backups to separate hot disks. Cornerstone servers are set up with live failover. Cornerstone supports active/active and active/passive failover. There is no downtime when a server fails.

Data is safeguarded with real-time replication and/or log shipped databases. This provides for low latency (1 hour recovery point objective) of client transaction data. Database and file servers receive a constant real-time stream of updated information from the production data centers either by using software and/or storage hardware based data replication. All other servers required for operation have been built, configured, and tested in advance to ensure they are ready at TOD (Time of Disaster).

Two days of hot backups are stored on a local SAN disk for immediate recovery. Cornerstone performs full backups and daily differential backups of our data onto tape. Daily backups are stored for one week, weekly backups for five weeks, and monthly backups for six months. All backups are encrypted before they are written to tape and reside in an encrypted mode on the tapes (AES-256). Iron Mountain collects tapes each week and transports them in locked boxes to a secure vault.

Cornerstone uses the following data centers:
- Equinix (primary data center)
  El Segundo, CA
- Equinix (backup data center)
  Ashburn, VA
- Iron Mountain (Tape Backup)
  Compton, CA

Equinix is a state-of-the-art, highly regarded datacenter with outstanding connectivity, security and extremely experienced staff.   They consistently are on Top of the Waters ranking of data centers where the category winners are determined exclusively by WaterTechnology readers and users. http://www.waterstechnology.com/waters/special/2358290/waters-rankings-2014-best-datacenter-provider-equinix. According to the Synergy Research group, 2014 research and studies showed that Equinix led in two of the three major regional markets (US and EMEA). Finally, Equinix was highly regarded by the State of Vermont lead Security Officer. This center provides the level of security appropriate for the State of Vermont.

There are multiple State Agency requirements for data retention and   for the ability to access the training information historical data. For instance, CJTC often gets subpoenaed by attorneys for

officer proof of certification. They therefore require that ALL of the historical certification data is moved to Cornerstone, for a minimum of three years and a maximum of forever. The State should develop a detailed Enterprise data retention policy for the State LMS instance. This was highlighted in Risk #33 in the risk register.

6.10   Support Plan

The Master Agreement Contract draft and the Enterprise LMS Collaboration team have selected The Professional Support Package provided by Cornerstone. This is the package of choice for the majority of Cornerstone's clients and is standard and included in the BAFO cost proposal user licensing.

Four core services are provided by the Cornerstone OnDemand Global Care team:
- **Application Functionality:** Answers to questions and general guidance intended to ensure the effective use of the Cornerstone application.
- **Application Issue Management:** Analysis, tracking, communication and resolution of production-related application issues.
- **Service Request Management:** Managing the scoping, tracking and delivery of Service Requests, which are requests for standard engineering services.
- **24/7 access to the Knowledge Base and Cornerstone Success Center:** The State will have around the clock access to self-service resources such as the online Knowledge Base and to our customer community in the Cornerstone Success Center where they can self-assist or seek best-practice advice from Cornerstone Subject Matter Experts and peer organizations.

The Professional Support Package offers the following support features:

Support Feature	Description
Live Phone Support	8am–8pm Monday-Friday in the EST time zone, excluding holidays and office closures.
Named Lead Administrators	Up to 5 (Enterprise) or 3 (Business Edition) individual administrators who may contact Cornerstone Global Care, including 1 "super lead administrator". The State may have more than 5 administrators across the enterprise and therefore is requesting 5 admins per OU in the Master Agreement and SOW contracts.
Online Support and Knowledge Base	Access to Cornerstone Global Care self-service resources is available 24/7 through the web interface within the Cornerstone application.

Case Management Tools	Included, via 24/7 self-service portal.
Cornerstone Success Center Community	Included, via 24/7 self-service portal.
Service levels	Standard, as set forth in Cornerstone Service Level Agreement

Beyond the Cornerstone support service, The State has developed an agency by agency LMS collaborative support plan utilizing the existing software support structure.

This strategy should be documented and placed on each agency LMS front-end portal page and should be completed prior to launch. This was identified as Risk #33 in the risk register.   Going live without a clear and documented end-user support plan can leave the users with a poor first impression. The plan and documentation needs to include clear direction on:

- Where initial calls go?
- Can a Help ticket be created?
- Is back-end support per agency or enterprise wide?
- Is support provided for both internal and external users?
- How are roles differentiated between customer support and administration?
- Who can call Cornerstone?

Some of these decisions have been made by the State and have been documented in agency System Support plan.

6.11   System Integration and Reporting

Cornerstone's open-system architecture allows easy integration with other systems. They have significant experience integrating the application to client HRIS and ERP systems for both historical data load and ongoing user data exchange. The application does not require integration with any specific system or version. It is system agnostic.

The State LMS system interface requirements are three fold (and diagramed here):
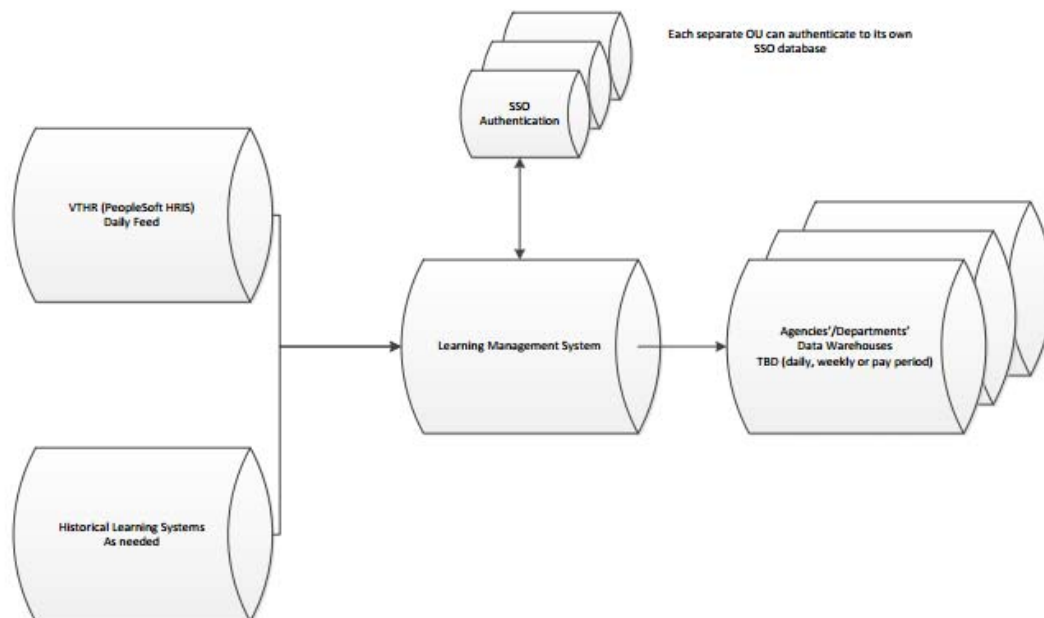
- One-time Initial Learning Master Data Load (course listings and course objects) - done once per OU
    - The Master Data Load includes the migration of master system data to the Cornerstone portal. Multiple learning object data types are allowed, including SCORM, .pdf, .docx, .gif, etc. There is a maximum of 1,000 materials and videos, and a maximum of 300 exams. Although there are maximum data elements allowed per instance the State does not have concerns with those limits.
    - For some state agencies, this load may be handled manually.

- One-time Initial History Data Load (employees and employee historical training records)
    - Import employee data from the current VTHR Peoplesoft system into the Cornerstone portal.
    - Most data feeds inbound are exchanged via Comma Separated Values via encrypted SFTP (FTP over SSH) and FTPS (FTP over TLS). Web services integration and XML data exchanges are also available. Cornerstone OnDemand can also provide the State with data templates for data exchange.
    - The State has decided that the initial employee load will be done during the AOT implementation and during the DHR implementation the location agency field can be used to access the entire group of Enterprise employees. Furthermore, administrators have the ability to merge user training records when multiple accounts exist in the system for the same person. This is useful when a user has multiple accounts and has completed training in each account. The Data Merge tool will merge the training from both accounts. An audit trail of all data merges is retained in the history section including who processed it, date and time of the event, and the User ID's of the accounts involved. After a data merge is successfully completed, users can view all training in the user account to which the training records are transferred.

- Ongoing Cornerstone Inbound Data Feed - OU/Users with PeopleSoft (employees and employee historical training records)
    - Once the feed process is set up, a job can be scheduled to automate the retrieval and loading of employee data. A log file is created which provides the results of the load. Cornerstone can have the system push/pull information on whatever basis is necessary (e.g., nightly, weekly, monthly).
    - In addition to the data feed, new users can also be imported into the system through a Data LoadWizard. This tool enables organizations to upload a list or table of information into the system, eliminating the need to manually insert individual records. Data can be loaded to different parts of the system with a consistent process, allowing you to upload, review, and import data. The Data Load Wizard can import new records or adjustments and export existing data in multiple file formats (.xls, .xlsx .csv, .txt). Editable templates and helpful hints guides are available for each file type for accurate importing.
    - Data validation by both systems ensures duplication is not an issue. Although users can be added in both systems, most clients only add new user data in one system. The system of record at the State will be the Cornerstone LMS system.
    - Administrators are able to enable users to modify their own contact information within their My Account page. Administrators configure which contact fields display on the page and which contact fields can be edited by the user.
    - The State will begin with an FTP file transfer, but eventually the State can utilize web services to transmit data to and from multiple database environments.
- The price for these interfaces per implementation is listed below. Any opportunity to build the interface once and use multiple times should be considered.

Interface	Price per implementation
Master Data Load	$4000
Historical Data Load	$2000

VTHR data import	$2000

- Reporting
Cornerstone includes a proprietary reporting engine that comes with over 120 pre-defined reports. These reports can be filtered by date range, user criteria, and more. Reports can be generated and sorted by any combination of Organizational Unit (such as position, division, location, etc.) .
All reporting is web-based with the option to print or export reports to various formats including Microsoft Excel, PDF, and Text.
Cornerstone also offers a custom reporting tool for free with every engagement, Cornerstone Analytics, which allows authorized users to create highly specific reports from hundreds of available data points.
These ad hoc reports are created by applying filters and conditions via simple "drag and drop" capability to present a precise view of desired data. Reporting will be used for moving information to the State Enterprise Hub.

The integration and reporting part of the project has been discussed and is being planned out by the Collaboration team and their agency-level technical advisors.   Determining exactly how much data can and will be loaded is a decision that must be made early on in the design and planning phase. The employee load should be well thought out and executed on the pilot systems prior to doing it in production. The State of Delaware had some very good lessons learned and words of wisdom around the order and testing of data loads. The State of Vermont should plan a follow up call with them to find out more. This is identified as an action item in Risk #11.

7. Assessment of Implementation Plan

7.1 Implementation Readiness

7.1.1 Cornerstone Implementation Methodology

Cornerstone has compiled tools and best practices for a rapid Cornerstone implementation. The 1,2,3 LIVE! Implementation approach is a three-week implementation methodology that provides a quick return on investment. The method provides templates for deliverables in the three weeks of the project including a configuration Boot Camp (Week 2) onsite at a State location. They deploy the solution virtually for two weeks (Week 1 and
3) and in person for a week (Week 2).

Cornerstone 1,2,3, LIVE! Implementation – Phases, Deliverables and Launch Plan
A detailed, week by week, task by task description of an implementation is shown below:

WEEK 1: PREWORK PRIOR TO CLIENT ONSITE AT CORNERSTONE

Week 1 Pre-Work

Monday	Tuesday	Wednesday	Thursday	Friday
30 min. Introduction 1.5 hour Discovery	1 hour Data & Content Discussion (optional)	1 hour Portal Branding	30 min. Additional Check-In (optional)	1-hour Boot Camp Readiness Check-In

Implementation Consultant should send the following to client:

- Technical Specifications (Single Sign On, inbound data feed, Custom Login Page) & Templates
- Single Sign On Code sent
- Agenda for Boot camp

Client should send the following to Implementation Consultant:

- Organizational Unit & User Data in templates
- Completed Custom Login Page template
- List of participants for Boot Camp
- Type of Single Sign On
- Content Bundle Selection – Skillsoft
- VILT administrator ID

- E-Learning courses in a SCORM/AICC format
- Documents for Document Repository
- Events/Sessions structure
- Content list for Curriculums
- Verbiage for emails

Cornerstone
ONDEMAND *Empowering People*

12

WEEK 2: CORNERSTONE ONSITE AT VERMONT AOT

WEEK 3: USER ACCEPTANCE TESTING AND READY FOR GO LIVE, CLIENT LOCATION

AOT has chosen to go with a 123Hybrid implementation. The Hybrid implementation is five weeks long; the additional two weeks are planned for an additional week to initiate/discovery and an additional week of UAT.

Cornerstone Project Communication

The communication aspect will be the mechanism for engaging and educating stakeholders. Cornerstone works with the client to develop an approach that will both motivate and engage stakeholders; ensuring cooperation, contribution, and commitment to the project's success. Feedback mechanisms will be imbedded in all individual communications to enable leadership and project management to know how the project is going.

Standard templates used for communications include:

- ***Success Blueprint*** – Document serves as a roadmap that captures business outcomes, talent initiatives, solution objectives, and measures of success. The *Success Blueprint* is a key component of our *Client Success Framework*, a partnership model that defines expectations at each phase of our relationship. Document Type = Microsoft PowerPoint
- ***Detailed Project Communication Plan*** – Document utilized to track all project communication information: communication type (Executive, Operational, Project Team, etc.), target audience (Executive, Leaders, Power Users, Users, etc.), description/benefit, frequency, delivery/vehicle, key messages, owner, and content responsibility. *Document Type = Microsoft Excel*

The following are examples of the other type of tools used during the implementation process:

Project Kick-off Meeting Presentation – Document utilized for project kick-off which covers project overview and scope, objectives, and an overview of the implementation which includes: project team structure, roles and responsibilities, Cornerstone OnDemand implementation methodology, tasks, and deliverables. This document is utilized for level setting the client's project team. Document Type = Microsoft PowerPoint

Custom Project Plan – Custom, detailed project plan which includes all task names, durations, start dates, finish dates, dependencies, and assigned resources. The plan also includes all pertinent project milestones. Document Type = Microsoft Project 2010

Project Task List – Detailed project task list which includes all task names, durations, start dates, finish dates, dependencies, and assigned resources. Utilized as alternative to project plan for team members who may not have Microsoft Project. *Document Type = Microsoft Excel*

Project Status Update – Document which is utilized during each project management meeting (typically weekly) to clearly show action items completed, current action items, and future action items for each period. Document also contains a project summary position (i.e. progress) for each period via status indicators (Red, Amber, Green) for the current and prior periods. *Document Type = Microsoft Excel*

Meeting Minutes – Document utilized to capture all pertinent notes for each project meeting. *Document Type = Microsoft Word*

Issue Action Log – Document utilized to capture all project issues raised. Data captured includes the issue/action description, who raised the issue, date opened, assigned to, status, resolution/follow up, and date closed. *Document Type = Microsoft Excel*

Cornerstone Relationship Model – Three Levels
Cornerstone OnDemand has a proven three-focus relationship model that contributes to a 95% client retention rate. Throughout the partnership Cornerstone believes there are multiple conversations taking place regarding business impact, solution strategy, and configuration. Cornerstone aligns team members in each of these three areas. AOT and each implementation will be assigned an Account Manager, a Client Success Manager, and will have access to our team of Global Product Specialists.

7.1.2   The reality of the implementation timetable

The Enterprise implementation plan presented in the proposal is realistic for AOT, and aggressive but obtainable for the follow-on agencies. To help mitigate that risk, State agency teams are working on pre-implementation tasks now instead of waiting for a formal project start date.

The AOT technical and program teams have a high level of confidence in themselves and the vendor. Their war room approach will help keep staff focused on the tasks at hand. In addition, Cornerstone has a long history of working with government agencies and a very deep client profile list.   Cornerstone indicated that the implementation manager assigned to the State has a high level of government experience and many project successes.

Project Schedules are dependent on a Master Agreement and SOW contract signing by 3/15/16. This may also be aggressive, but the contract draft and review process is occurring in parallel with the Independent Review process and has reached procurement and AG draft approval. That means as soon as the IR is complete the team will be close to sending and signing final contracts.

7.1.3   Training of staff in preparation for implementation

- The appropriate level of training is included in the proposal

A two day training session for AOT is included in the plan and is included in the proposal pricing. Training for users is not available in the proposal, however stakeholders feel, based on discussions with other Cornerstone clients, that the system GUI is straight-forward and minimal explicit end-user training will be needed. AOT plans to leverage the system, via elearning to provide end user training.

- The appropriate level of documentation for an implementation is included in the pricing:
    - System configuration documentation (specifications): created in the bootcamp
    - On-line Admin and User Manuals and classes (for each module): for administrators
    - On-line help: for end-users

- All agency employees that were interviewed have demonstrated a solid understanding and respect for project management discipline and plan to employ PMI and DII based standards.

7.1.4 Readiness of impacted divisions/department to participate in this solution/project

For each implementation the State has identified a lead project manager and a lead technical person.   Each team also has a project team list with names, roles and responsibilities. The team members are ready and excited for the project to start. There is no indication of concern or reluctance demonstrated. There will be no new positions added or taken away as a result of this implementation; any resource time saved with the new LMS will be deployed in other agency/ department activities.

To continue with their planning efforts, AHS has requested that they be allowed to talk to the vendor (and see another demo) but that request was denied and postponed by BGS and the AG. BGS/AG ask that the State procure a signed contract with the vendor prior to further agency engagement. While not ideal, this should not stop the project from proceeding.

7.1.5 Do the Milestones and deliverables proposed by the vendor provide enough detail to hold them accountable for meeting the business needs in the areas of:

- Project Management – a 5 week project plan clearly details the vendors responsibilities.
- Training – training is pervasive across the implementation. The implementation boot camp will ensure that State staff is doing the work with the vendor as a guide. This ensures that skills transfer will happen during and not after the implementation.
- Testing – week 3 of the implementation plan is spent in User Acceptance Testing. This includes creating test scripts. The testing will be done on a pilot portal.
- Design – the collaboration team is spending a significant amount of time designing and developing an architecture that will work across the Enterprise.   This is time well spent and will save time during the Week 1 pre-work phase
- Conversion/Loading – Cornerstone will provide the State with the Data Load Wizard and guide the State in using the tool and loading the data
- Implementation Planning – a detailed AOT plan and Enterprise schedule has been developed. This plan is reviewed weekly by the collaboration team and updated accordingly.
- Implementation – a SaaS solution alleviates a lot of hardware and software issues sometimes introduced by new technology.   The implementation will have very little negative impact on current operations. Although the new LMS process and the old LMS system will not be run in parallel, there is a careful, soft-launch cutover planned for implementation. AOT plans on implementing the solution within VTTC first, and then introduce the system to the rest of the agency later.

These deliverables are clearly documented in the Cornerstone Draft Master Agreement. As assessment will be done upon completion of each deliverable and approved by the PM and stakeholders. If the vendor does not meet these deliverables, it is clearly outlined in Attachment A, Section 6 called "Acceptance". Since this is standard State contract

verbiage, Mincar Consulting is satisfied that the State has defined and measurable deliverables for the vendor and the State has proper recourse should something go wrong.

7.1.6 Does the State have a resource lined up to be the project manager on the project? If so, does this person possess the skills and experience to be successful in this role?

The five key project managers have a good mix of both IT and Learning/Training business process experience and display an eagerness to manage the project. State sponsors and management have identified this project as high priority and fully supported. They indicate that all staff will be made available as needed to make this project a success.

Additional Comments on Implementation Plan:

Listed in the table below are tasks required from each agency prior to project launch. This list is also available in the LMS Cost Analysis document on the "Agency Task List" tab. AOT has completed all of these tasks. It is our assessment that AOT is ready for implementation. DHR and AHS has most of the tasks completed and should be approved to commence their phase of the project. DEMHS and CJTC should finish their deliverables and review with DII to gain approval for their implementations.

Enterprise LMS Readiness Task List for Agencies	AOT	DHR	AHS	CJTC	DEMHS
Requirements Complete	x	x (approved AOT reqs)	x	X (approved AOT reqs)	x (but want a demo)
Master Agreement	x	NA	NA	NA	NA
SOW finalized	x	drafted	drafted		
Approved ABC form	x	drafted	drafted		
2016 Budget approved	x	x	Reviewed with Paul Dragon; in discussion with Agency CFO & Secretary	x	x
2017 Budget approved	x	x	Reviewed with Paul Dragon; in discussion with Agency CFO & Secretary		
Approved Project Charter	x	x (but needs updating)	x (but needs updating)		
Clear Objectives/Outcomes	x (updated but needs approval)	x (in the charter)	x (but needs updating)		

Project Schedule	x	x (in the charter)	x (but needs updating)		
Team assignments made	x	x	x	x	x
Documented support plan	x	x	in progress		
x = complete					

7.2 Risk Assessment & Risk Register

The Risk Assessment combines input from the documents received from the State, including interviews and emails with:

- Team and individual interviews with VT AOT, DHR, AHS, CJTC, DEMHS and DMV business and technical employees,
- DII program management oversight,
- DII security,
- Cornerstone,
- Other States

An initial list of risks and risk response strategies was developed by Mincar Consulting, then reviewed with the AOT and DHR project stakeholders and DII program management. AOT subsequently identified additional strategies and action items for risk management mitigation.

The results of that process can be seen in the full risk register in Attachment 2.

Additional Comments on Risks:

No additional comments on risks.

8. Cost Benefit Analysis

8.1 Cost Analysis Overview

The State cost benefit analysis was conducted using information provided by AOT, Enterprise staff and the Cornerstone cost proposal. This information was combined with some estimates on cost benefits to create the following cost analysis for the project :

ENTERPRISE SUMMARY:	
Total Project Cost Over 10 Years:	$2,818,532
Total Implementation Costs	$602,034
Total Operating (Maintenance) Costs	$2,216,498
Total Fed Funding provided:	$1,866,592
Total State Funding needed:	$951,940
Potential Cost Recovery Over 10 years:	$225,500
Funding Excess/(Shortage, i.e. needed)	($726,440)

Over 10 years, the project will have a State funding shortage (requirement) of $726,440; the bulk of the savings from the project is through resource hours savings, but those resources savings cannot be used in an ROI calculation. The only return on the project will be to sunset some small LMS systems currently in use, amounting to $225K over the next 10 years. Using an ROI formula of:

$$ROI = \frac{(Gain\ from\ Investment\ -\ Cost\ of\ Investment)}{Cost\ of\ Investment}$$

= (225K-2.8M)/2.8M * 100 = -91% (including fed funds)

$$ROI = \frac{(Gain\ from\ Investment\ -\ Cost\ of\ Investment)}{Cost\ of\ Investment}$$

= (225K-951K)/951K * 100 = -76% ROI (not including fed funds)

A negative ROI means that the project will not recoup it's costs in 10 years; the costs are greater than the gains. Specifically, an ROI of -76% means that the State will only recoup 76% of the State funds expended on the project over the 10 year life of the project.

8.2 Funding

The Costs per agency for the LMS project are:

Cost Per Agency	Implementation (year 1)	Operation (year 2-10)	Total per agency
AOT Cost	$113,880	$102,110	$215,990
DHR Cost	$158,601	$863,060	$1,021,661
AHS Cost	$77,851	$129,110	$206,961
DEMHS	$167,851	$939,110	$1,106,961
CJTC	$83,851	$183,110	$266,961

Totals			**$602,034**	**$2,216,498**	**$2,818,532**

The annual operating costs of $11K for AOT is very manageable and will be paid for with a mix of State (TF) and FHWA federal funding. This project is enthusiastically endorsed by VTRANS Executive Staff therefore funding for the duration of the ten year life cycle is to be expected.   The remaining agency enterprise implementation and operating costs will be funded as follows:

Agency	Contact	Fed Funding	State Funding	Approved for 2016?	Approved For 2017?
AOT (including DMV)	Lenny LeBlanc	50% FHWA	50% Transportation Fund	Yes	No
DHR	Angela Rouelle		Internal Budget for ERP solution service funds, this fiscal year/next fiscal year.	Yes	No
AHS	Karen Crowley	90% Health care reform grants. 9010 Medicaid match and Bureau of Justice Assistance funding.	10% for external licensing	No	No
VCJTC	John Gonyea	100% fed funded carry forward from last fiscal year budget.		Yes	No
DEMHS	Kimmie Cruickshank	100% fed funded through Homeland Security Grant Program for external users.		Yes	No

Finals for AHS contributions may come in at 11% State and 89% Federal funding; any small differences in percentages between state and federal contributions will most likely be covered with the contingency line item in the costs.

The 2017 budget approval process is going on at the time that this report is being written. AOT and AHS both received approval from their financial offices. DHR and other agencies are pending approval. Although the agencies feel confident about 2017 approval, if the federal support doesn't come through, they are confident that the amounts can be covered within each agency state budget in other line items.   The State could also consider charging a class fee to external users of the system on a per-use basis.   This is a model used in the State of Delaware to help recapture some of the operation costs.

8.3 Tangible / Intangible Benefits

In a US survey (Bersin & Associates, August 2004), organizations cited a number of core reasons to purchase an LMS, specifically:

- Better training administration management
- To manage and deploy e-learning
- Consolidate training information within a single system
- Align training processes with general business and HR processes
- Implement skills and competency management programs
- Reduce training costs (usually through introducing an elearning program)
- Meet regulatory compliance

In the US, the most popular reason for purchasing an LMS was listed as improvements to managing training administration with more than 47% citing it as significant.
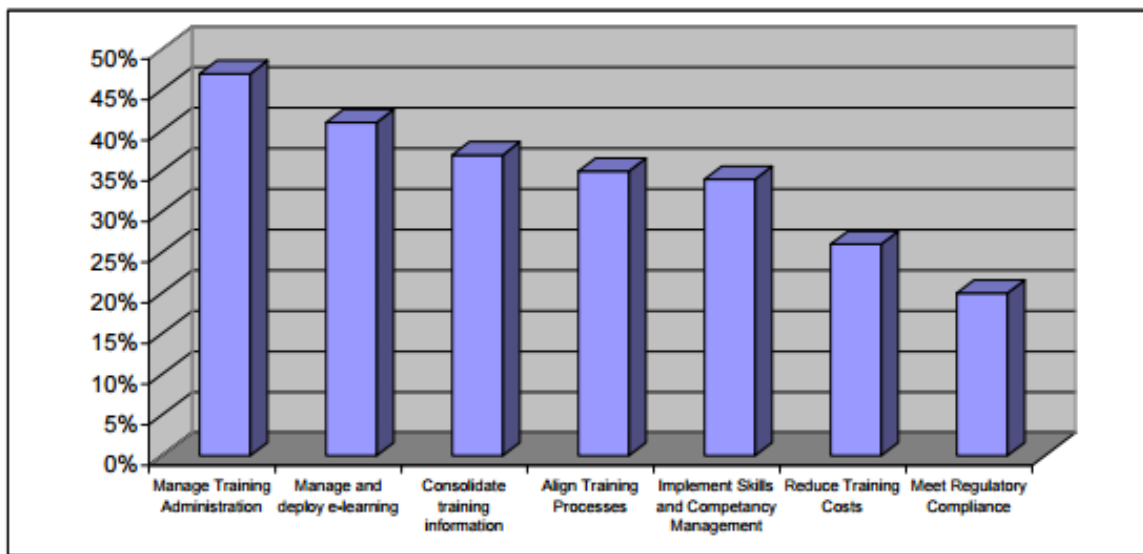
Core reasons for purchasing an LMS compared

Like the survey results, the overriding benefit that State agencies are hoping to achieve with an LMS implementation is to reduce the amount of time needed for Training Administration Costs. Those State employees that are currently managing the program overridingly feel that the efficiency and effectiveness benefits of an LMS will be significant. Currently, training records and reports have to be compiled manually and are not inclusive of an employee's total training history. The tracking of all mandated supervisory training and safety training is cumbersome and is being done manually at various levels throughout all agencies.

Tangible and intangible cost savings for a new LMS for the State are identified as:

Tangible Benefits
- Eliminate or reduce use of several archaic learning systems currently utilized (SkillsManager, TMS, MATS)

Intangible Benefits
- Reduction in employee training process time
- Reduction in manager learning administration
- Reduction in learning administrator time
- Improve Agency and Enterprise-wide reporting
- Better learning management image to employees and external State partners
- Improved ability to build employee succession plans
- Easier EEO-4 reporting compliance* - Under Public Law 88-352, Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972, all State and local governments that have 15 or more employees are required to keep records and to make such reports to the Equal Employment Opportunity Commission as are specified in the regulations of the Commission.

The following tangible savings were used as input to the calculation for the cost benefit analysis. The reduction in class processing time required for an employee, the reduced time spend by Managers, and the reduction of administration time were all cited as benefits by implementation team members, calculated by Mincar Consulting, and agreed to by State staff.

Tangible/Intangible Benefits REVENUE RECOVERY				
TANGIBLE COST SAVINGS				
VCJTC Skills Manager system				$25,500
AOT Local Roads dB				$200,000
Cost Savings of Tangible Benefits				**$225,500**
INTANGIBLE SAVINGS	**Assume loaded cost per employee is $78K and 2080 hours per year = $37/hour;**			
Saved class participant time (mgrs and employees)	.25 hours x 4 classes /year x 8600 employees	$37	8635	$319,495
Saved Manager time	.5 x 4 class /year x 1500 mgrs/supervisors	$37	1500	$111,000
Saved time for administration	8.5 admin x 700 classes x 2 hours per class	$37	8.5	$440,300
Cost Savings of Intangible Benefits				**$870,795**

8.4 Costs vs. Benefits

A negative ROI means that the project will not recoup it's costs in 10 years; the costs are greater than the gains. However, based on the positive ROI of 5% if we include resource savings (ignoring resource shifting) , it is our conclusion that the overall benefits to the State for this LMS outweigh the costs for this project.

IT ABC Form Review: The IT ABC form (Business Case/Cost Analysis) created by AOT and AHS for this project can be found out on the project SharePoint drive and was considered as a basis for the cost benefit analysis.

Additional Comments on the Cost Benefit Analysis:

No additional comments on the Cost Benefit Analysis.

9. Impact Analysis on Net Operating Costs

The internal staff resource costs in the Existing LMS System versus the New LMS system are identified in the table below:

Operational Costs (in Resources)	Current LMS System admin needed (in FTEs) – (annual)	Estimate of time saved with new LMS (in FTEs) - assume 2+ hours saved per class plus interview	New LMS System admin needed (annual)
AOT (VTTC and Jason in DMV)	2.5	1.95	0.5
DHR	2	0.5	1.5
AHS	2	1	1
Criminal Justice	1	0.1	0.9
DEMHS	1	0.25	0.75
Total in FTE	**8.5**	**3.8**	**4.65**
Total Annual Cost	$629,000	$281,200	$344,100

In the ABC Forms submitted by AOT & AHS, there were estimated cost savings of almost 2 FTE of AOT staff time that will not be needed once the LMS system is implemented. The other agencies indicated similar, albeit lesser, savings estimates.   Although additional time savings will be realized, the staff will shift their time to creating better training record reporting and developing elearning content.

The new Annual Operating Costs per agency are:

Cost Per Agency	New ANNUAL Operating Cost(sw only, not resources)
AOT Cost	$11,345.50
DHR Cost	$95,895.50
AHS Cost	$14,345.50
DEMHS	$104,345.50
CJTC	$20,345.50
Total	**$246,278**

1. Summary of the Operational Analysis

Implementing the proposed solution will decrease total annual operational costs for the next ten years from $5.8M down to $5.3M . This represents a significant decrease in operational costs. The bulk of this operation cost decrease is because of a decrease in the internal staff hours needed to support the current "system".

NET CHANGE IN OPERATING COSTS – START

Enterprise LMS PROJECT COST	AOT Year 1 (FY15)	Enterprise Year 1 (FY15)	Year 2(FY17)	Year 3 (FY18)	Year 4 (FY19)	Year 5 (FY20)	Year 6 (FY21)	Year 7 (FY22)	Year 8 (FY23)	Year 9 (FY24)	Year 10 (FY25)	TOTAL
Proposed Operating Costs - sw	$0	$0	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$2,216,498	$2,216,498
Proposed Operating Costs – resources	$0	$0	$344,000	$344,000	$344,000	$344,000	$344,000	$344,000	$344,000	$344,000	$3,096,000	$3,096,000
Current Operating Costs - sw	$0	$0	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$202,950	$202,950
Current Operating Costs - resources	$0	$0	$629,000	$629,000	$629,000	$629,000	$629,000	$629,000	$629,000	$629,000	$5,661,000	$5,661,000
Net Operating Cost Decrease/(Increase)	$0	$0	($61,273)	($61,273)	($61,273)	($61,273)	($61,273)	($61,273)	($61,273)	($61,273)	($551,453)	($551,458)

NET CHANGE IN OPERATING COSTS – END

NET CHANGE IN OPERATING COSTS - START												

Enterprise LMS PROJECT COST (not including resources)	Year 1 (FY15)	Year 1 (FY15)	Year 2(FY17)	Year 3 (FY18)	Year 4 (FY19)	Year 5 (FY20)	Year 6 (FY21)	Year 7 (FY22)	Year 8 (FY23)	Year 9 (FY24)	Year 10 (FY25)	TOTAL
Proposed Operating Costs - sw	$0	$0	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$2,216,498
Current Operating Costs - sw	$0	$0	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$202,950
Net Operating Cost (Decrease)/Increase (not including resources)	$0	$0	$223,728	$223,728	$223,728	$223,728	$223,728	$223,728	$223,728	$223,728	$223,728	$2,013,548

NET CHANGE IN OPERATING COSTS - END												

2. Net operating costs that will be covered by federal funding

Of the $2.8M funds needed for the project, $1.96M is Fed funded (70%) and $851K is State funded (30%).

SOURCE OF FUNDS - State & Fed funding needed

Funding provided:		%state	AOT Year 1 (FY16)	Year 1 (FY16)	Year 2(FY17)	Year 3 (FY18)	Year 4 (FY19)	Year 5 (FY20)	Year 6 (FY21)	Year 7 (FY22)	Year 8 (FY23)	Year 9 (FY24)	Year 10 (FY25)	TOTAL
AOT State Funds	50% FHWA (fed) ; 50% Transportation fund	50%	$56,940											$56,940
DHR State Funds	State ERP Solution Services	100		$133,050	$73,550	$73,550	$73,550	$73,550	$73,550	$73,550	$73,550	$73,550	$73,550	$795,000
AHS Grant	Fed grant for external licenses and implementation	0%		$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$100,000
DPS/EMS Grant	Fed grant for external licenses and implementation	0%		$0.00	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DPS/CJS Grant	Fed grant for external licenses and implementation	0%		$0.00										$0
STATE FUNDING REQUIRED			$56,940	$143,050	$83,550	$83,550	$83,550	$83,550	$83,550	$83,550	$83,550	$83,550	$83,550	$951,940
FED FUNDING REQUIRED			$56,940	$345,104	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$1,866,592

SOURCE OF FUNDS

3. The Project Break-even Point

The break even point for the project does not occur within the ten years of this project. It has a negative -76% ROI.

CASH FLOW - START											
	Year 1 (FY15)	Year 2(FY17)	Year 3 (FY18)	Year 4 (FY19)	Year 5 (FY20)	Year 6 (FY21)	Year 7 (FY22)	Year 8 (FY23)	Year 9 (FY24)	Year 10 (FY25)	Final year
Cash out	$488,154	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278	$246,278
Fed Source	$345,104	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728	$162,728
Net Cash needed by state	($143,050)	($83,550)	($83,550)	($83,550)	($83,550)	($83,550)	($83,550)	($83,550)	($83,550)	($83,550)	($83,550)
Cost Savings	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550	$22,550
Cumulative Cash Flow:	**($177,440)**	**($238,440)**	**($299,440)**	**($360,440)**	**($421,440)**	**($482,440)**	**($543,440)**	**($604,440)**	**($665,440)**	**($726,440)**	**($726,440)**
CASH FLOW - END											

Assumptions
- Cost Savings timing: The costs savings will be realized all in year 2 rather than spreading it out across ten years.
- Years 2-10 – Per the draft contract, costs for the proposed vendor solution will remain constant for years 2-10.
- Internal resource Costs - Loaded salary benefits for State personnel and FTE hours were totaled; the loaded hourly rate and the FTE were averaged. Details can be found in the ABC Cost Analysis Form.   Labor costs were used in the CBA but not in the implementation or operational cost analysis.
- Additional costs – This cost analysis includes the 3% DII oversight charge and the $20K cost of completing an Internal Review.

Attachment 1 - Risk Register

The following risks were identified and categorized according to the PMI Process Groups. The risks were sorted by IR Risk Status, and then by
The possible Risk Statuses are:

- Closed – a risk was identified and then handled and brought to closure by the project team
- Action Item – a work item exists for the project team
- Monitor – there is no immediate work item, but these risks should be watched and revisited periodically

The possible Overall Ratings are:

- High – The project would fail if this risk were to occur
- Medium – A project success factor (time, cost, scope) could fail if this risk were to occur, but the project wouldn't fail.
- Low – This risk could occur and it would not stop the project or one of the project success factors

 Another risk identification process should be held once implementation begins and the risks below should be re-examined periodically.

Risk ID #	Risk Process Group	Risk	Risk Description	Impact	Probability of risk occurring	Overall Rating	IR Suggested Risk Strategy	AOT Response	Reviewers response	IR Review Status
8	Planning	Pricing	There is no date on the pricing proposal and it's only good for 120 days; what happens as other agencies issue the SOW, will that pricing apply beyond the 120 days?	H	L	H	The BAFO has a date of 12/2/15. 120 days from that is 3/2/16. Therefore pricing is only valid until 3/2/16. Get something in writing from Cornerstone that pricing will extend based on receiving an LOI from the State.	Pricing will be clearly documented as part of the contract and will be honored for the life of the contract. Currently 9 years. Confirmed with the vendor and BGS that pricing quote will hold until 6/1 or the Master Agreement is signed, which ever comes first.	Agree	Closed
12	Planning	Internal resource needs	The internal resource needs for implementation were not highlighted in the proposal	H	M	H	1/31 - Detailed State resource needs are outlined in the Cornerstone BAFO page 14-15. The key roles are : project manager, core project team, BPO, tech resources, key process users. AOT has identified Four of the five of these roles has been clearly defined. Key process users needed for Acceptance test, should be defined at project launch. Agencies in follow-on implementations should ensure these roles are clearly documented in the Project Charters.	It's in the BAFO from Cornerstone	Agree	Closed

19	Planning	Funding - AOT	Project Manager says the project is not federally funded. Financial Manager says there will be some federal funds used.	H	H	H	Clearly identify funding strategy and communicate to the team.	I think this is not a risk. Project manager agrees with Financial Manager on funding. Financial manager will make final determination of where funds will be leveraged.	Agree	Closed
24	Execution	Single Sign on	Single Sign on may be more difficult to implement than anticipated. Because the sw will be accessed by various users across multiple agencies, multiple Active Directories will be available.	H	H	H	Work with the enterprise technical team to determine exactly how single-sign on will work and set expectations accordingly. Only AOT will be doing single sign on .	From Cornerstone Q&A, single sign on can be addressed individually for each implementation. For AOT, our active directory will be leveraged.	Agree	Closed
25	Execution	VTHR Interface	Initial Master data load and Interface from VTHR to LMS may take more than 3-5 weeks to build	H	H	H	Begin work now to define the data load interface.	In discussions with Frank C/Angela, DII and DHR, he supported the 5 week timeline for interface. Help has been offered if needed. There is already a feed from VTHR to MATS so that can be built on. There are also other feeds from the VTHR system to build on.	Agree	Closed
27	Planning	DMV	DMV is in the middle of transitioning training coordination from one person to another. Implementing a new system during that time may be tricky.	M	H	H	Ensure the current training coordinator is involved in the implementation.	Christine met with DMV Commissioner to discuss potential adoption and transition issues. He will champion the effort	Agree	Closed
37	Execution	State Support Plan	Who do users call when they have an issue?	H	H	H	Beyond the Cornerstone support service, The State will need to develop a State Enterprise LMS collaborative support plan utilizing the existing software support structure.	First level support will be in the field, and then admin will be the second level support. This is similar in the other agencies.	Agree	Closed
3	Planning	Contract Terms	Original Contract (master agreement) draft with Cornerstone is only for a five year term with 2 year extension.	M	L	M	Extend the time frame of the Master Agreement to cover a ten year term	Contract changed to a term of: March 1, 2016 and end on March 1, 2020 (the "Term") with two, three-year renewals. (for a total of 10 years)	Agree	Closed

#	Phase	Title	Description				Recommendation	Response	Agreement	Status
17	Planning	Project Cost Estimates	The cost proposal for AOT, the first implementation for the state is clear. The cost for the remaining agencies is not as clear. Those costs are dependent on how much of the original implementation can be utilized and the number of additional services an agency will need	H	L	M	The most conservative numbers (the highest possible costs) were used in the 10 year Cost Analysis for this Independent Review. Angela and Christine have had conversations with Cornerstone and have agreement that the implantation cost will be $43K per OU. This is clearly laid out in the BAFO and discussed with Cornerstone.	No response; not an issue	Agree	Closed
35	Planning	Technology Overview date	The Cornerstone Technology Overview document is dated 2014. There are dated parts of the document. Is there a more recent version?	H	L	M	Obtain response from the vendor.	Latest version has been attached and placed out on the AOT SharePoint site.	Agree	Closed
1	Initiation	Collaboration Team	LMS Collaboration team representation does not include enterprise technical expertise; consider adding someone from DII	H	L	M	Include a technical manager in the group	Bring to the collaboration team. Would seem overly complicated to add each of our technical leads, but maybe not. Consider bringing any technical concerns to DII.	Frank Constantino was added to the Collaboration team	Closed
14	Planning	Size of VT	Cloud environment: VT is relatively small user base for Cornerstone and therefore changes or requests may not carry as much clout.	M	L	L	Discussed this with Cornerstone. Each user can suggest enhancements in the online customer support center, other users can vote on it, and it gets reviewed by Cornerstone.	Comfortable with the process	Agree	Closed
28	Planning	Cornerstone timeline	In the Cornerstone bid, They refer to a detailed schedule in Attachment F, but there is no attachment F in the proposal. Sometimes Attachment F is called the SOW, sometimes the SLA. A detailed schedule is identified in the vendor master agreement;	L	L	L	Get written approval from the vendor for the Enterprise project schedule.	It's in the Proposal.	Agree	Closed
29	Execution	Security - data segregation	Pg 7 references a multi-tenant application, meaning the software serves more than one client, but how exactly is the VT instance and data segregated?	L	L	L	Obtain response from vendor	Each customer s deployed with their own SQL server database so that customer data is segmented at the database level with no co-mingling of data.	Agree	Closed
32	Execution	Security - data centers	Pg 16 indicates that one of the disaster recovery sites used is in the UK. Cornerstone that they wouldn't use the UK for gov't	L	L	L	Obtain response from vendor	Yes. The specific address for the data centers are below. The customer's data will be stored and processed	Agree	Closed

#	Phase	Category	Description				Action	Comments	Agree	Status
			instances. Can we get that in writing or put into the contract?					in U.S. facilities only. This was added to the contract.		
36	Planning	Security contacts	The state security team requires the Cornerstone contact name of their CISO (Chief security officer) and Glenn and Jack from the state need to be added to any Cornerstone breach contact lists.	L	L	L	Obtain response from the vendor.	David Toy – DCIO/ 310-752-1876/DTOY@CSOD.COM	Agree	Closed
4	Planning	AOT Project Charter	Project Charter needs to be updated, including measurable objectives. Schedule and assumptions are not up to date. Document can't be referenced or reused.	L	L	L	Update the AOT charter (and all agency charters) with measurable objectives; Review the project charters on a regular basis and update as needed.	Updated with an ammendment	Agree	Closed
6	Planning	Ownership	Administration ownership should be clearly documented and agreed upon by all agencies involved	M	M	M	An implementation strategy (instance and OU diagram) has been developed; communicate and gain agreement from collaboration team Figure out the line between Enterprise administration and Agency level administration.	Bring forward to collaboration team. It is our understanding that statewide administration ownership is not required, per Cornerstone's demo. Each Agency will manage their own administration. Collaboration group will be leveraged for any needed decision making, such as naming conventions for external accounts.	Agree	Action Item
7	Planning	Ownership	Enterprise project ownership should be clearly documented and agreed upon by all agencies involved. Who owns the enterprise rollout?	M	M	M	Determine an owner for the enterprise plan an proceed accordingly	Bring to the collaboration team.	Agree	Action Item
39	Execution	Data Standards	Cornerstone did not emphasize the need for data standards in their proposal. None of the LMS Team Leaders or members mentioned standards either. It is important that these standards be discussed, developed and documented prior to implementation.	L	H	M	Develop an enterprise-wide LMS data standard policy.	Much of the data standards will be addressed due to the SAAS format of Cornerstone. Where standards are required, such as external license user names, the Collaboration will need to discuss. Bring forward to Cornerstone for discussion.	Agree	Action Item

#	Phase	Topic	Observation				Recommendation	Response	Agree	Type
13	Planning	Parallel systems	During implementation will the team be running parallel systems for a period of time or is it a big bang conversion to the new system? Additional processing time for parallel system implementation was not accounted for.	M	M	M	AOT has a plan. Discuss and define this plan within the collaboration group.	For AOT, we will not be running parallel systems. We are planning a soft launch in which VTTC staff will utilize Cornerstone until implementation/training cycle is finalized. Need to discuss with other agencies.	Agree	Action Item
30	Execution	Technology - browser compatibility	Pg 13 defines the browser requirements. While these requirements can be met for State employees, the State has no control over the external users browser levels. Is it possible to add the browser requirements on the portal sign-in page and a link to browser upgrade sites.	M	M	M	Obtain response from vendor	Cornerstone supports the creation of custom login pages which could be configured to contain links to browser upgrade site as well as list minimum requirements, etc..	Agree	Action Item
33	Planning	Security - data retention	There are multiple (and different) State Agency requirements for data retention and for the ability to access the training information historical data (how far back to go). For instance, CJTC often gets subpoenaed by attorneys for officer proof of certification.	M	L	M	The State should develop a detailed Enterprise data retention policy for the State LMS instance.	Discuss with the collaboration team on strategy. Discuss a retention and archive strategy for each agency.	Agree	Action Item
31	Execution	Security - mobile device support	Pg 13 references mobile device support. Access through a Mobile application introduces additional security concerns. Is there a way to restrict access to a browser environment, i.e. restrict access from a Mobile app?	L	M	L	Obtain response from vendor	Yes. The customer can determine which users can access from mobile devices. The same role based model is applied to limit access to applications and data that is used through the browser based access. Bring forward to the collaboration team .	Agree	Action Item
15	Planning	Proposal terms	The Cornerstone Proposal did not have a proposed project start date.	M	L	L	Although this date is indicated as March 1 in the draft master agreement, this date and schedule should be solidified and documented asap.	Schedule is documented as part of the Contract attachment Master Implementation Schedule. Talk to Cornerstone about a start date.	Agree	Action Item
23	Execution	PII	There is a difference of opinion on whether or not the data in the LMS is considered PII. Sensitive but not identifiable information will be in the system. Details about the data	M	L	L	Once the data is defined, determine if the data is PII. If it is, work with security to understand additional security requirements.	Unknown at this time. More will be known as data fields are mapped.	Agree	Action Item

IR template version 4/11/14

			need to be clarified to eliminate any security concerns.							
26	Control	Project Status	Formal Communication and project status between LMS team members and project stakeholders is by agency. The collaboration should put out periodic status across all agencies.	L	L	L	Create and distribute and enterprise LMS status.	Discuss in the collaboration team. Communicate out to the state on occasion.	Agree	Action Item
34	Planning	Compliance	Pg 26-28 indicates Cornerstone has SSAE 16 , ISO 27001 and FISMA compliance. Can the State receive an attestation to that affect?	L	L	L	Obtain response from the vendor.	Yes. Access can be granted to review these materials through Box.com. These are read only documents and AOT will need to provide the emails for who would need access to the documentation.	Agree	Action Item
2	Planning	Dependencies and Delays	AOT opportunity for LMS is now dependent on Enterprise plans; likewise the Enterprise rollout is dependent on other agency successes	M	M	M	An enterprise plan exists. Make sure it is clearly communicated and agreed upon across all agencies.	The LMS collaboration team will be leveraged to ensure timelines and dependencies are understood.	Agree	Monitor
11	Planning	Data Load	The data load requirements and fields are high-level (CSV via FTP). The proposal does not indicate how many prior years can be loaded or the format of the load. Are there any State compliance requirements around training or certification . Is there a regulation around the number of years history must be kept? The State also needs to decide if the initial employee data load will be done during AOT Implementation or DHR implementation.	M	H	M	Define the detailed interface specifications as soon as possible.	All known historical data will be loaded. Talk to the State of Delaware about their data load experience.	Agree	Monitor
18	Planning	Funding - AHS & DEHMS	A large percentage of this project for AHS is funded with federal funds. The current funds run out in 9/2016 and new funding sources will need to be secured. DEHMS has a drop dead date of 8/31/16 for federal funding.	M	H	M	Communicate the enterprise roll out plan asap. Identify any cross-agency dependencies. Identify alternatives to federal funds	No response	Agree	Monitor

9	Planning	AHS	Not all agencies across the enterprise have been able to work directly with Cornerstone, specifically AHS & VCJTC; The AHS project is in a red status. Each agency is waiting on some answers before they can continue planning efforts	H	L	M	Once the Master Agreement is signed, allow AHS and ALL agencies to work with the vendor; include the enterprise project owner	That is the plan. Once the master agreement has been signed, vendor has already agreed to provide additional demonstrations. Note that all of the parties were invited and attended the vendor demo.	Agree	Monitor
10	Planning	External Licenses	External license Mgmt. required across agencies may overlap, meaning one person may get multiple licenses .	L	M	M	Some agencies have begun to define external user groups and primary owners. Ensure this is done across the enterprise. Include instructor license count.	Discussions took place at our collaboration meeting on 1/29/16. A joint process will be followed to ensure all participating agencies collaborate and follow this process.	Agree	Monitor
20	Planning	Aggressive Timeline	AOT is setting a timeline of 5 weeks for implementation, referred to as the 123 Live Hybrid. This schedule is aggressive, however the team feels confident they can meet that schedule. There are cost implications if the timeline gets extended.	M	L	M	Ensure that the Cornerstone boot camp happens according to schedule to ensure there are no cost penalties for a delay. Carefully watch the boot camp schedule.	No delay is anticipated. Key members of AOT implementation team will be backfilled to ensure timeline is met.	Agree	Monitor
38	Planning	Cornerstone and State Support Plan	The Cornerstone Professional Support Package allows up to 5 (Enterprise) or 3 (Business Edition) individual administrators who may contact Cornerstone Global Care, including 1 "super lead administrator". Note that the state is may have more than 5 administrators across the enterprise. If more than five is required, how does Cornerstone proceed? Also, the internal support plan should be documented.	H	L	M	Awaiting response from the vendor	I have included language regarding support for each OU in the mast contract. This should be a point of contract negotiation.	Agree	Monitor
5	Planning	Enterprise Project Charter	While the AOT and AHS goals and measurements share some commonalities, there are some different needs and success factors.	L	L	L	An effort to define overlapping Enterprise project goals and individual agency goals should be better defined. Each agency should identify their individual objectives in their charters.	ok	Agree	Monitor

16	Planning	Data Cleansing	Data cleansing should be done by all agencies prior to an implementation.	L	L	L	Data cleansing should be planned and executed at all agencies as soon as possible.	AOT has already completed an initial data cleanse in 2015. We have a punch list of items we are currently working on and shared that list with the collaboration team on 1/29.	Agree	Monitor
21	Planning	Training End-Users	Cost of training end users is not included in the proposal costs. It will therefore need to be covered by State internal staff. This was not included in the implementation plans or ongoing costs calculation.	L	L	L	Create a comprehensive training plan. Use best practices learned in each implementation.	Based upon other Cornerstone customers, end user training should be straight forward and leverage the configured system. Final plans will be made once the system is configured. Key employees will participate in UAT to ensure appropriate onsite support.	Agree	Monitor
22	Execution	Internal user readiness	Some agencies (DMV) feel that the internal users may be hesitant to change. New systems and changes are not easily embraced.	L	L	L	Assign a change management lead for the enterprise rollout. Create a change management plan.	Enterprise change management will not be effective as each agency will be embracing different changes. For AOT, discussions have already begun with the Commissioner of DMV. Project Manager will be meeting with DMV leadership team in the next couple of weeks.	Agree	Monitor

Attachment 2 – Lifecycle Cost Benefit Analysis

See File called eLMS Cost Analysis Final V4 021616

Attachment 3 – Document Change Control Log

Date Revised	Authorized by	Version	Description of Change(s)
02/03/16	J. Mincar	1	Original Report developed
02/5/16	J. Mincar	2	Added comments based on final draft review by Jen, Barbara Cormier, EPMO • Changed Operating cost spreadsheet and took out Year 1 (because that is implementation time, not operation). It significantly changed the decrease in operating costs from $54K to $500k+. • Changed AOTs annual operating cost to $11K.
02/12/16	J. Mincar	3	Draft used for review with Richard Boes
02/16/16	J. Mincar	4	Final Version - includes comments from review with Richard Boes
03/09/16	J.Mincar	5	Included final comments from Richard Boes; see email dated 3/8/16