REPORT OF THE
VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES

Implementation of the Point of Sale, Automated License Delivery System

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 59

COMMONWEALTH OF VIRGINIA
RICHMOND
2005

Report to the Chairman of the Senate Finance and House Appropriations and the Director of the Department of Planning and Budget Regarding the Implementation of the Point of Sale, Automated License Delivery System.

Introduction:

Item 392, Paragraph C.2. of Chapter 951 of the Virginia Acts of Assembly, 2005 states:

C 2.) The Director of the Department of Game and Inland Fisheries shall provide a report by September 1, 2005 to the Chairman of the Senate Finance and House Appropriations Committees, and the Director of the Department of Planning and Budget, including, but not limited to, the status of the implementation of the point of sale system, expenditures, and a timeline of implementation.

Background:

The Department has used manual license books to issue hunting and fishing licenses since 1916. This process has significant cost associated with printing, distribution, accounting and revenue collection because of the manual methods utilized. It is impractical to collect client information from the approximately 1.5 million forms that are issued every year. As a result, the agency does not have a comprehensive list of customers that purchase licenses. The implementation of an automated license delivery system (Point of Sale or POS) will enhance its business functions and customer relation .

The POS project will develop and implement an automated process for the delivery of hunting and fishing licenses to the public through the retail and governmental outlets currently utilized to distribute manual hunting and fishing licenses. This project is being completed with no major software purchases. The system is being developed using existing agency development platform. The system will be functional by July 1, 2005. Implementation will occur over the following 12 months.

The system will serve the agent network by relieving them of the need to manage license inventories, report periodic sales, and reconcile inventory twice a year. This relieves a large administrative burden from them. After the first full year of sales, the system will also hold the majority of customer information that can be recalled for quick and efficient sales in subsequent years.

The customer (hunter or angler) will be served by a consistent availability of the licenses since there will be no inventory to deplete. Lost license replacement will be handled system wide, removing the requirement for customers to return to the original place of purchase. Second purchases will be faster because primary demographic information will already be in the system speeding the time to delivery. Upon completion of system

implementation, when all agents are automated, licenses will be valid for one year from the date of purchase rather than the current hunting or fishing license year (§29.1-328) and the Board of Game and Inland Fisheries will be able to develop a "Sportsmen" license that will allow hunters and anglers to purchase a single license that provides comprehensive privileges to hunt and fish in the Commonwealth (§29.1-310.1). This will provide a convenience to customers by reducing the amount of paper and the number of times required to purchase a license in a year.

The agency will benefit from the development of a customer database. The printing, distribution and accounting for licenses will be eliminated except as noted below for the duck blind licenses and saltwater boat licenses. Accounting for license sales will be automated with the hosted system and remove the need for auditing, reconciliation, collections and deposits of revenue manually. Revenue collection from license sales will be faster, improving the cash flow for the agency. Agency exposure to non-compliant agents will be greatly reduced with improved and faster management of the rights and privileges through the automated system. Enforcement efforts will be improved with better and faster access to the license information. Utilizing the internet based, hosting model will provide opportunities for the agency to use automation for other activities such as harvest checking.

Licenses dealing with duck blinds per §29.1–348 will not be issued using the automated delivery system. All other licenses and/or privileges currently issued via manual paper licenses dealing with recreational hunting, fresh and saltwater fishing and temporary boat registration will be delivered via the automated license delivery system. The physical saltwater boat decal will be provided to the customer through direct fulfillment after the automated sale of the privilege.

The POS system will be implemented by enhancing a prototype system developed and tested with Wal-Mart Corporation and Virginia.gov (formally VIPNet of VITA). This system was developed and deployed to 78 Wal-Mart stores throughout Virginia in the Fall of 2004. Based on the prototype deployment, some enhancements where identified which will be implemented in the host system by Virginia.gov. The accounting and agent management system developed to support the prototype will be enhanced to provide additional functionality to support ACH transfers from agents, maintain agent accounts, maintain tables, files and privileges on the hosting system and provide management reports to support agent management.

Major Milestones and Deliverables:

The following summarizes the major milestones and deliverables for the POS project as approved in the project charter submitted to the VITA project management office and subsequently to the Information Technology Investment Board.

Event	Estimated Date	Estimated Duration
Project Charter Approved	3/10/2005	11 days

Project Plan Completed	3/21/2005	3 days
IV&V pre-execution	3/31/2005	3 days
Project Plan Approved	3/24/2005	1 day
Project Execution – Started	3/25/2005	422 days
IV&V pre-software release*	6/15/2005	5 days
Project Execution Completed	6/30/2006	15 days
IV&V Closeout	7/1/2006	3 days
Project Closed Out	8/1/2006	30 days

IV&V refers to independent verification and validation.

Progress to date:

Project plans and charter have been developed and approved.

The project plan as published on the internal agency project server is outlined in Appendix A. This includes the work breakdown structure and baseline for the project. Progress through July 31 is indicated in the Gantt chart.

Public meetings were held in April, 2005 at five locations throughout Virginia to introduce license agents to the new automated process. These meetings where attended by 201 agents. Meetings where held in Chesapeake, South Boston, Verona, Fairfax, Richmond and Blacksburg.

In early June, 2005, sign-up forms were sent to agents requesting them to indicate their interest in moving to the new system and time frame in which they would like to change over. From this mailing, 70 individuals indicated a desire to move to the new system in August and September 2005 and 139 individuals indicated a desire to move to the system later in the year. There were 63 agents that indicated no desire to use the automated system. A large number of agents, 356, did not respond to the initial mailing and are being contacted by phone. Based on previous years sales, the agents not desiring to move to the new system represent approximately 3.5% of the license sales. Geographic analysis of the distribution of agents not interested in becoming an automated agent does not indicate any area of the state will lack the services of an agent for the sale of hunting and fishing licenses through the agent network.

Project development and testing was completed by the adjusted schedule of July 15. This included the development and implementation of enhancements on the host system by Virginia.gov and the development and testing of the accounting/agent management module for use by DGIF.

The IV&V (independent verification and validation) process was re-negotiated into a pre-release review and a closeout review with VITA project management staff. The pre-release review was completed. The IV&V review process was competitively awarded to The North Highland Company as sub-contractors to the CGI-AMS special services contract with VITA. The IV&V work for the "planning/in-progress" review reported to

the Department on June 10, 2005. The final closeout report will be conducted in mid-September 2005 and will constitute the entire IV&V process as negotiated with VITA project management office. The IV&V report findings have been acted on and recommendations have been implemented for improved project management and document sign-off procedures.

The IV&V report did complement the agency on best practices in several areas. These included involvement of the business manager in the development process. DGIF was commended because of the willingness of the business manager to engage in the development and implementation process and the use of programmers highly familiar with the business case of selling hunting and fishing licenses.

The complete IV&V report is provided as Appendix B.

Implementation:

Implementation has been delayed for two reasons; 1.) two week delay because of development and the IV&V review process; 2.) development and approval of agent agreement forms.

The development and IV&V process were discussed above. The agent agreement was presented to and approved by the Board of Game and Inland Fisheries at its meeting on July 28, 2005. The agreement review by the Attorney General's office was completed prior to the Board meeting. The approved agreement was mailed to agents that had signed up for the new system on August 1, 2005.

As of August 15, 2005, 70 agents had indicated interest in starting the automated system. The processing of agent agreements and validation of ACH drafting information requires 2-3 weeks. New agents are on schedule to enter the new system starting in late August or early September. Current delays in starting the deployment should not impact the final completion of the project scheduled for July, 2006.

Training for agents is being provided in several formats. An extensive user manual includes detailed instructions on the use of the system. This is being mailed to each agent with their official log-on and introduction to the system. A CD containing video training will be provided along with the manual to every agent. Face-to-face training has been scheduled throughout Virginia at several locations and will be conducted throughout the next year for agents. Additional training will be offered as requests are received. A secure website has been developed for agents to access. The web site will contain the training materials and manuals for download if desired. The site will also contain additional frequently asked questions, a discussion board for agents to share information and a live help link to license accountants for receiving information and advice during normal business hours. E-mail inquiries can be left by agents for license accountants as well.

Project cost:

When originally proposed, the project was estimated to cost $1.5M over a two year period. This estimate was based on best practices technology in existence in 2003 when the project was proposed. With the opportunity to prototype and test an Internet-based hosted service model through cooperation with Wal-Mart Inc., it was determined that the project could be completed at a substantially reduced cost of approximately $250,000.

The project is currently within budget with costs as of July 31, 2005 of $168,976. The current project time information indicates that the project will finish with an estimated cost at completion of $277,972. This is $27,972 over the budgeted cost of $250,000. The additional cost results from higher than planned IV&V cost and additional training for agents provided by agency staff.

Conclusion:

It is anticipated that the POS project will meet its goal of 100% automation of license delivery by July 1, 2006.

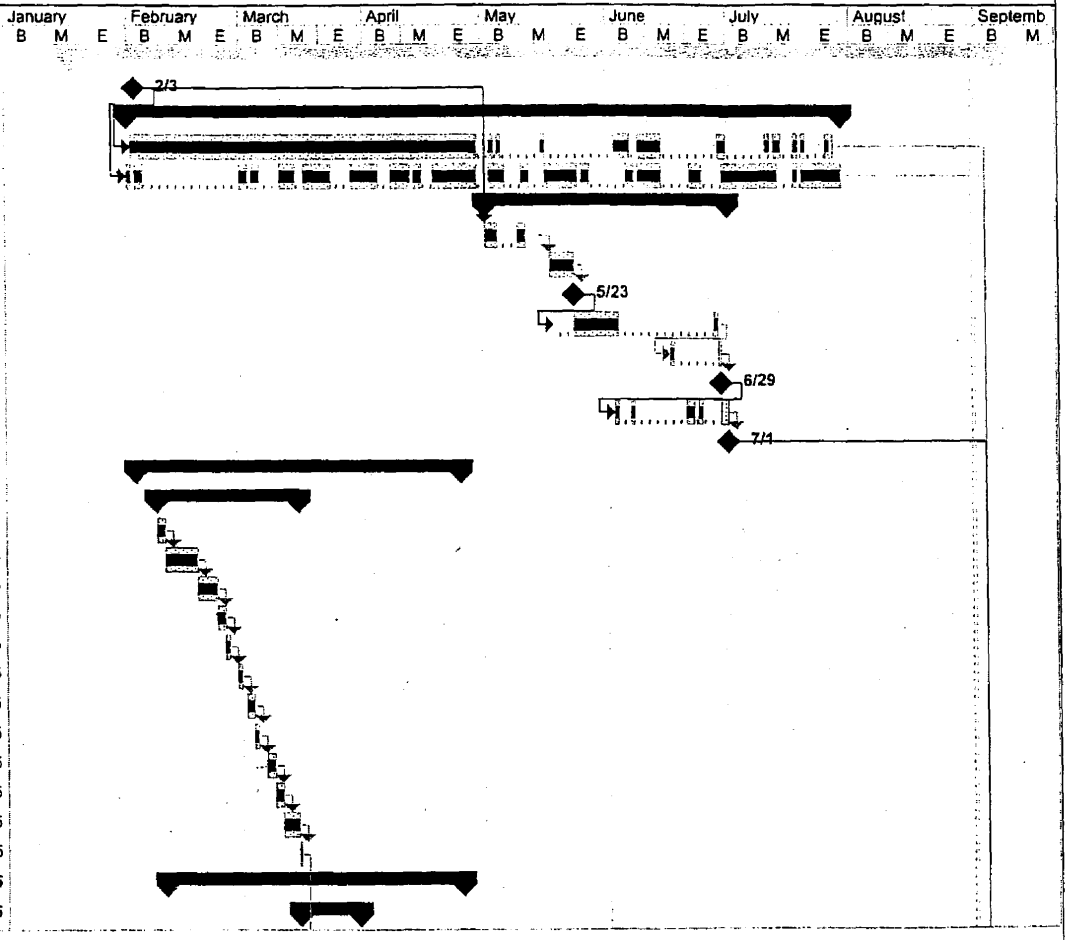
During review of the project, the Secretary of Natural Resources office requested a check point in February to evaluate the adoption rate and geographic coverage of automated agents. If the adoption rate and/or geographic coverage of automated agents is determined to be insufficient to provide services to the public, the manual process may be extended for a period of time. The geographic coverage will be evaluated as the percentage of the state that has an estimated drive time of 20 minutes or less to a license agent.

Appendix A:

Project work breakdown structure and Gantt chart.
(Includes project status report)

Appendix A
Point of Sale Project Plan
As of July 31, 2005

ID	% Complete	Task Name	Start	Finish
0	88%	**PointOfSale.Published**	**Tue 1/18/05**	**Tue 9/6/05**
1	100%	Project Start	Thu 2/3/05	Thu 2/3/05
2	99%	**Project Management**	**Tue 2/1/05**	**Fri 7/29/05**
3	99%	Project Meetings	Wed 2/2/05	Wed 7/27/05
4	100%	Project management	Tue 2/1/05	Fri 7/29/05
5	91%	**IV&V**	**Mon 5/2/05**	**Fri 7/1/05**
6	100%	Develop Statement of Work and send to contrac	Mon 5/2/05	Wed 5/11/05
7	100%	Review proposals and choose contractor	Wed 5/18/05	Mon 5/23/05
8	100%	Contract complete	Mon 5/23/05	Mon 5/23/05
9	100%	Participate in I V & V of project planning and exe	Thu 5/19/05	Tue 6/28/05
10	53%	Participate in I V & V of project closeout	Fri 6/17/05	Wed 6/29/05
11	0%	Contractor conducts IV&V on Execution	Wed 6/29/05	Wed 6/29/05
12	75%	Respond to IV&V Report	Fri 6/3/05	Fri 7/1/05
13	0%	IV&V complete	Fri 7/1/05	Fri 7/1/05
14	100%	**VIPNet Development**	**Thu 2/3/05**	**Mon 4/25/05**
15	100%	**Develop manual license replacement functio**	**Tue 2/8/05**	**Tue 3/15/05**
16	100%	Develop prototype	Tue 2/8/05	Wed 2/9/05
17	100%	Development - option available based on a	Thu 2/10/05	Thu 2/17/05
18	100%	Develop/modify search screen (Same as pl	Fri 2/18/05	Tue 2/22/05
19	100%	Format search results screen	Wed 2/23/05	Thu 2/24/05
20	100%	Modify license summary page	Fri 2/25/05	Fri 2/25/05
21	100%	Modify license module for fees not charged	Mon 2/28/05	Mon 2/28/05
22	100%	Modify reporting module to display "replace	Wed 3/2/05	Thu 3/3/05
23	100%	Internal testing	Fri 3/4/05	Fri 3/4/05
24	100%	Debugging	Mon 3/7/05	Tue 3/8/05
25	100%	DGIF user testing	Wed 3/9/05	Thu 3/10/05
26	100%	Debugging	Fri 3/11/05	Mon 3/14/05
27	100%	Move to production	Tue 3/15/05	Tue 3/15/05
28	100%	**VIPNet to DGIF Synchronization**	**Thu 2/10/05**	**Mon 4/25/05**
29	100%	**Customer Demographic Changes**	**Tue 3/15/05**	**Wed 3/30/05**

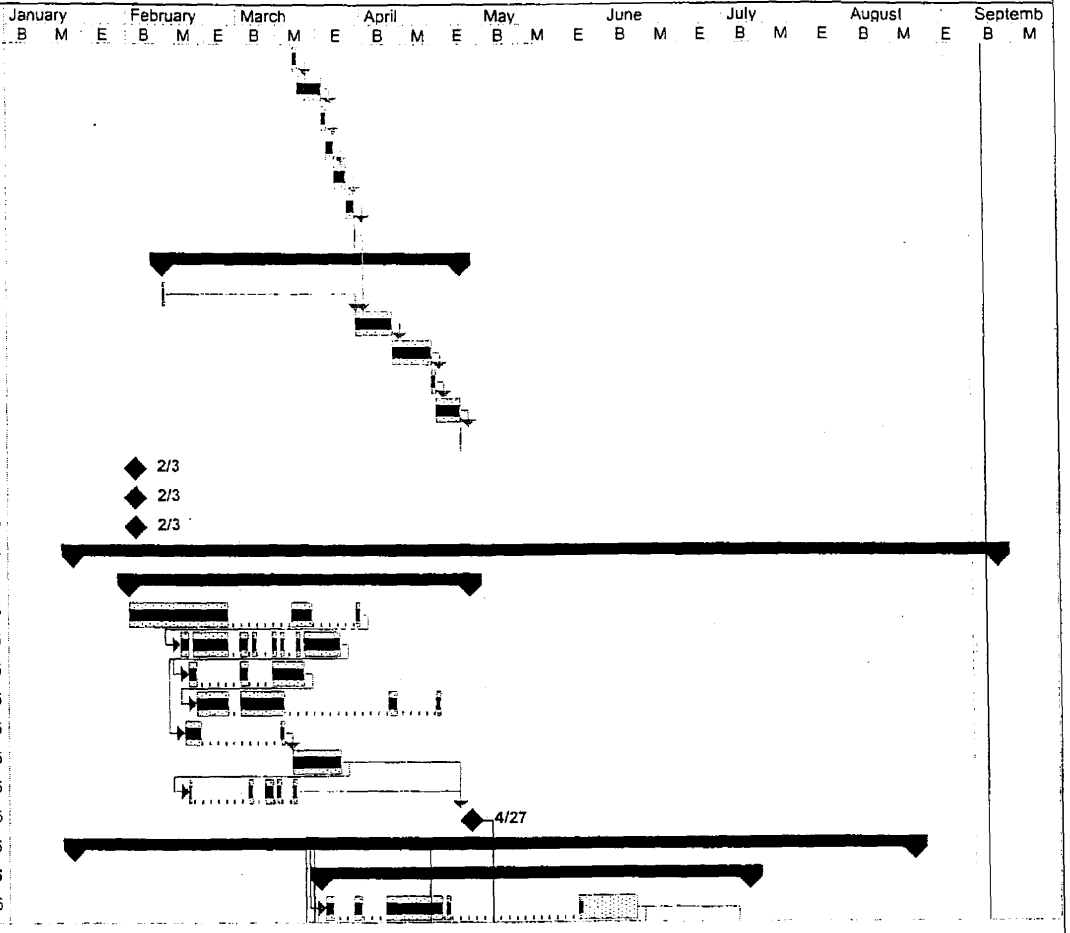


Project: PointOfSale.Published.mpp
Date: Wed 8/31/05

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Appendix A
Point of Sale Project Plan
As of July 31, 2005

ID	% Complete	Task Name	Start	Finish
30	100%	Develop scripts for monitoring updated	Tue 3/15/05	Wed 3/16/05
31	100%	Develop system to update VIPNet cust	Wed 3/16/05	Tue 3/22/05
32	100%	Internal testing	Tue 3/22/05	Wed 3/23/05
33	100%	Debugging	Wed 3/23/05	Fri 3/25/05
34	100%	DGIF user testing	Fri 3/25/05	Mon 3/28/05
35	100%	Debugging	Mon 3/28/05	Wed 3/30/05
36	100%	Move to production	Wed 3/30/05	Wed 3/30/05
37	100%	**Agent Management - agent status (active**	**Thu 2/10/05**	**Mon 4/25/05**
38	100%	Initial requirements gathing meeting	Thu 2/10/05	Thu 2/10/05
39	100%	Develop agent/privilege table structure	Wed 3/30/05	Fri 4/8/05
40	100%	User interface development	Fri 4/8/05	Mon 4/18/05
41	100%	Testing	Mon 4/18/05	Tue 4/19/05
42	100%	Debugging	Tue 4/19/05	Mon 4/25/05
43	100%	Move to production	Mon 4/25/05	Mon 4/25/05
44	100%	POS shopping cart	Thu 2/3/05	Thu 2/3/05
45	100%	Internet sales integration	Thu 2/3/05	Thu 2/3/05
46	100%	Sales Report link to DGIF agent billing site	Thu 2/3/05	Thu 2/3/05
47	84%	**DGIF Development of POS**	**Tue 1/18/05**	**Tue 9/6/05**
48	100%	**Planning**	**Tue 2/1/05**	**Wed 4/27/05**
49	100%	Planning POS	Tue 2/1/05	Wed 3/30/05
50	100%	Develop prelim data model for Money Mana	Mon 2/14/05	Fri 3/25/05
51	100%	Develop prelim data model for Relationship	Wed 2/16/05	Wed 3/16/05
52	100%	Develop prelim data model for Revenue Ma	Fri 2/18/05	Tue 4/19/05
53	100%	Validate Money Manager data model agains	Tue 2/15/05	Fri 3/11/05
54	100%	Review and approve data models	Mon 3/14/05	Fri 3/25/05
55	100%	Developer planning meeting to agree on pre	Wed 2/16/05	Mon 3/14/05
56	100%	POS Planning complete	Wed 4/27/05	Wed 4/27/05
57	86%	**Detailed Design Requirements**	**Tue 1/18/05**	**Tue 8/16/05**
58	81%	**Tables**	**Mon 3/21/05**	**Tue 7/5/05**
59	65%	Design and document agent tables	Tue 3/22/05	Tue 6/7/05

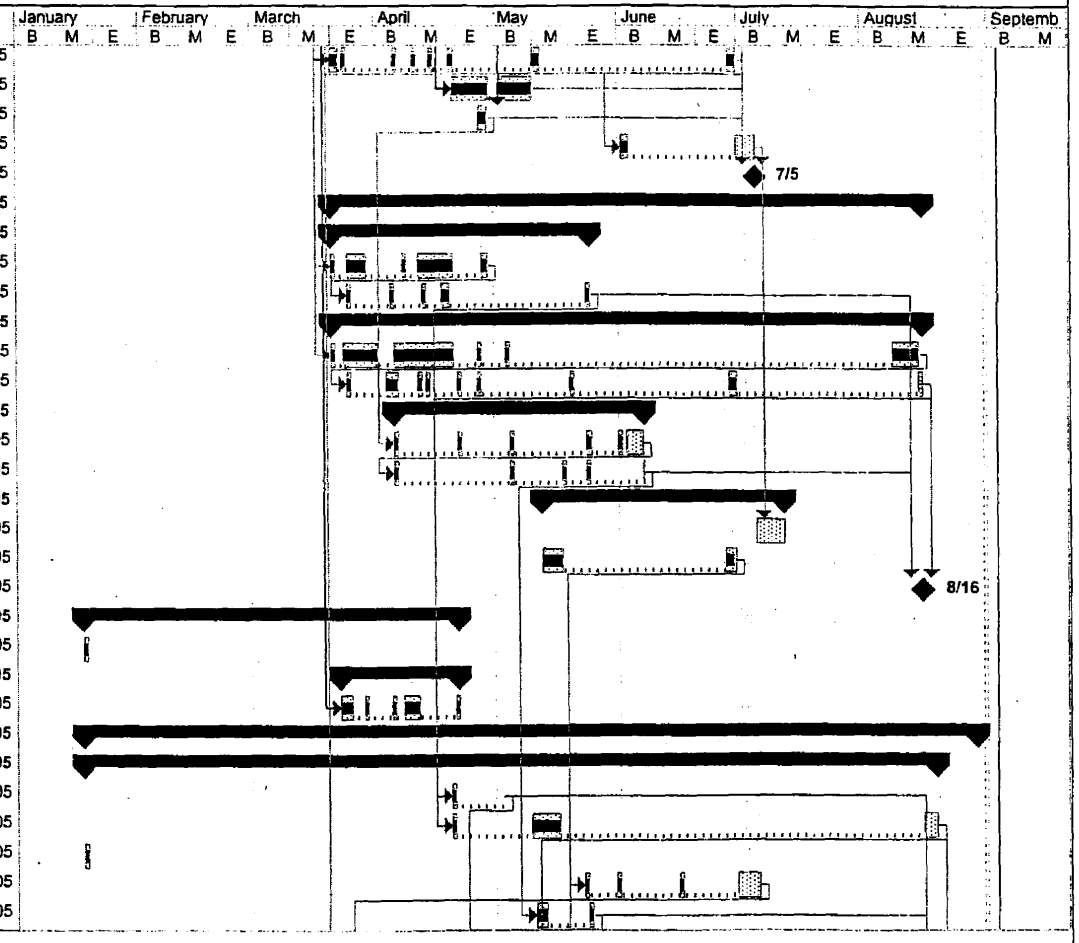


Project: PointOfSale.Published.mpp
Date: Wed 8/31/05

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Appendix A
Point of Sale Project Plan
As of July 31, 2005

ID	% Complete	Task Name	Start	Finish
60	100%	Design and document sales accountin	Mon 3/21/05	Thu 6/30/05
61	100%	Design and document ACH Payment T	Thu 4/21/05	Tue 5/10/05
62	100%	Design and document synchronization	Wed 4/27/05	Fri 4/29/05
63	50%	Design and document management re	Thu 6/2/05	Tue 7/5/05
64	0%	Detailed Design of Tables complete	Tue 7/5/05	Tue 7/5/05
65	**88%**	**Functions**	**Mon 3/21/05**	**Tue 8/16/05**
66	**100%**	**Agent management**	**Mon 3/21/05**	**Tue 5/24/05**
67	100%	Define agent management rules	Mon 3/21/05	Fri 4/29/05
68	100%	Document agent management rul	Fri 3/25/05	Tue 5/24/05
69	**97%**	**Sales accounting and DC**	**Mon 3/21/05**	**Tue 8/16/05**
70	100%	Define sales accounting and DC n	Mon 3/21/05	Mon 8/15/05
71	92%	Document sales accounting and D	Fri 3/25/05	Tue 8/16/05
72	**77%**	**Synchronization**	**Wed 4/6/05**	**Tue 6/7/05**
73	72%	Define synchronization rules	Wed 4/6/05	Tue 6/7/05
74	84%	Document synchronization rules	Wed 4/6/05	Tue 6/7/05
75	**46%**	**Management Reports**	**Fri 5/13/05**	**Tue 7/12/05**
76	0%	Define management reports rules	Wed 7/6/05	Tue 7/12/05
77	87%	Document management report rul	Fri 5/13/05	Thu 6/30/05
78	0%	Detailed design of functions complete	Tue 8/16/05	Tue 8/16/05
79	**100%**	**Interface**	**Tue 1/18/05**	**Thu 4/21/05**
80	100%	Design Host Interface	Tue 1/18/05	Tue 1/18/05
81	**100%**	**License Accounting Interface Protot**	**Wed 3/23/05**	**Thu 4/21/05**
82	100%	Develop license accounting protot	Wed 3/23/05	Thu 4/21/05
83	**78%**	**Coding**	**Tue 1/18/05**	**Mon 8/29/05**
84	**71%**	**Tables**	**Tue 1/18/05**	**Fri 8/19/05**
85	100%	Create agent maintenance tables	Wed 4/20/05	Mon 5/2/05
86	62%	Create sales accounting tables	Wed 4/20/05	Fri 8/19/05
87	100%	Create Audit tables and triggers	Tue 1/18/05	Tue 1/18/05
88	56%	Create management report tables	Mon 5/23/05	Wed 7/6/05
89	100%	Create synchronization tables	Wed 5/11/05	Tue 5/24/05

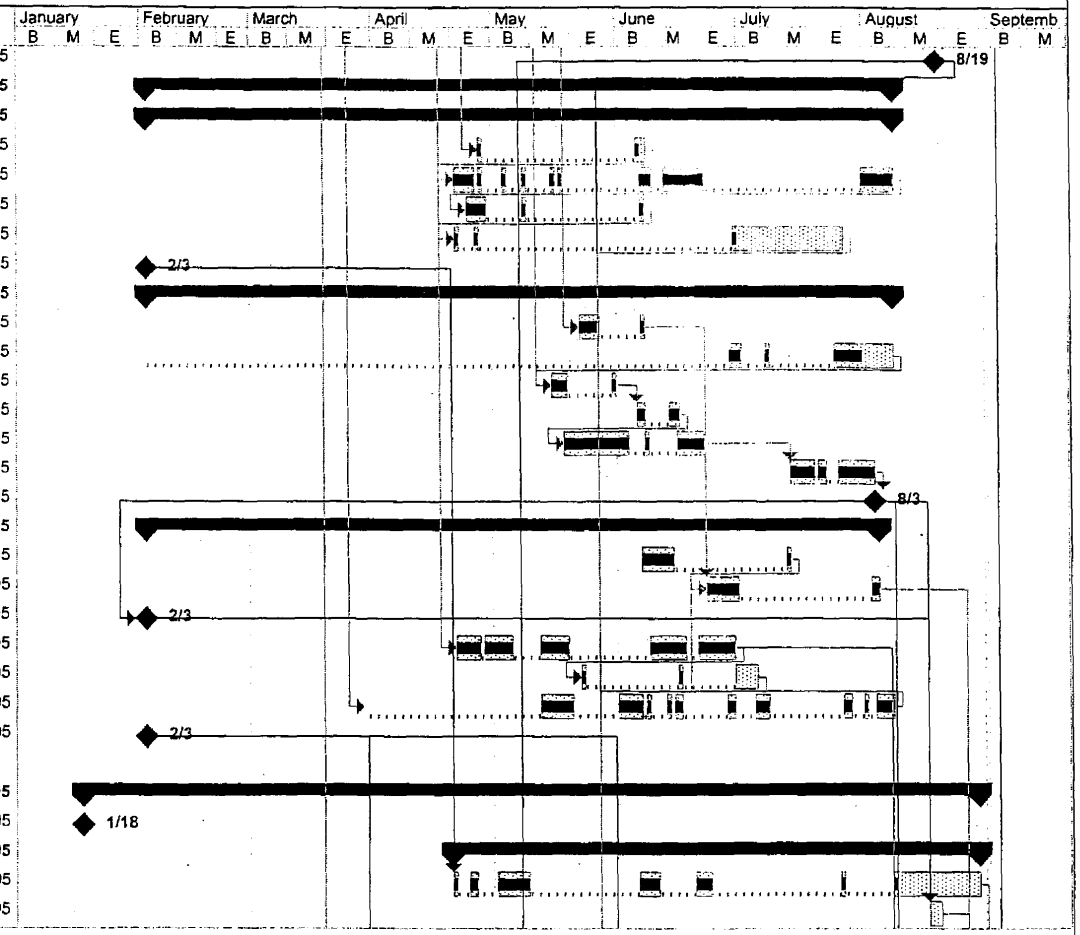


Project: PointOfSale.Published.mpp
Date: Wed 8/31/05

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Appendix A
Point of Sale Project Plan
As of July 31, 2005

ID	% Complete	Task Name	Start	Finish
90	0%	Creation of tables complete	Fri 8/19/05	Fri 8/19/05
91	**86%**	**Stored Procedures**	**Thu 2/3/05**	**Mon 8/8/05**
92	**67%**	**Code agent maintenance store proc**	**Thu 2/3/05**	**Mon 8/8/05**
93	73%	Stored procedure or view for VIPN	Thu 4/28/05	Wed 6/8/05
94	100%	Update stored procedures for user	Fri 4/22/05	Mon 8/8/05
95	100%	Create stored procedures for user	Mon 4/25/05	Tue 6/7/05
96	15%	Create stored procedure to insert	Fri 4/22/05	Wed 7/27/05
97	100%	Coding for agent maintenance cor	Thu 2/3/05	Thu 2/3/05
98	**90%**	**Code sales accounting stored proce**	**Thu 2/3/05**	**Mon 8/8/05**
99	100%	Create stored procedures for voidi	Mon 5/23/05	Tue 6/7/05
100	61%	Create stored procedures for invoi	Thu 2/3/05	Mon 8/8/05
101	100%	Create stored procedure for preno	Mon 5/16/05	Tue 5/31/05
102	100%	Create stored procedure to gener	Mon 6/6/05	Thu 6/16/05
103	100%	Create stored procedure to insert	Thu 5/19/05	Wed 6/22/05
104	100%	Create stored procedure to insert	Thu 7/14/05	Wed 8/3/05
105	0%	Coding for sales accounting comp	Wed 8/3/05	Wed 8/3/05
106	**100%**	**Code payments stored procedures**	**Thu 2/3/05**	**Thu 8/4/05**
107	100%	Generate test data for unit testing	Tue 6/7/05	Wed 7/13/05
108	100%	Email DC Report to Lic Acct Supe	Thu 6/23/05	Thu 8/4/05
109	100%	Coding for payments complete	Thu 2/3/05	Thu 2/3/05
110	100%	Code synchronization stored procedure	Fri 4/22/05	Wed 6/29/05
111	42%	Code VIPNet payment stored procedur	Mon 5/23/05	Tue 7/5/05
112	99%	Code management reports stored proc	Wed 3/30/05	Mon 8/8/05
113	100%	Coding complete	Thu 2/3/05	Thu 2/3/05
114				
115	**52%**	**Interfaces**	**Tue 1/18/05**	**Mon 8/29/05**
116	100%	Host Interface completed	Tue 1/18/05	Tue 1/18/05
117	**52%**	**Interface for License Accounting**	**Thu 4/21/05**	**Mon 8/29/05**
118	58%	Revise interface to add ACH, Billir	Thu 4/21/05	Mon 8/29/05
119	0%	Create interface to view invoices a	Wed 8/17/05	Fri 8/19/05

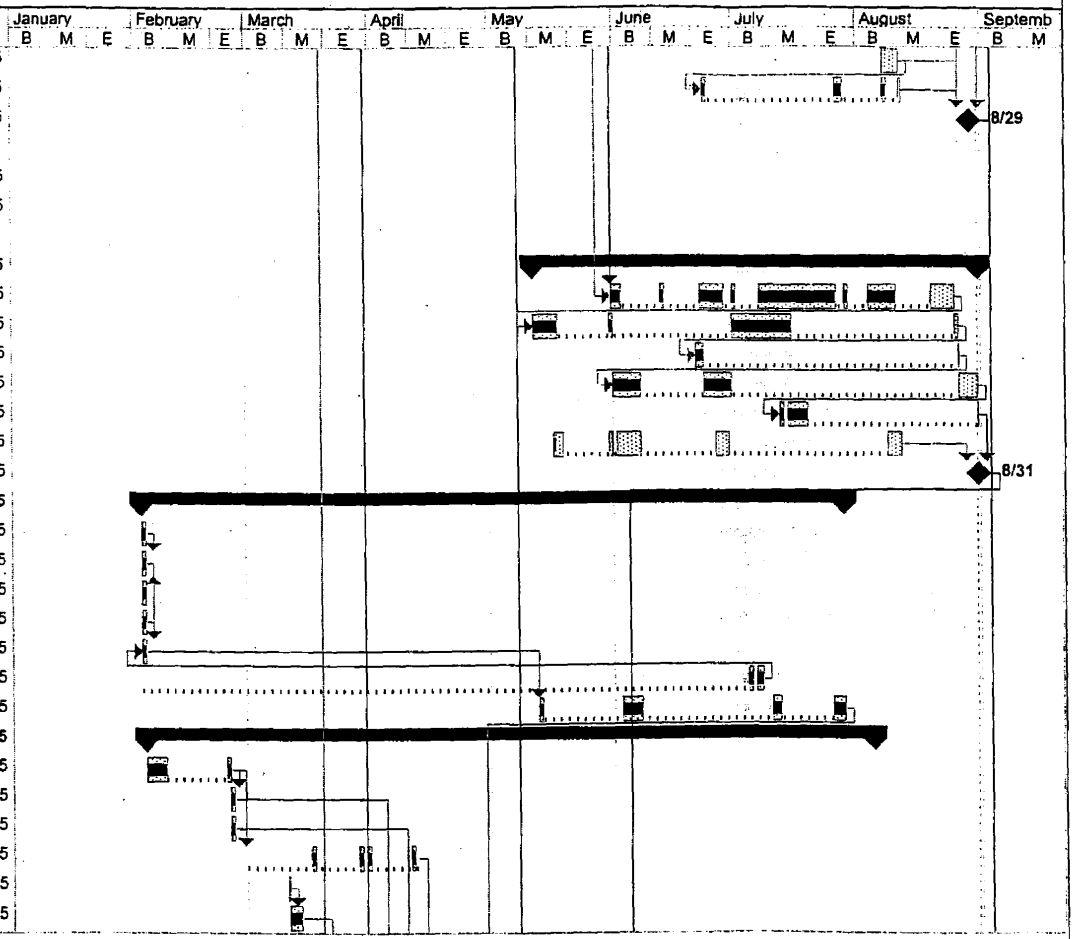


Project: PointOfSale.Published.mpp
Date: Wed 8/31/05

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Appendix A
Point of Sale Project Plan
As of July 31, 2005

ID	% Complete	Task Name	Start	Finish
120	0%	Create interface for manual licens	Mon 8/8/05	Thu 8/11/05
121	84%	Create interface to void a license	Fri 6/24/05	Fri 8/12/05
122	0%	License Accounting interface com	Mon 8/29/05	Mon 8/29/05
123				
124	100%	Develop Application Security	Tue 1/18/05	Tue 1/18/05
125	100%	Develop SQL Roles	Tue 1/18/05	Tue 1/18/05
126				
127	**73%**	**Testing**	**Thu 5/12/05**	**Wed 8/31/05**
128	88%	Testing of tables and stored procedures	Tue 5/31/05	Thu 8/25/05
129	94%	Prepare test documentation	Thu 5/12/05	Fri 8/26/05
130	89%	Set up test environment	Wed 6/22/05	Fri 8/26/05
131	78%	Execute testing	Wed 6/1/05	Wed 8/31/05
132	89%	Complete and disseminate test documentat	Wed 7/13/05	Wed 8/31/05
133	3%	Meetings about testing	Tue 5/17/05	Fri 8/12/05
134	0%	Testing complete	Wed 8/31/05	Wed 8/31/05
135	**100%**	**Policy and Procedures**	**Thu 2/3/05**	**Thu 7/28/05**
136	100%	Develop funding policy	Thu 2/3/05	Thu 2/3/05
137	100%	Develop draft agent agreement	Thu 2/3/05	Thu 2/3/05
138	100%	Negotiations with VIPNet	Thu 2/3/05	Thu 2/3/05
139	100%	Develop criteria for suppling hardware	Thu 2/3/05	Thu 2/3/05
140	100%	Presentation of policy/procedures to Board	Thu 2/3/05	Thu 2/3/05
141	100%	Develop system specifications	Thu 2/3/05	Fri 7/8/05
142	100%	Develop system roll-out plans	Fri 5/13/05	Thu 7/28/05
143	**93%**	**Coordination with agents**	**Fri 2/4/05**	**Fri 8/5/05**
144	100%	Planning Coordination with agents	Fri 2/4/05	Thu 2/24/05
145	100%	Order supplies (flip chart, pens, folders)	Fri 2/25/05	Fri 2/25/05
146	100%	Request agent mailing list from Carman	Fri 2/25/05	Fri 2/25/05
147	100%	Reserve facilities for coordination meetings	Mon 2/28/05	Tue 4/12/05
148	100%	Meet with Frances Boswell	Fri 3/11/05	Fri 3/11/05
149	100%	Develop powerpoint presentation for coordir	Fri 3/11/05	Mon 3/14/05

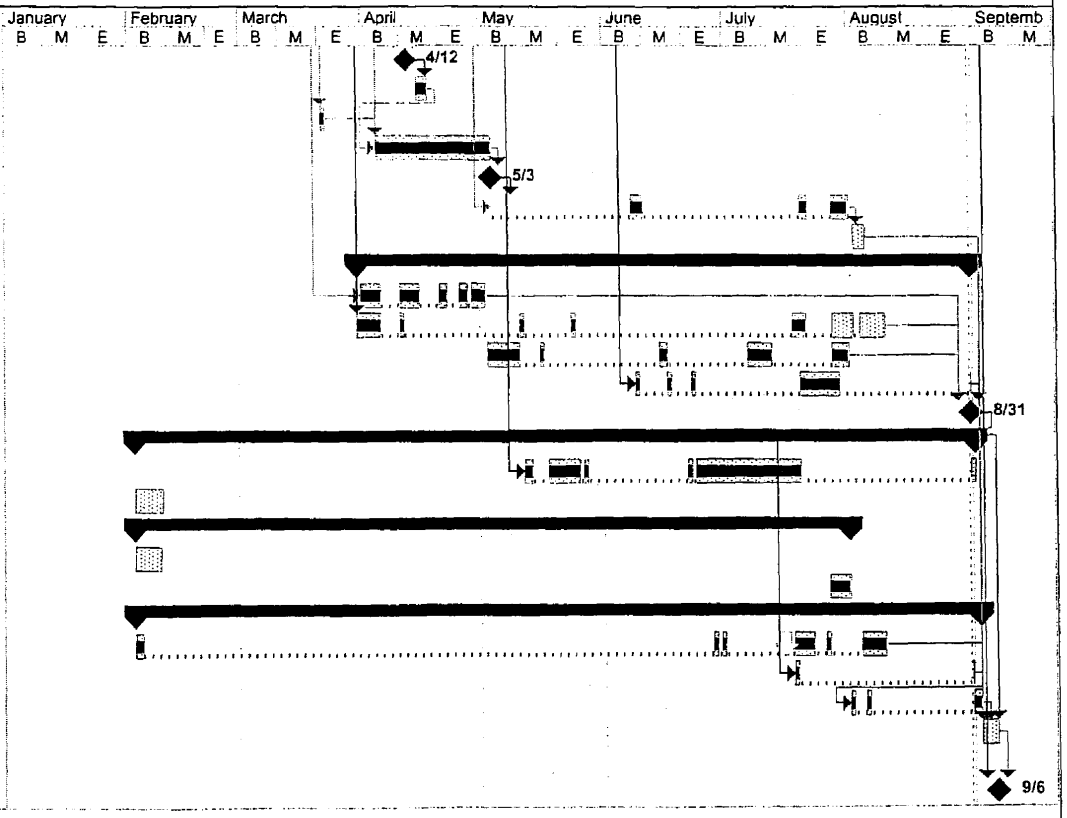


Project: PointOfSale.Published.mpp
Date: Wed 8/31/05

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Appendix A
Point of Sale Project Plan
As of July 31, 2005

ID	% Complete	Task Name	Start	Finish
150	100%	Develop and send invitations/notices about	Tue 4/12/05	Tue 4/12/05
151	100%	Send notices to county administrators and (	Fri 4/15/05	Mon 4/18/05
152	100%	Develop packet for attendees for coordinati	Tue 3/22/05	Tue 3/22/05
153	100%	Travel to and attend meetings	Tue 4/5/05	Tue 5/3/05
154	100%	Agent coordination meetings complete	Tue 5/3/05	Tue 5/3/05
155	98%	Send sign-up information to agents	Wed 5/4/05	Mon 8/1/05
156	0%	Register agents for training	Mon 8/1/05	Fri 8/5/05
157	**86%**	**Documentation**	**Thu 3/31/05**	**Wed 8/31/05**
158	100%	Develop functional requirements document	Fri 4/1/05	Mon 5/2/05
159	56%	Develop or revise system documentation	Thu 3/31/05	Wed 8/10/05
160	99%	Revise agent/manager user manual	Tue 5/3/05	Mon 8/1/05
161	99%	Revise License Accountant (Elars) user ma	Thu 6/9/05	Wed 8/31/05
162	0%	Documentation complete	Wed 8/31/05	Wed 8/31/05
163	**81%**	**Training**	**Thu 2/3/05**	**Thu 9/1/05**
164	96%	Create agent training module	Thu 5/12/05	Thu 9/1/05
165	0%	Conduct agent training	Thu 2/3/05	Wed 2/9/05
166	**40%**	**Communications and Public Relations**	**Thu 2/3/05**	**Mon 8/1/05**
167	0%	Develop/revise web site materials	Thu 2/3/05	Wed 2/9/05
168	99%	Coding for web site information	Wed 7/27/05	Mon 8/1/05
169	**99%**	**Software Release**	**Thu 2/3/05**	**Fri 9/2/05**
170	100%	Implement software	Thu 2/3/05	Tue 8/9/05
171	80%	VITA implementation meeting	Mon 7/18/05	Wed 8/31/05
172	100%	Train license accountants	Mon 8/1/05	Fri 9/2/05
173	0%	Project Closeout	Fri 9/2/05	Tue 9/6/05
174				
175	0%	Project End	Tue 9/6/05	Tue 9/6/05



Project: PointOfSale.Published.mpp
Date: Wed 8/31/05

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Executive Status Report – July 31 2005

Project Name: Automated License Delivery System (POS)	Project Phase: Execution	Period: June 15-July 31, 2005

Project Health:	Green	RED = Project Delivery, scope, schedule and/or cost has been impacted YELLOW = Project Delivery, scope, schedule and/or cost at risk GREEN = Project on track	

Project Costs ($) & Schedule: *Source: MS Project 2003 file PointofSale.published*

Phase	*Actual*	*ETC*	*Forecast*	*Budget*	*Variance*	*Prev. Var.*	*Completion Date* Original	Updated
Planning	$22,269	$0	$22,269				4/27/05	7/31/05
Project Management	$9,018	$608	$9,626				6/30/06	6/30/06
Policy Development	$2,727	$0	$2,727				N/A	N/A
Detailed Design	$22,488	$4,692	$27,180				6/7/05	6/7/05
IV&V	$17,902	$14,608	$32,510				N/A	N/A
Coding	$50,941	$76,648	$127,588				7/8/05	8/31/05
Testing	$19,573	$7,537	$27,110				6/15/05	9/15/05
Documentation	$10,618	$1,907	$12,524				6/20/05	9/15/05
Coordination	$3,330	$635	$3,965				6/30/06	6/30/06
Training	$3,061	$1,246	$4,307				6/30/06	6/30/06
Software Release	$6,541	$579	$7,119				7/1/05	7/15/05
Public Relations	$508	$929	$1,437				N/A	12/31/05
Total Labor Costs	$168,976	$108,996	$277,972	$250,000	$27,972	NA		

Activities Completed This Period:

- Finalized Implementation plan and obtained sign-off from Program manager, Owner, and Sponsor.
- Completed project documents and addressed issues noted in IV&V report.
- Mailed enrollment information to all agents.
- Developed and populated database of agents who responded to enrollment mailing regarding when they wish to automate and receive training.
- Finalized agent agreement and automated clearing house agreement and mailed these to agents wishing to enroll.
- Completed and implemented synchronization module.
- Completed and implemented agent management and sales accounting modules.
- Completed user manuals.
- Continued development of management reporting modules.
- Continued development of training module.
- Conducted training for license sales accountants.
- Scheduled first round of agent training.

Activities Planned for Next Period:

- Complete development of management reporting module.
- Complete training module and disseminate to agents who wish to enroll.
- Conduct training for license agents.
- Continue to contact agents who have not responded to the enrollment mailing.
- Participate in close-out IV&V.

Key Schedule Items & Dates (Activities, Deliverables, Milestones, etc.)

Schedule Items	*Owner/Responsibility*	*Due Date*	*Status(% Complete)*
• Complete training module and disseminate to agents.	James Evins	8/26/05	98%
• Management reporting module complete.	Doreen Richmond	8/31/05	90%
• Complete first round of agent training.	Kathy Graham	9/15/05	0%
• Contact all agents who have not responded to mailing	License Accounting	9/30/05	0%
• Complete close-out IV&V	Kathy Graham	9/30/05	0%

Top Issues:

Issue	*Action Plan*	*Owner/Responsibility*	*Resol. Date*	*Showstopper*
• License Accounting needs to take ownership of the system and begin to take on agent communications.	• Meet with Ray Davis and John Moore to reiterate the need for this support of the system.	Virgil Kopf	8/31/05	Yes

Executive Status Report – July 31 2005

support and training. • After-hours support of system: still needs to be decided how this will be handled.	• Meet with Ray Davis and John Moore again to discuss options and decide course of action.	Virgil Kopf	8/31/05	Yes

Critical Risks:

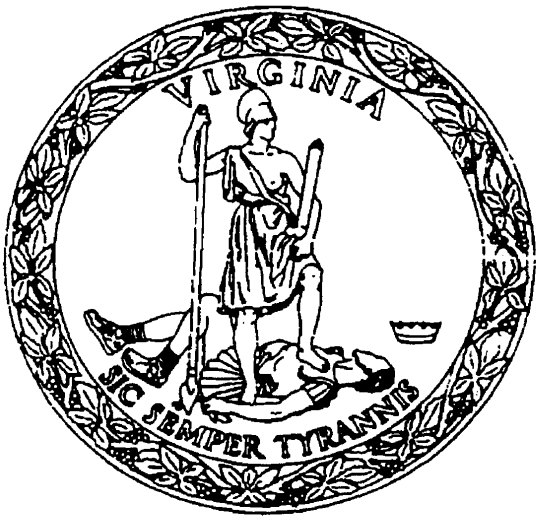
Risk	*Mitigation Steps*	*Owner/Responsibility*	*Resol. Date*	*Showstopper*
• Disgruntled agents will pressure the Agency to continue manual license system.	• Seek funding for hardware for license agents. • Communicate more frequently with license agents to address their concerns. • Ensure that Ray Davis is aware that some agents will stop selling but many more will begin, resulting in overall increase in sales and coverage.	• Kathy Graham		Yes

Notes/Additional Comments

Appendix B:
Report on the
Detailed Planning/In-Progress Independent Verification and Validation (IV&V) Review

Appendix B
IV&V Planning and In-Progress Report

COMMONWEALTH OF VIRGINIA



Report on the

Detailed Planning/In-Progress Independent Verification and Validation (IV&V) Review

Of

AUTOMATED LICENSE DELIVERY SYSTEM

May 25 – June 7, 2005

Department of Game and Inland Fisheries

Table of Contents

Executive Summary

The Commonwealth of Virginia Information Technology (IT) Resource Management Policy for Technology Management requires the implementation of an Independent Verification and Validation (IV&V) Strategy for all Major IT Projects. At the direction of the Information Technology Investment Board (ITIB) and the Chief Information Officer (CIO), the VITA Project Management Division (PMD) was directed to include specific guidance and requirements for the IV&V of Major IT Projects in COV ITRM Standard GOV2004 - 02.3.2, *Project Management*, dated October 28, 2004, and to develop and implement an IV&V Review Program for Major IT Projects in support of the standard. An essential component of the IV&V Review Program is the presentation of IV&V Review Reports of all Major IT Projects. This is a *Detailed Project Planning/In-Progress IV&V Review* Report of the *Automated License Delivery System (or POS)* Project.

Background Information

Project Title: *Automated License Delivery System (Project Working Title: POS)*

Agency: *Department of Game and Inland Fisheries*

IV&V Service Provider: *The North Highland Company (Services provided through association with CGI-AMS)*

Date of IV&V: *May 25 – June 3, 2005*

Planned Start Date: *February 3, 2005*

Planned (Baseline) Completion Date: *July 1, 2005*

Estimated Completion Date: *July 15, 2005*

Estimated (Baseline) Total Project Cost: *$250,000*

Actual Cost-to-Date: *$82,374 (as of May 31, 2005)*

Estimated Total Project Cost at Completion: *$213,000 (as of May 31, 2005)*

Project Summary

The objective and scope of the POS Project, currently in the *Execution and Control* phase, is to develop an automated process for the delivery of hunting and fishing licenses to the public through the retail and governmental outlets that currently distribute manual hunting and fishing licenses, as they have done so since 1916. This project will be completed using the existing agency development platform and will not require any major software purchases. Once

developed and implemented across the Commonwealth, the system will benefit citizens, the retail Agents who sell the licenses, and DGIF by:

- Improving customer service by enabling customers to renew and replace licenses more quickly via the electronic system.
- Eliminating the required inventory of paper licenses for Agents by automating the entire licensing process.
- Enabling DGIF to better serve its customers via the creation of a licensee customer database for the first time and facilitating the creation of a single license for hunters and anglers.

The POS project has been deemed a major IT project due to its state-wide implications not its size, duration or complexity. The POS project is essentially an enhancement project to an existing application (the "electronic License Accounting Revenue System" or "eLARS") and is relatively small (budget = $250,000) and short in duration (approximately 6 months in total – February to July).

Summary of Findings

The POS project is positioned well for success, however, given the speed at which the project is progressing, it could benefit from increased communication and the introduction of more structure and rigor during the final weeks of the project. More communication will build awareness of the project's status. Increased structure and formality will broaden the team's focus beyond just the detail level of the project, which hopefully will reduce the number of unforeseen project issues and strengthen the project's position for success.

Currently, there have been no scope changes to the approved Project Charter, and the project is forecasting to come in under budget (Budget = $250,000 verses Estimated Cost at Completion = $213,000). The project schedule has slipped slightly and appears to be approximately two weeks behind.

Major Findings:

Given the team's focus on completing the POS project, less attention has been spent on actively tracking the project's financials, updating the project schedule, formally communicating the project's status via status reports, or receiving signoff on key project deliverables (e.g., requirements document, detailed design, etc.). This relatively informal approach to project management has had minor repercussions to date but could ultimately lead to conflicting expectations between the project team and business customer, unforeseen issues at the end of the project (e.g., schedule delays, unanticipated costs, etc.), and make it difficult to convey the true health of the project in terms cost and schedule to management.

The POS project is deemed a major IT project but it does not currently have a Commonwealth Major IT Project Status Report Dashboard. This is a conflict with the VITA policy on major IT projects and reduces visibility into the status of the POS project by VITA, the Commonwealth's CIO, and Secretary of Natural Resources. The POS project team has requested access to the Status Report Dashboard but, as of the date of this IV&V review, the issue has not been resolved.

A formal, people-centric Change Management Plan has not been developed for this initiative. The POS project is a technology tool that is being used as a catalyst for process change. Issuing

hunting and fishing licenses today is a manual, paper-based process; tomorrow the process will be automated as a result of the POS project. Although the new system will impact the internal business users, the magnitude of the change will be relatively minor when compared to the change imposed on the Agents that sell the licenses. Several change management activities have been conducted already (e.g. face-to-face meetings with Agents around the Commonwealth) and several activities planned (e.g. newsletters) by the project team, however, it is not possible to determine if the activities planned are the right activities or comprehensive enough to close the introduced process "gaps."

Minor Findings:

Deployment of the POS system to Agents will begin immediately after the system is "live" (~6-8 weeks from now); however, a formal deployment or implementation plan has not been developed nor communicated by the project team. The project team is in the process of developing the deployment plan based on Agent feedback (e.g. how the Agents want to receive training – via video, classroom or user manual) but a focused and formal effort has not been carried out to address all of the various aspects of the impending deployment (e.g., adoption metrics and targets, team composition, equipment needs, etc.). Thinking more broadly about how the deployment will be carried out will minimize risk and lessen the need for last second planning.

The executive sponsor for the POS project has had limited involvement with the project to date. The sponsor has relied heavily on the program manager to provide updates and provide active leadership and guidance to the project. However, as the project enters the final stages of development, critical issues/risks will be faced and important decisions will be made that the sponsor should be either knowledgeable on aware of prior to the system being put into production.

Note: For a complete listing of IV&V findings please see Appendix C.

Summary of Analysis

The findings documented above were gleaned over several days through interviews with the POS Project Manager, Kathy Graham, and the POS Program Manager, Virgil Kopf, and reviews of the existing POS project documentation. The IV&V Review team then compared its findings to VITA Project Guidelines, "best practices," and the past experience and learning of the IV&V review team members to develop short- and long-term recommendations that were appropriate for a small, short duration project like POS and a small agency IT shop like DGIF's. Most of the short-term recommendations should be initiated immediately to provide the POS project with the greatest chance of success (i.e., staying under budget, going live in July, etc.), while the long-term recommendations are meant to be more general to DGIF and applied to future DGIF IT projects.

Summary of Recommendations

The following recommendations are provided in order to enhance the likelihood of the project's success and the overall success and benefits of the POS system. Recommendations have been developed that fall into one of two groups: short-term recommendations and long-term recommendations. Short-term recommendations should be adopted by the POS project team immediately in order to ensure that the final few weeks of the project are spent strengthening and positioning the POS project for success. Long-term recommendations are focused on broader

opportunities for DGIF and are meant to increase the performance and success of future IT projects. .

Major Findings	Recommendations
Limited attention has been spent on actively tracking the project's financials, updating the project schedule, formally communicating the project's status via informative status reports, and receiving signoff on key project deliverables.	Short-Term: • The project manager should begin to track project financials (actuals vs. budget, estimated cost at completion) on a weekly basis. • The project manager should update the project schedule – "crashing" remaining tasks and activities – to assess whether a July 15 "go live" is still feasible. The project schedule should be updated and maintained on a weekly basis. • The project manager should modify the current status report to include additional information that will better communicate the project's health (e.g., actuals vs. budget, actual vs. planned completion dates, major risks & issues). • The project manager should submit the detailed design document project deliverable to the business customer for official signoff. Additionally, the project manager should set the expectation that other key project deliverables will require signoff over the remainder of the project (e.g., test plan, User Acceptance, etc.). Long-Term: • DGIF IT should develop a standard Status Report that should be used on all IT projects that emphasizes activities to date and planned in the near term, milestones/deliverables upcoming and recently completed, current issues and risks (with associated action plans and mitigation steps), and high-level cost information (Actuals vs. Budget or Earned Value Analysis). • Formal signoff by the business customer should be mandated on every key project deliverable (e.g., requirements, testing plan, training plan, change management plan, etc.) and included as a milestone in the project plan. • Additionally, DGIF IT should develop a standard template for each of its system development deliverables so that it becomes very clear where the project is in terms of system development lifecycle.
The POS project is deemed a major IT project but it does not currently have a Commonwealth Major IT Project Status Report Dashboard.	Short-Term: • The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.
A formal people-centric Change Management Plan has not been developed yet for this initiative.	Short-Term: • The project team should complete a high-level Stakeholder Analysis immediately to determine whether the existing communication and training plans will be sufficient to drive user adoption and minimize resistance to change. Long-Term: • DGIF should include people-focused change management plans in all future system development activities that impact end users to increase likelihood of project success. Additionally, the change management plan and the communications plan should be managed as part of the overall project plan to ensure a holistic and coordinated view of the project.
Minor Findings	**Recommendations**
A formal deployment	Short-Term:

or implementation plan has not been developed nor communicated by the project team.	• The project manager should develop a formal deployment plan (work plan) immediately that details all of the preparation, execution, closeout activities and deliverables that need to be carried out between now and July 2006. (Deployment metrics [e.g., adoption percentage by month, etc.] should be defined, measured, and reported as part of the implementation execution to enable progress to be tracked and action items to be developed as needed.) The formal deployment plan should be submitted to the Oversight Committee and Sponsor for approval to ensure buy-in, support, and awareness. **Note:** Components of the plan will change over the course of a year, however, without a formal document, it is impossible to determine if adequate planning has occurred.
The executive sponsor for the POS project has had limited involvement to date.	Short-Term: • A formal meeting should be conducted between the Project Manager, the Program Manager and the Project Sponsor prior to the project's "go-live" date to provide an update on the project's status, the decisions being made, and the major issues and risks being faced. This formal meeting engages the sponsor and allows him to familiarize himself with the high-level aspects of the project such that he is better informed and can communicate the status to his peers and supervisors. Long-Term: • Formal status meetings should be scheduled, and included on the project plan, with the project sponsors every 6-8 weeks to facilitate engagement and information transfer.

Summary of Best Practices

The majority of findings are focused on areas for improvement; however, there are several attributes of the POS project that could serve as benchmarks for other project teams. These practices are highlighted below.

The amount of interaction and collaboration between the POS IT project team members and the POS business customer project team members has been a model environment in terms of planning and executing an IT project. The primary business owner has dedicated time and resources to the POS project from the beginning and has strived to be actively engaged in the project work. The business owner is available on a weekly basis to discuss project status, review issues, make business rule decisions, and exchange information.

The experience and knowledge of the POS project team has also been optimal. The majority of the IT project team members were already very familiar with the existing automated licensing application because they helped build it originally. Leveraging resources that were already familiar with the code, the application, and existing business use enabled the project team to ramp up quickly and more accurately gauge the size, scope and complexity of the POS project.

Finally, the POS project has received significant attention and support from an agency executive. The program manager has provided unwavering executive level support throughout the life of the POS project and has been a vocal champion within the agency. The program manager has been instrumental at resolving issues, removing barriers, and providing guidance to the POS project team.

Summary of Lessons Learned

The following lessons learned are provided because of their broad and general applicability to all major IT projects. Any future project would strengthen its position for success if these lessons learned were integrated into the initiative's project plan.

- The introduction of more structure and formality to managing a project can aid in communicating status and setting expectations.
  - Regular tracking of and reporting on the project's financial health and schedule health can enable greater management governance and oversight.
  - Formal signoff on project deliverables can reduce the risk of scope creep and increase the ability to track project progress.
- Visibility into the project's status is diminished when a Major IT project does not have a Commonwealth Major IT Project Status Report Dashboard setup.
  - The goal of the Status Report Dashboard is to give VITA, the Commonwealth's CIO, and Secretary of Natural Resources easy access to the latest status of a major IT project.
- Change management cannot be underestimated or over planned.
  - Understanding the impact on the end-users and developing a coordinated approach to addressing identified gaps and issues can increase the likelihood and timeliness of user acceptance and adoption.

Introduction

The Commonwealth of Virginia Information Technology (IT) Resource Management Policy for Technology Management requires the implementation of an Independent Verification and Validation (IV&V) Strategy for all Major IT Projects. At the direction of the Information Technology Investment Board (ITIB) and the Chief Information Officer (CIO), the VITA Project Management Division (PMD) was directed to include specific guidance and requirements for the IV&V of Major IT Projects in COV ITRM Standard GOV2004 - 02.3.2, *Project Management*, dated October 28, 2004, and to develop and implement an IV&V Review Program for Major IT Projects in support of the standard. An essential component of the IV&V Review Program is the conduct of IV&V Review Reports of all Major IT Projects. This Detailed Project Plan/In-Progress IV&V Review of the POS Project is such a IV&V Review Report. In accordance with the POS IV&V Plan, this is the first IV&V Review in a series of two IV&V Reviews that will be conducted for the POS Project. The IV&V Schedule for the POS Project is shown below:

Activity	*Scheduled Date or Phase*
Develop IV&V Plan	May 25, 2005
Detailed Project Plan and In-progress IV&V Review	June 7, 2005
Closeout IV&V Review	August 12, 2005

Background

The Detailed Project Plan/In-Progress IV&V Review for the POS Project was conducted on May 25 through June 3 at the DGIF's offices at the DGIF headquarters in Richmond. The IV&V Review Team consisted of:

Michael Armour	*The North Highland Company*
Rodney Willett	*The North Highland Company*
Scott Hammer	*The North Highland Company*

Key personnel from the POS Project Management Team and DGIF participated in the Detailed Project Plan/In-Progress IV&V Review of the POS system. These agency personnel participating in the IV&V Review were as follows:

Kathy Graham	*Project Manager, IT Project Manager*
Virgil Kopf	*Program Manager, Assistant Director of Administrative Services*

Methodology

The Detailed Project Plan/In-Progress IV&V Review of the POS Project was conducted in accordance with the POS Project IV&V Plan. The IV&V Task Items were accomplished through a combination of interviews and documentation reviews. A list of the personnel contacted is provided in Appendix A and a list of the documents reviewed is provided in Appendix B. The accomplishment of the SOW specified IV&V Task Items resulted in the generation of detailed Findings for each IV&V Task Items and, where necessary, the development of Recommendations for corrective and/or improvement actions. The Detailed

Findings and Recommendations of the Detailed Project Planning/In-Progress IV&V Review of the POS Project are provided in Appendix C. Appendix D provides a list of Best practices observed during Review(s). Appendix E provides a detailed list of Lessons Learned to date for this project. Finally, the IT Project Complexity Model presented as Appendix A of COV ITRM Standard GOV2004 - 02.3.2, *Project Management*, dated October 28, 2004 was updated/re-accomplished for the POS Project. The updated/re-accomplished model is provided in Appendix F.

Appendix A: List of Personnel Contacted

The List of Personnel Contacted identifies the individuals who provided informational inputs to the POS Project Detailed Project Planning/In-Progress IV&V Review.

Number	Name	Title/Position	Organization
1	Kathy Graham	Project Manager	DGIF
2	Virgil Kopf	Program Manager	DGIF

Appendix B: List of Documents Reviewed

The List of Documents Reviewed identifies the documents that were reviewed as part of the POS Project Detailed Project Planning/In-Progress IV&V Review.

Number	Document/Data Title/Description
1	Project Charter
2	Detailed Design Document
3	Business Rules Document
4	Microsoft Project Plan
5	Project Proposal
6	Communications Plan
7	Change and Configuration Management Plan
8	Point of Sale User Manual (End-User and Manager)
9	Test Plan
10	Test Scenarios
11	Resource Plan
12	Project Health Report Card (Date: May 20, 2005)
13	Organization Breakdown Structure Worksheet
14	Application Module Database Design
15	Issues Log
16	POS Project IT Complexity Matrix
17	Risk Management Plan
18	CIO Approval Letter (authorization to proceed with the POS project)

Appendix C: Detailed Findings and Recommendations Table

The Detailed findings and Recommendations Table provides the detailed findings and recommendations developed during the POS Project *Planning/In-Progress* IV&V Review for each of the IV&V Review Areas and Tasks specified in the agency Statement of Work. (Specified in Attachment 1 and 2 of the SOW). "Not reviewed per SOW," is entered in the findings column for tasks not specified in the SOW.

Note: Recommendations have been developed that fall into one of two groups: short-term recommendations and long-term recommendations. Short-term recommendations should be adopted by the POS project team immediately to ensure that the final weeks of the project are well coordinated and any existing "gaps" are addressed. Long-term recommendations are focused on broader opportunities for DGIF IT and are meant to introduce structural or foundational items that are re-useable/repeatable and increase the likelihood of success of future DGIF IT projects. In order to distinguish between short- and long-term recommendations, the IV&V Review Team has purposely **bolded** all long-term recommendations noted under the "Recommendations" column.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Feasibility Studies	**FS-1**	Assess the methodologies used for the technical feasibility study verifying it was objective, reasonable, measurable, repeatable, consistent, accurate and verifiable.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	FS-2	Assess the methodologies used for the economic feasibility study verifying it was objective, reasonable, measurable, repeatable, consistent, accurate and verifiable.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Business Case	**BC-1**	Review and evaluate the Business Case for the project to assess its reasonableness.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

Review Area	Task Item	Task Description	Findings	Recommendations
Procurement	PROC-1	Verify that the procurement strategy supports Agency and Commonwealth project objectives.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	PROC-2	Review and make recommendations on the solicitation documents relative to their ability to adequately inform potential vendors about project objectives, requirements, risks, etc.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	PROC-3	Verify that the evaluation criteria are consistent with project objectives and evaluation processes are consistently applied; verify all evaluation criteria are metrics based and clearly articulated within the solicitation documents.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	PROC-4	Verify that the obligations of the vendor, sub-contractors and external staff (terms, conditions, statement of work, requirements, technical standards, performance standards, development milestones, acceptance criteria, delivery dates, etc.) are clearly defined. This includes verifying that performance metrics have been included that will allow tracking of project performance and progress against criteria set by the agency and the Commonwealth.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	PROC-5	Verify the final contract for the vendor team states that the vendor will participate in the IV&V process, being cooperative in the coordination and communication of information.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Project Complexity	**PC-1**	Verify that the assigned project complexity level is current and accurate. If the project complexity level is not current and/or accurate, then reassign a project complexity level to the project.	The POS project is essentially an enhancement effort to the existing eLARS application. The project has been assigned a complexity level of Low which is appropriate for the work being completed and the budgeted cost and duration of the project. The only reason this project has been deemed a Major IT project by VITA is that it has state-wide implications.	The project manager should review the IT Project Complexity Matrix on a monthly basis to ensure that the complexity level remains current.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Project Sponsorship	**PS-1**	Assess agency sponsor buy-in, participation, support and commitment to the project.	The official executive sponsor for the POS project is Ray Davis; however, the true champion for the project is Virgil Kopf, the project's Program Manager. Ray has committed the funds for the project but has had limited involvement in the project to-date. It appears the agency and Virgil Kopf are firmly committed to the project that has been anticipated for several years. Virgil Kopf is well respected within DGIF, a strong advocate of the project, and deeply committed to seeing the project succeed. Those factors have made him very helpful in providing visibility to the project and removing barriers to the project in a timely and decisive manner. Virgil provides project updates to Ray Davis on a weekly basis.	A formal meeting should be conducted between the Project Manager and the Project Sponsor prior to the project's go-live date to provide an update on the project's status, the decisions being made, and the major issues and risks being faced. This formal meeting engages the sponsor and allows him to familiarize himself with the high-level aspects of the project such that he is better informed and can communicate the status to his peers and supervisors. **On future projects, formal status meetings should be scheduled, and included on the project plan, with the project sponsors every 6-8 weeks to facilitate engagement and information transfer.** The project team should continue to engage Virgil Kopf on a regular basis to ensure his support and receive his guidance, and aid in resolving issues/risks.

Review Area	Task Item	Task Description	Findings	Recommendations
			Kathy Graham, the POS Project Manager, meets with Virgil Kopf on a weekly basis to discuss the POS project status. Virgil Kopf in turn then meets with Ray Davis on a weekly basis to provide an update on the POS project and other activities. There has been no formal project update provided to Ray Davis since the project started and, as a result, his knowledge and understanding of the project's status, timeline and issues/risks could be reduced.	The Project Manager should continue to meet with Virgil Kopf on a weekly basis to discuss the POS project's health and status. A formal meeting should be conducted between the Project Manager and the Project Sponsor prior to the project's go-live date to provide an update on the project's status, the decisions being made, and the major issues and risks being faced. This formal meeting engages the sponsor and allows him to familiarize himself with the high-level aspects of the project such that he is better informed and can communicate the status to his peers and supervisors
	PS-2	Verify that open pathways of communication exist among all project stakeholders.	Formal status reports have started to be developed to facilitate communication and provide visibility into the project's activities; however, the current status report does not easily allow for the progress and health of the project to be understood which lessens its standalone capabilities.	The project manager should continue to publish weekly status reports and add components to its current content (e.g., planned and actual dates to complete milestones, actual costs to date, remaining costs to complete project, comparison of actual to budget, etc.) to provide greater clarity into the project's status.
			The project team meets weekly to discuss the project's status, activities and issues and risks.	The project team should continue to meet weekly discuss the project's status and activities. The project team should also consider, as the "go-live" date gets closer, that the frequency of team meetings be increased (e.g., 2-3 times per week first thing in the morning) to foster urgency, facilitate communication, and ensure that the highest priority items are being worked on.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
			Kathy Graham, the Project Manager, meets with the business owner, John Moore, on a weekly or bi-weekly basis to discuss the POS project's status as well as to receive guidance on business questions/issues (i.e., business rules) that need to be resolved such that system design and development can be completed.	The project manager should continue to meet with the business owner on a weekly basis.
	PS-2	Verify that open pathways of communication exist among all project stakeholders.	There have been 6 meetings conducted across the state with License Agents to communicate the initiative underway. DGIF has also sent an initial mailer that explains the POS project, the impact on them as Agents, and the benefits expected as a result of automating the current process. All Agents have Virgil Kopf's phone number and call him directly with any questions or concerns. There are plans to produce quarterly newsletters for the Agents to keep them informed.	Change management and Agent adoption will be a critical component to the success of the project and, thus the project team should continue to pro-actively communicate with the Agents - the more communication and interaction the better because it reduces user anxiety and improves adoption.
	PS-3	Verify that agency sponsor has bought-in to all changes which impact project scope, cost, schedule or performance.	There have been no changes to the POS project's scope. However, in order to increase the likelihood of the "go live" date being met, the project team has added a couple of resources (e.g., documentation/testing specialist, part-time developer, etc.). The impact of adding resources on the project's budget appears to be minimal.	The project manager should actively forecast the project's financials to ensure that the approved project budget is not going to be exceeded.

Review Area	Task Item	Task Description	Findings	Recommendations
Management Assessment	**MA-1**	Verify that lines of reporting and responsibility provide adequate technical, financial and managerial oversight of the project.	The core POS project team reports directly to the Project Manager, Kathy Graham, which enables her to effectively guide the technical work activities of the various team members. Additionally, the involvement of Virgil Kopf, the Program Manager, and John Moore, the primary Business Customer, has provided strong managerial oversight and visible support. Financial management and oversight, however at this point, has not been a focus of the project team and may end up leading to some surprises when the project concludes (i.e., schedule slippage, budget overruns). It should be noted at this point in the project, the project shows to be well under budget.	The current technical and managerial oversight structure should be continued; however, additional attention should be focused on regular tracking and forecasting costs and schedule adjustments for the remainder of the project (incorporating scope changes, new information, etc. as needed). More regular monitoring of the project's costs and schedule by the project manager will ease the ability to communicate the project's health to management as well as enable agency management to provide more oversight and guidance. **DGIF IT should develop a standard Status Report that should be used on all IT projects that emphasizes activities to date and planned in the near term, milestones/deliverables upcoming and recently completed, current issues and risks (with associated action plans and mitigation steps), and high-level cost information (Actuals vs. Budget or Earned Value Analysis).**
			Although the POS is considered a major IT project, it does not currently have a Commonwealth Major IT Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.

Review Area	Task Item	Task Description	Findings	Recommendations
	MA-2	Evaluate project progress, resources, budget, schedules, and reporting.	The POS project is essentially an enhancement project of an existing DGIF application, eLARS. The project is relatively small in terms of Budget ($250,000) and duration (less than 6 months) has been underway since early 2005. The project appears to be progressing well and is adequately staffed. To date, financial and schedule management have not been a focus for the project team which could increase the risk of the project exceeding budget or the schedule slipping. o As of May 31, the project manager reports actuals to date are $82,374 and predicts that total project cost at completion will be approximately $213,000 which is less than the approved $250,000 budget. o The POS project is targeted to "go live" by July 15, but the current project plan shows a late July "go live." Given the current schedule, it appears the project may be at risk of missing its target by a couple of weeks. It should be noted that the project manager is refining the plan to see where the remaining schedule can be "crashed" and time can be saved. The project team appears highly skilled and has deep experience with the eLARS application which dramatically increases the likelihood of success of this enhancement project.	The project manager should begin to actively and regularly manage the project's financials (comparing actuals/forecasts to budget) and update the project schedule, "crashing" remaining tasks where possible, to assess whether a July 15 "go live" is still feasible. The financial and schedule information should then be communicated to the program manager and sponsor. **DGIF IT should develop a standard Status Report that should be used on all IT projects that emphasizes activities to date and planned in the near term, milestones/deliverables upcoming and recently completed, current issues and risks (with associated action plans and mitigation steps), and high-level cost information (Actuals vs. Budget or Earned Value Analysis).**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	MA-3	Assess coordination, communication and management, to verify agencies and departments are not working independently of one another.	The POS Project is a fairly self contained project within DGIF. DGIF is working with VIPNet to ensure that the front-end User Interface changes are synced up with the backend eLARS application changes by conducting formal meetings every 2-3 weeks and more regular, informal discussions on a weekly basis.	The project team should also consider, as the "go-live" date gets closer, that the frequency of formal meetings with VIPNet be increased (e.g. 2-3 times per week first thing in the morning) to foster urgency, facilitate communication, and ensure the highest priority items are being worked on.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Project Management	**PM-1**	Verify that a project management plan exist and is being followed.	A project plan has been created in Microsoft Project that outlines the activities that need to be completed in order to "go live" with the eLARS enhancements. The project plan was initially developed by collaborating with the project team to identify all of the needed activities required to complete the project. Additionally, VIPNet provided a component of the work plan outlining their work and responsibilities. The initial work plan was developed in a "waterfall" approach which has made updating the plan difficult given the iterative nature of the design and development work. The project plan is being updated on a regular basis to reflect actual effort expended and actual dates of task/activity completion, however, the future activities have not been adjusted to reflect the latest information and now shows a "go live" date at the end of July as opposed to the targeted July 15 date. Not knowing whether the remaining activities can be "crashed" to conserve time, there is concern that this project may miss its targeted due date given the limited number of work days remaining.	**On future projects, DGIF IT should continue the practice of project plan development through collaboration. Collaboration leads to the most comprehensive plan and begins to build buy-in to the project.** The project manager should update the project schedule – "crashing" remaining tasks and activities – to assess whether a July 15 "go live" is still feasible. Once the plan is updated, the timeline should be communicated or re-affirmed.

Review Area	Task Item	Task Description	Findings	Recommendations
	PM-2	Evaluate the project management plan maintenance procedures to verify that they are developed, communicated, implemented, monitored and complete.	The project team has a defined procedure to update the project plan with their actual effort to complete a task/activity. The plan is reviewed weekly in project team meetings and updates are regularly monitored by the project manager. The project plan is being updated on a regular basis to reflect actual effort expended and actual dates of task/activity completion, however, the future activities have not been adjusted to reflect the latest information and now shows a "go live" date at the end of July as opposed to the targeted July 15 date. Not knowing whether the remaining activities can be "crashed" to conserve time, there is concern that this project may miss its targeted due date given the limited number of work days remaining.	The project manager should update the project schedule – crashing remaining tasks and activities – to assess whether a July 15 "go live" is still feasible. Once the plan is updated, the timeline should be communicated or re-affirmed.
	PM-3	Evaluate project reporting processes and procedures and actual project reports to verify that project status is being accurately traced using project metrics.	Formal status reports, including several project metrics, have started to be developed to facilitate communication and provide visibility into the project's activities; however, the current status report does not easily allow for the progress and health of the project to be understood which lessens its standalone capabilities.	The project manager should continue to publish weekly status reports and add components to its current content (e.g., planned and actual dates to complete milestones, number of planned and actually completed milestones/ deliverables, actual costs to date, remaining costs to complete project, comparison of actual to budget, etc.) to provide greater clarity into the project's status.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PM-4	Verify that milestones and completion dates are planned, monitored, and met.	The project manager, Kathy Graham, monitors milestones and deliverables closely. Kathy works with individual project team members to review the status of their upcoming milestones and has attempted to track the project team's performance in hitting milestones/deliverables. The tracking of meeting milestones has been good, however, it does not appear current team performance has been incorporated into the team's ability to make future milestones which could lead to future milestones being missed.	The project manager should continue to monitor and assess the team's performance in hitting milestones, but should also look forward to understand the implications, if any, on the team's ability to hit future milestones/ deliverables and adjust the plan accordingly.
	PM-5	Verify the existence and institutionalization of an appropriate project issue tracking mechanism that documents issues as they arise, enables communication of issues to proper stakeholders, documents a mitigation strategy as appropriate, and tracks the issue to closure.	The project team has been leveraging the VITA Issues Log as its issue tracking mechanism. Issues are captured on the log and then action plans are developed to close/resolve the issue. The issues log is reviewed regularly with Virgil Kopf.	The project manager should continue to actively manage the resolution of issues and regularly review the issues with Virgil Kopf. Major issues and risks should also be captured formally on the weekly status report to increase visibility and when a formal status update meeting occurs with the executive sponsor, Ray Davis, the project manager should plan to discuss the biggest issues (and any significant project risks).

Review Area	Task Item	Task Description	Findings	Recommendations
	PM-6	Evaluate the status of the schedule being reported for the project on the Commonwealth Major IT Project Status Report Dashboard.	It is not possible to evaluate the schedule reported on the Status Report Dashboard because the POS Project does not currently have a Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.
	PM-7	Verify that the Critical Path Milestones described for the project on the Commonwealth Major IT Project Status Report Dashboard are those approved by Agency Management, including the date when the Critical Path Milestones received approval from Agency Management.	It is not possible to verify the Milestones described on the Status Report Dashboard because the POS project does not currently have a Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue. It should be noted that the POS Project Charter does contain a list of approved milestones which are the baseline for the Status Report Dashboard. The Project Charter was approved on March 28, 2005.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITAPMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PM-8	Evaluate the system's planned life-cycle development methodology or methodologies (waterfall, evolutionary spiral, rapid prototyping, incremental, etc.) to see if they are appropriate for the system being developed.	The POS project team is following a "waterfall" system development methodology. Although there are parts of the design and development process that are more iterative in nature, the waterfall approach is acceptable for this enhancement project.	**On future projects, DGIF project managers may find it valuable to incorporate additional iteration tasks related to requirements design and development (e.g., complete first draft of detailed design, finalize detailed design document, etc.).**
	PM-9	Evaluate the status of each Measure of Success being reported for the project on the Commonwealth Major IT Project Status Report Dashboard.	It is not possible to evaluate the Measures of Success being reported on the Status Report Dashboard because the POS Project does not currently have a Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PM-10	Verify that the Measures of Success for the project incorporate input from the system's users and customers.	Official measures of success for this project have not been defined nor does the project have a Status Report Dashboard. As a result, it is not possible to verify how much customer input went into defining what success looks like for this project.. The project manager, Kathy Graham, and the program manager, Virgil Kopf, are able to articulate success measures quite clearly. o Complete development by August 1, 2005. o Complete project for less than $250,000 (to maximize business case). o Automate the signup of new Agents. o Replace the current manual and paper based license process. o Support the collection and distribution of revenues in a timely manner. In addition, the benefits noted in the approved Project Charter are related to Measures of Success.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date. o The project manager should work with the business customer, John Moore, and the program manager, Virgil Kopf, to develop 3-5 measures of success that can be added to the Status Report Dashboard.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PM-11	Verify that the Internal Agency Oversight Committee (IAOC) has approved the Measures of Success, including the date when the Measures of Success received approval from the IAOC.	The project manager, Kathy Graham, and the program manager, Virgil Kopf, are able to articulate success measures quite clearly, however, there is no formal measures documented. Benefits have been noted in the Project Charter (approved on March 28, 2005), but they are not a direct substitution for measures of success.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date. o The project manager should work with the business customer, John Moore, and the program manager, Virgil Kopf, to develop 3-5 measures of success that can be added to the Status Report Dashboard and distribute to stakeholders.
	PM-12	Determine if the project has remained within its approved scope.	The POS project's scope has not changed since the approval of the Project Charter.	The project manager should continue to proactively manage project scope and ensure that the scope is not expanded because it will affect the project's budget and timeline.
	PM-13	For each change in the approved scope of the project verify the date the change was approved and by whom.	N/A – The POS project's scope has not changed since the approval of the Project Charter.	N/A
	PM-14	For each change in the approved scope of the project evaluate the description of the change, the reason for the change, and the impact of the change, particularly on the cost and schedule baselines of the project.	N/A – The POS project's scope has not changed since the approval of the Project Charter.	N/A

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Business Process Reengineering	**BPR-1**	Evaluate the project's ability and plans to redesign business processes to achieve improvements in critical measures of business performance, such as cost, quality, service, and speed.	License Accounting, which is the business user group affected by this enhancement project, has had strong involvement with the POS project since the project's inception. The primary business owner meets weekly with the project team to discuss issues/risks and one of the core project team members has been a person from License Accounting. License Accounting is already using the eLARS system today and, thus, the primary impact on them is how they will leverage the system, not how the process changed (i.e., new functionality not a new system). It should also be noted that the Business Analyst (BA) for this project was also the primary BA on development of the existing eLARS application and is very familiar with the business processes.	The project team should continue to actively engage the business customer as the project proceeds to its completion. **On future DGIF IT projects, the level of involvement and participation of the business should be replicated.**

Review Area	Task Item	Task Description	Findings	Recommendations
	BPR-2	Verify that the reengineering plan has the strategy, management backing, resources, skills and incentives necessary for effective change.	There has been strong collaboration among IT and the business customer throughout the project to-date. Additionally, management support has been unwavering since the beginning, and the project has benefited from having many resources that are knowledgeable of the current eLARS application. In fact the Business Analyst (BA) for this project was also the primary BA on development of the existing eLARS application and is very familiar with the business processes.	The project team should continue to actively engage the business customer as the project proceeds to its completion.
	BPR-3	Verify that resistance to change is anticipated and prepared for by using principles of change management at each step (such as excellent communication, participation, incentives) and having the appropriate leadership (executive pressure, vision, and actions) throughout the reengineering process.	There are two main stakeholder groups that will be affected by the POS project: the License Accounting (LA) group and the Agents. The Agents are going to be most effected since they are going from a paper process to a computer based process, while the LA group will be leveraging new functionality on their existing system but will be answering new and different types of user questions. While some change management activities (e.g., face-to-face meetings, newsletters, etc.) related to both groups has occurred, there has been no formal Readiness Assessment or Stakeholder Analysis completed which could minimize the effectiveness of planned change management activities and, ultimately, user adoption.	A formal Readiness Assessment or Stakeholder Analysis should be conducted to understand the amount of change inflicted on the various stakeholder groups and the types of new skills required by the stakeholders. Once this information is gathered, specific training plans and actions can be developed, gaps in the current change management activities identified, and communication can be more targeted, which should reduce stakeholder anxiety, increase speed of adoption, and allow DGIF to realize expected benefits more quickly.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Risk Management	**RM-1**	Verify that risk management processes and procedures exist and are being followed. Evaluate the project's risk management processes and procedures to verify that risks are identified and quantified and that mitigation plans are developed, communicated, implemented, monitored, and complete.	A draft version of the Risk Management Plan has been completed by the project team. To date, risks have been managed as part of an ongoing list of issues. Managing risks and issues together on a small project such as the POS project is acceptable, but it could cause the team to stay in the details and lose sight of the bigger picture.	The project manager should conduct a team-wide (business customer and IT) brainstorming session immediately where the focus is to identify and assess the magnitude and likelihood of potential risks. Those risks deemed most likely should have mitigation plans developed and be monitored for the remainder of the project and potentially into the year long deployment. **On future projects, develop and actively manage a risk management plan, even a modified one (i.e., scaled down version), in order to increase the likelihood of project success.**
			Overall, the POS project has a relatively low technical risk profile: o The project team has deep experience with the existing application. o The scope has been managed well and no new requirements have been added. o The "go live" date is flexible and a simple fallback plan (e.g., continue using the manual process a little longer) is available.	The project team should conduct a monthly QA review session to review all closed and outstanding issues, risks and associated action plans/mitigation plans with the project sponsor to ensure that issues and risks are closely managed and communicated in the late stages of this project.
			There are several global risks that concern the Program Manager, Virgil Kopf, which could significantly impact the project's outcome. o The current assumption is that Agents will buy their own hardware to leverage the new system. If this assumption changes and DGIF must supply the computers or subsidize the Agents, the business case for the POS project is undermined	The program manager and the project manager should work with or present to Ray Davis mitigation steps to lessen the likelihood of these identified global risks.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	RM-2	Verify that a list of risk events is maintained and that the probability of occurrence and impact are measured for each event.	A draft version of the Risk Management Plan has been completed by the project team which highlights potential risks, their likelihood and impact, and steps to mitigate the risk.	The project manager should conduct a team-wide (business customer and IT) brainstorming session immediately where the focus is to identify and assess the magnitude and likelihood of potential risks. Those risks deemed most likely should have mitigation plans developed and be monitored for the remainder of the project and potentially into the year long deployment.
	RM-3	Verify that a mitigation approach has been documented for each risk event listed.	A draft version of the Risk Management Plan has been completed by the project team which highlights potential risks, their likelihood and impact, and steps to mitigate the risk.	The project manager should conduct a team-wide (business customer and IT) brainstorming session immediately where the focus is to identify and assess the magnitude and likelihood of potential risks. Those risks deemed most likely should have mitigation plans developed and be monitored for the remainder of the project and potentially into the year long deployment.
	RM-4	Determine if any risk events have been dropped from the list and the reason why.	The initial list of risks noted in the Risk Management Plan draft have not changed over the course of the project. To date, risks have been managed as part of an ongoing list of issues. Managing risks and issues together on a small project such as the POS project is acceptable, but it could cause the team to stay in the details and lose sight of the bigger picture.	The project manager should conduct a team-wide (business customer and IT) brainstorming session immediately where the focus is to identify and assess the magnitude and likelihood of potential risks. Those risks deemed most likely should have mitigation plans developed and be monitored for the remainder of the project and potentially into the year long deployment.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
			It is not possible to verify the top five risk events on the Status Report Dashboard because the POS Project does not currently have a Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.
	RM-5	Verify that the top five risk events identified for the project are those being reported for the project on the Commonwealth Major IT Project Status Report Dashboard.	There are several global risks that concern the Program Manager, Virgil Kopf, and could significantly impact the project's outcome: o The current assumption is that Agents will buy their own hardware to leverage the new system. If this assumption changes and DGIF must supply the computers or subsidize the Agents, the business case for the POS project is undermined. o Given the recent change in DGIF leadership, this project may fall out of favor with the new, interim DGIF Director. o Many current Agents are not computer savvy and may balk at using an automated system instead of a license book.	The program manager and the project manager should work with or present to Ray Davis mitigation steps to lessen the likelihood of these identified global risks.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	RM-6	Verify that the Internal Agency Oversight Committee (IAOC) has reviewed the project Risk Assessment(s), including the date(s) when the Risk Assessment(s) were reviewed by the IAOC.	To date, risks have been managed as part of an ongoing list of issues. The list of issues and risks are discussed regularly with John Moore, the business owner, and Virgil Kopf, the program manager. John and Virgil are two-thirds of the Oversight Committee.	On future projects, the project manager should maintain a list of the most likely and highest impact risks (and issues) on the project's status report in order to keep visibility and attention on them.
Change Management	CHM-1	Verify that change management processes and procedures exist and are being followed. Evaluate the project's change management processes and procedures to verify they are developed, communicated, implemented, monitored, and complete.	While the project team has conducted some change management activities (e.g., face-to-face meetings, newsletters, etc.) related to both Agents and internal business users, a formal change management plan was never constructed to guide and coordinate team efforts. Without a formal change management plan, the change activities that are being carried out may be less than effective.	The project team should complete a high-level Stakeholder Analysis immediately to determine whether the existing communication and training plans will be sufficient to drive user adoption and minimize resistance to change. **DGIF should include people-focused change management plans in all future system development activities that impact end users to increase likelihood of project success. Additionally, the change management plan and the communications plan should be managed as part of the overall project plan to ensure a holistic and coordinated view of the project.**
	CHM-2	Evaluate the project's organizational change management processes and procedures to verify that organizational resistance to change is anticipated and prepared for.	No formal organizational change management plan has been developed which could mean that stakeholder resistance to change could be underestimated.	The project team should complete a high-level Stakeholder Analysis immediately to determine whether the existing communication and training plans will be sufficient to drive user adoption and minimize resistance to change.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
				DGIF should include people-focused change management plans in all future system development activities that impact end users to increase likelihood of project success. Additionally, the change management plan and the communications plan should be managed as part of the overall project plan to ensure a holistic and coordinated view of the project.
Communication Management	**COM-1**	Verify that communication processes and procedures exist and are being followed. Evaluate the project's communication processes and procedures to verify they support communications and work product sharing between all project stakeholders; and assess if communication plans and strategies are effective, implemented, monitored and complete.	A formal communications plan has been developed for this project that lists out the various stakeholders and their associated information needs.	The project team should complete a high-level Stakeholder Analysis immediately to determine whether the existing communication and training plans will be sufficient to drive user adoption and minimize resistance to change. **On future projects, the change management plan and the communications plan should be developed/updated together and managed as part of the overall project plan to ensure a holistic and coordinated view of the project.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Configuration Management	**CM-1**	Review and evaluate the configuration management (CM) processes and procedures associated with the development process. Verify that configuration management (CM) processes and procedures exist and are being followed. Evaluate the project's configuration control processes and procedures to verify that they are effective, implemented, monitored and complete.	A formal configuration management plan has been developed and is being followed by the POS project team. The procedures and processes are not sophisticated, but seem appropriate given the size of the DGIF IT department and the POS project team. The team has a defined standard for all project documentation and work product and leverages Source Safe to manage code versions. All project related work product is backed-up nightly and stored on the DGIF's J:/ drive. It should be noted that DGIF IT is starting to leverage Sharepoint as its document repository.	The project manager should continue to monitor the effective of the configuration management plan and ensure project team compliance to the configuration plan. **DGIF should migrate to using Sharepoint as it's primary project document repository because it provides greater flexibility and control around access, view rights, and versioning.**
	CM-2	Verify that all critical development documents, including but not limited to requirements, design, code and test are maintained under an appropriate level of control.	All project related work product is stored on either DGIF's J:/ drive or Sharepoint (only status reports currently). Access to the J:/ drive is limited to the development team only and each primary project work product has a primary owner. The project team is small and co-located, and, although the existing amount of control is limited, it seems appropriate for a team and project of this size.	The project manager should continue to monitor the effective of the configuration management plan and ensure project team compliance to the configuration plan. Before project closeout, the project team should update all documentation to ensure completeness and accuracy which will aid future support efforts.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	CM-3	Verify that the processes and tools are in place to identify code versions and to rebuild system configurations from source code.	The project team is leveraging Microsoft Source Safe to manage and control all project code and code versions. Access to Source Safe is appropriately limited to the development team. Source Safe is located on DGIF's network, the network is backed up nightly, and full back-ups occur weekly which reduces the risk of losing code.	The project team should continue the practice of using Source Safe in order to reduce the risk of the introduction of the wrong or old code.
	CM-4	Verify that appropriate source and object libraries are maintained for training, test, and production and that formal sign-off procedures are in place for approving deliverables.	The project team leverages Source Safe to manage and control all project code and code versions. Source Safe is used to coordinate all promotion and migration of code to the test and production environments.	The project team should continue the practice of using Source Safe in order to reduce the risk of the introduction of the wrong or old code.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	CM-5	Verify that appropriate processes and tools are in place to manage system changes, including formal logging of change requests and the review, prioritization and timely scheduling of maintenance actions.	There is no documented project change request process which could lead to questions on how changes are approved. This has not been an issue for this project because the project's scope has not changed to-date. DGIF IT has a defined process and tool in place to capture system issues and enhancement requests once a system is in Production. The Request For Computing Services (RFCS) system is a home grown system that allows bugs/enhancements to be logged, prioritized, and assigned and action plans developed. RFCS is used to coordinate and control DGIF IT Support and Development efforts.	**DGIF should develop a standard project change request process that can be followed and leveraged by all DGIF IT projects. A defined standard will ensure consistency from project to project and reduce project team and stakeholder confusion.** The use of the RFCS system should be continued to manage system change requests.
	CM-6	Verify that mechanisms are in place to prevent unauthorized changes being made to the system and to prevent authorized changes from being made to the wrong version.	DGIF IT has a defined Change Control Form that must be approved by leadership prior to any new code being introduced into Production to ensure control over Production systems. Access to various DGIF network drives and systems, including Source Safe, is limited to the Development team. Given the size of the DGIF IT group (~10 people), this level of control should be sufficient.	The project team should leverage the defined Change Control Form prior to promoting the POS code into Production. The project manager should continuously assess whether sufficient control is being maintained over eLARS system.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	CM-7	Review the use of CM information (such as the number and type of corrective maintenance actions over time) in project management.	Root cause or trend analysis is not possible because there has been no formal tracking of issues against code versions or tracking of issues against quality targets for this project. This has not been an issue because the POS project is a relatively small enhancement project. Once the POS project is completed, DGIF IT will be able to use the RFCS system to gather metrics on application performance and quality.	**On future large projects, a more structured approach to configuration management should be established to better identify opportunities for corrective action (e.g., defect tracking) or process improvement.**
Project Estimating and Scheduling	PES-1	Evaluate the estimating and scheduling process of the project to ensure that the project's planning assumptions, budget and resources are adequate to support the work-breakdown structure and schedule.	Initial project efforts were developed using a collaborative approach. Project team members, most of whom were knowledgeable on the existing eLARS application, were lead through a working session by the project manager in order to develop initial estimates. These estimates were then refined by individual team members in order to develop more accurate estimates. The work area that has been most underestimated in terms of estimated effort versus actual effort is project documentation. Kathy Graham, the Project Manager, pushed the team to develop detailed documentation as part of their detailed design. To aid the team, a resource has been brought on to the team to help document and update the documentation.	**A team based approached to developing work effort estimates is a best practice and should be replicated on all future projects. Given the complexity of the project, the project manager should add contingency hours into the efforts to give more flexibility as unknowns are encountered.** Before project closeout, the project team should update all documentation to ensure completeness and accuracy which will aid future support efforts.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PES-2	Examine historical data and data sources to determine if the project has been able to accurately estimate the schedule, labor requirements and cost of product, service or system development efforts.	The project team is capturing actual effort to complete a task; however, at this point, there has been no calculation to determine how well those actual efforts compare to planned efforts. The project appears to have the appropriate number of resources to complete the enhancement.	The project manager should begin to track actual verses budget numbers on a weekly basis. In addition, forecasts of the remaining work, incorporating the latest information on tasks and activities, should be updated to enable a prediction to be made on how the project's actual costs will compare to the approved budget. **DGIF IT should define a standard project status report that all projects use to communicate their health that includes a section on Actuals vs. Budget comparisons.**
	PES-3	Examine historical data and data sources to determine if the project has been able to accurately apply Earned Value Management to the project.	Earned Value Management (EVM) is not being applied on this project. EVM t is a sophisticated tool to measure the project's status (amount of schedule variance and cost variance). Kathy Graham, the Project Manager, has expressed interest in using EVM on future projects.	In the absence of EVM and to build greater understanding of the project's status, the project manager should increase her focus on tracking actuals to budget and updating the project schedule to reflect the latest information. **Microsoft Project is capable of supporting EVM, and DGIF project managers should obtain the knowledge (i.e., take a training class) on how they can setup projects for EVM and then report on the EVM components of a project.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PES-4	Examine historical data and data sources to determine if the project has been able to accurately accumulate the actual costs of tasks completed for the project.	The project team is capturing actual effort to complete a task; however, at this point, there has been no calculation to determine how well those actual efforts compare to planned efforts.	The project manager should begin to track actual versus budget numbers on a weekly basis. In addition, forecasts of the remaining work, incorporating the latest information on tasks and activities, should be updated to enable a prediction to be made of how the project's actual costs will compare to the approved budget. **DGIF IT should define a standard project status report that all projects use to communicate their health that includes a section on actuals vs. budget comparisons.**
	PES-5	Examine historical data and data sources to determine if the project has been able to accurately determine the earned value of tasks completed for the project.	Earned Value Management (EVM) is not being applied on this project. EVM is a sophisticated tool to measure the project's status (amount of schedule variance and cost variance). Kathy Graham, the Project Manager, has expressed in using EVM on future projects.	In the absence of EVM and to build greater understanding of the project's status, the project manager should increase her focus on tracking actuals to budget and updating the project schedule to reflect the latest information. **Microsoft Project is capable of supporting EVM, and DGIF project managers should obtain the knowledge (i.e., take a training class) on how they can setup projects for EVM and then report on the EVM components of a project.**
	PES-6	Examine historical data and data sources to determine if the project has been able to accurately accumulate the budgeted cost/planned value of tasks for the project.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

Review Area	Task Item	Task Description	Findings	Recommendations
	PES-7	Examine historical data and data sources to determine if the project has been able to accurately calculate Schedule Variance.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	PES-8	Examine historical data and data sources to determine if the project has been able to accurately calculate Cost Variance.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	PES-9	Compare and evaluate the status of the planned and actual costs being reported for the project on the Commonwealth Major IT Project Status Report Dashboard.	It is not possible to evaluate the status of planned and actual costs being reported on the Status Report Dashboard because the POS Project does not currently have a Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.
	PES-10	Validate that the Planned Costs To Date reflected for the project on the Commonwealth Major IT Project Status Report Dashboard are the same as those approved by the Internal Agency Oversight Committee.	It is not possible to validate the Planned Costs to Date reflected on the Status Report Dashboard because the POS Project does not currently have a Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.

Review Area	Task Item	Task Description	Findings	Recommendations
	PES-11	Validate the Actual Costs To Date figures reported for the project on the Commonwealth Major IT Project Status Report Dashboard.	It is not possible to validate the Actual Costs to Date reported on the Status Report Dashboard because the POS Project does not currently have a Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue. To date, Actual costs versus Budgeted costs have not been tracked which raises the risk of the project exceeding its budget and no one being aware of it.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date. The project manager should begin to track actual versus budget numbers on a weekly basis. In addition, forecasts of the remaining work, incorporating the latest information on tasks and activities, should be updated to enable a prediction to be made on how the project's actual costs will compare to the approved budget.
	PES-12	Evaluate the nature and amount of cost variance between the budgeted and actual costs to the project to date.	To date, Actual costs verses Budgeted costs have not been tracked so it is not possible to evaluate the size of the cost variance.	The project manager should begin to track actual versus budget numbers on a weekly basis. In addition, forecasts of the remaining work, incorporating the latest information on tasks and activities, should be updated to enable a prediction to be made on how the project's actual costs will compare to the approved budget.

Review Area	Task Item	Task Description	Findings	Recommendations
	PES-13	Verify that Internal Agency Oversight Committee (IAOC) approved the Planned Costs for the Project, including the date when the Planned Costs received approval from the IAOC.	The Project Proposal and Project Charter were both formally approved on March 28, 2005 and allocated $250,000 for the POS project.	The project manager should begin to track actual versus budget numbers on a weekly basis. Proactively monitoring the project budget allows the project manager to communicate any potential cost overruns sooner rather than later to the appropriate agency leadership.
Project Personnel	PP-1	Examine the job assignments, skills, training and experience of the personnel involved in program development to verify that they are adequate for the development task.	The project team is composed of experienced resources, of which many are intimately familiar with the current eLARS application and the DGIF technical environment. The team dynamics appear to be very good.	The project manager should continually evaluate if additional resources or skills are required to complete the project. If additional resources are needed, the impact of these resources should be assessed.
	PP-2	Evaluate the project's personnel planning for the project to verify that adequate human resources will be available for development and maintenance.	A formal Resource Plan was developed for the POS Project that listed out the skills and resources needed to complete the project. The existing application support infrastructure for eLARS will not change as a result of this enhancement project. The impact on the support organization will be minimal.	The project manager should continually evaluate if additional resources or skills are required to complete the project. If additional resources are needed, the impact of these resources should be assessed. **On future projects, Change Management plans should always include an evaluation of support and maintenance stakeholders to ensure that the system can be supported properly once it goes "live."**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PP-3	Evaluate the project's personnel policies to verify that staff turnover will be minimized.	There has been no staff turnover on this project. In fact, staff turnover within DGIF IT is historically low.	The project manager should actively assess the mood and enthusiasm of the project team personnel in order to preempt a key member from leaving the project team and placing the completion of the project at risk. **For those few key personnel that are "irreplaceable," it is important that contingency plans are developed to build "back-up" resources such that continuity of work can be assured if key personnel were to leave DGIF.**

Review Area	Task Item	Task Description	Findings	Recommendations
Project Organization	**PO-1**	Verify that lines of reporting and responsibility provide adequate technical, financial and managerial oversight of the project. *** Repeat of MA-1***	The core POS project team reports directly to the Project Manager, Kathy Graham, which enables her to effectively guide the technical work activities of the various team members. Additionally, the involvement of Virgil Kopf, the Program Manager, and John Moore, the primary Business Customer, has provided strong managerial oversight and visible support. Financial management and oversight, however, at this point, has not been a focus of the project team and may end up leading to some surprises when the project concludes (e.g., budget overruns).	The current technical and managerial oversight structure should be continued; however, additional attention should be focused on tracking and forecasting costs for the remainder of the project (incorporating timeline changes or scope changes, etc. as needed). Monitoring how actual costs and budget costs compare will enable DGIF to exert greater financial management over the POS project. **DGIF IT should develop a standard Status Report that should be used on all IT projects that emphasizes activities to date and planned in the near term, milestones/deliverables upcoming and recently completed, current issues and risks (with associated action plans and mitigation steps), and high-level cost information (Actuals vs. Budget or Earned Value Analysis).**
			Although the POS is considered a major IT project, it does not currently have a Commonwealth Major IT Status Report Dashboard. Without a Status Report Dashboard, VITA, the Commonwealth's CIO, and the Natural Resources Secretariat have no visibility into the project's status. Kathy Graham, the Project Manager, has requested access but has not yet been able to resolve this issue.	The project manager should escalate the need for access to the Status Report Dashboard immediately with VITA PMD. Once access is granted, the Status Report Dashboard should be completed with the appropriate information to ensure that leadership has some exposure to the project's status prior to its "go-live" date.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PO-2	Verify that the project's organizational structure supports training, process definition, risk management, quality assurance, configuration management, product testing and any other functions critical for the project's success.	The project organizational structure appears comprehensive and to be interacting well. o Two of the three members of the project's Oversight Committee are regularly involved in the project. o There is a support function in place and ready to accept the enhancement. o There is a designated resource assigned to testing.	The project organizational structure should be regularly reviewed and address all functional areas needed to successfully deliver the IT project.
Contractors and External Staff	CES-1	Evaluate the use of contractors or other external sources of project staff (such as IS staff from another State organization) in project development.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	CES-2	Verify that the obligations of contractors and external staff (terms, conditions, statement of work, requirements, standards, development milestones, acceptance criteria, delivery dates, etc.) are clearly defined.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	CES-3	Verify that the contractors' software development methodology and product standards are compatible with the system's standards and environment.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	CES-4	Verify that the contractor has and maintains the required skills, personnel, plans, resources, procedures and standards to meet their commitment. This will include examining the feasibility of any offsite support of the project	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	CES-5	Verify that any proprietary tools used by contractors do not restrict the future maintainability, portability, and reusability of the system.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Oversight of Contractors	OC-1	Verify that project management oversight of contractors is provided in the form of periodic status reviews and technical interchanges.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	OC-2	Verify that the project management has defined the technical and managerial inputs the contractor needs (reviews, approvals, requirements and interface clarifications, etc.) and has the resources to supply them on schedule.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	OC-3	Verify that the project management staff has the ultimate responsibility for monitoring project cost and schedule.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Quality Management	**QM-1**	Evaluate and make recommendations on the project's quality assurance (QA) processes, procedures and organization.	A draft of a Quality Management Plan has been. It does appear that some level of peer reviews occur around technical design and coding but it is not formalized or expected. Peer reviews are a "best practice" and help to catch potential issues/bugs early and result in a better, more reliable application. The project team has been organized such that there is an independent person focused on testing which reduces the likelihood of testing bias. A draft of the POS testing plan has been completed. The test plan appears to be comprehensive and well thought out.	The project manager should schedule formal peer reviews between the developers such that coding standards can be verified and potential bugs/issues can be proactively identified. **On future projects, DGIF IT should schedule peer reviews at key points (e.g., requirements definition, detailed design complete, coding complete, etc.) during the project to increase the quality of the work product and ultimately lead to a better solution.** The project manager should include testing statistics (i.e., number of defects, number of scripts completed, etc.) on the project's status report over the final weeks of the project as a way to increase visibility into project team efforts.
	QM-2	Verify that QA has an appropriate level of independence from project management.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	QM-3	Verify that the QA organization monitors the fidelity of all defined processes in all phases of the project.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

Review Area	Task Item	Task Description	Findings	Recommendations
	QM-4	Verify that the quality of all products produced by the project is monitored by formal reviews and sign-offs.	Although the Project Proposal and Project Charter have been officially approved, no other key project deliverables have been formally reviewed and signed off on (e.g., requirements document, detailed design, etc.). This has not been a large issue for this project because the business customer, License Accounting, has been actively involved in the project; however, without formal sign-off, it makes it difficult to manage/identify scope changes.	The project manager should submit the requirements documents (or use cases) and detailed design documents to the customer for signoff to ensure a project baseline is established. **On future projects, formal signoff by the business customer should be mandated on every key project deliverable (e.g., requirements, testing plan, training plan, change management plan, etc.).**
	QM-5	Verify that project self-evaluations are performed and that measures are continually taken to improve the process.	There are no formal project self-evaluation processes in place for this project. Lack of regular self evaluation, process improvement, and lessons learned discussions may result in knowledge being lost and past problems/issues re-occurring or being repeated.	A thorough and open self evaluation should be conducted by the project team members (including both business and technical team members) to identify lessons learned targeted at improving IT processes and policies for future development projects. **On future projects, schedule lessons learned and/or process improvement sessions after every major milestone in order to build a project repository and institutional knowledge.**
	QM-6	Monitor the performance of the QA contractor by reviewing its processes and reports and performing spot checks of system documentation; assess findings and performance of the processes and reports.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	QM-7	Verify that QA has an appropriate level of independence. Evaluate and make recommendations on the project's Quality Assurance plans, procedures and organization.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	QM-8	Verify that the QA vendor provides periodic assessment of the CMM activities of the project and that the project takes action to reach and maintain CMM Level	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	QM-9	Evaluate if appropriate mechanisms are in place for project self-evaluation and process improvement.	There are no formal project self-evaluation processes in place for this project. Lack of regular self evaluation, process improvement, and lessons learned discussions may result in knowledge being lost and past problems/issues re-occurring or being repeated.	A thorough and open self evaluation should be conducted no more than two weeks after the "go-live" date by the project team members (including both business and technical team members) to identify lessons learned targeted at improving IT processes and policies for future development projects. **On future projects, schedule lessons learned and/or process improvement sessions after every major milestone in order to build a project repository and institutional knowledge.**

Review Area	Task Item	Task Description	Findings	Recommendations
Process Definition and Product Standards	**PDPS-1**	Review and make recommendations on all defined processes and product standards associated with the system development.	The POS project team is following a traditional system development methodology: Plan, Define, Design, Build, Test, and Deploy. The team is following the defined DGIF coding standards and has created a documentation standard as part of the Configuration Management Plan to foster work product consistency. The project team created a detailed design document format to use in completing the project but it is not as comprehensive as it could be (i.e., does not include information frequency of data exchange or communication protocol) and does not lend itself to traceability which could increase the effort to test and support the application. On a small and short project like POS, it has not been a limiting factor but on larger projects it could cause confusion.	The project manager should regularly evaluate compliance to the documentation standard and empower the lead developers to validate that all coding is meeting the defined DGIF coding standards as part of the formal, scheduled peer reviews. **DGIF IT should develop a standard template for each of its system development deliverables such that consistency is assured and content composition is predictable. DGIF IT may be able to leverage deliverables from other Commonwealth agencies who routinely undertake large and complex IT projects.**
	PDPS-2	Verify that all major development processes are defined and that the defined and approved processes and standards are followed in development.	Kathy Graham, the Project Manager, is responsible for ensuring documentation is compliant with the team standard; and the lead developers are responsible for ensuring development is complying with DGIF development and coding standards.	The project manager should communicate to the team the importance of complying with the defined standards and assess compliance on a regular basis.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	PDPS-3	Verify that the processes and standards are compatible with each other and with the system development methodology.	There appears to be no conflicts between the defined coding and documentation standards and the "waterfall" system development methodology being employed by the project team.	The project manager should regularly assess whether conflicts arise with the standards being followed by the project team.
	PDPS-4	Verify that all process definitions and standards are complete, clear, up-to-date, consistent in format, and easily available to project personnel.	All project related documentation, except for Status Reports contained on Sharepoint, are maintained on the DGIF Development group's j:/ drive.	**DGIF should migrate to using Sharepoint as it's primary project document repository since it provides greater flexibility and control around access, view rights and versioning.**
User Training and Documentation	**UTD-1**	Review and make recommendations on the training provided to product users. Verify that sufficient knowledge transfer occurs for the maintenance and operation of the new product.	Training is being focused on two sets of users: internal business users and Agents. Internal users are already using the eLARS application, so their training will be focused on new functionality and the types of questions they will receive. The type of training the Agent receives is up to the Agent. The Agent can select to receive a training video, a user manual, or attend a training workshop. The schedule for the Agent training workshops has not been defined yet, but will include classes held all over the state over the course of a year.	The project manager should formally develop a training plan for both internal users and Agents and submit it for review and approval by the Oversight Committee two weeks prior to the "go live" date to ensure buy-in and support for the plan. The training plan should take into account the results of the previously completed Stakeholder Analysis. The training plan should highlight the different audiences and their needs, the key training activities and who is responsible, a training timeline, targets and metrics to track and monitor, the resource requirements (i.e., test environment, conference room, etc.), the training tools to be used (video, PowerPoint, etc.).

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	UTD-2	Verify that training for users is instructor-led and hands-on and is directly related to the business process and required job skills.	All Agents will receive a hardcopy of the POS end user manual. In addition, an Agent can select to receive a training video or attend a training workshop. Agents that attend a workshop will have a chance to "play" on a test environment to build confidence and learn the application. The plan for internal business users is to learn about the new features and functionality on a test environment with a member of the development team there to address questions. This approach seems appropriate give the size of the License Accounting group (4-5 people).	The project manager should formally develop a training plan for both internal users and Agents and submit it for review and approval by the Oversight Committee two weeks prior to the "go live" date to ensure buy-in and support for the plan. The training plan should take into account the results of the previously completed Stakeholder Analysis. The training plan should highlight the different audiences and their needs, the key training activities and who is responsible, a training timeline, targets and metrics to track and monitor, the resource requirements (i.e., test environment, conference room, etc.), the training tools to be used (video, PowerPoint, etc.), and how feedback into the effectiveness of training will be gathered and incorporated.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	UTD-3	Verify that user-friendly training materials and help desk services are easily available to all users.	Agent training materials have not been finalized yet, but the initial draft documents appear to be very comprehensive and detailed and should guide Agents through using the system. No new help desk services will be required to support the POS project. o VIPNet will continue to provide front end (User Interface) support to end users. o DGIF IT will continue to provide backend support. o License Accounting will handle license related questions.	Once the results of the high-level Stakeholder Analysis are learned, the project manager should assess whether changes to the training materials is required. The training materials provided to the Agents should provide guidance around which questions should be directed which help desk.
	UTD-4	Verify that all necessary policies, processes, and documentation are easily available to users.	Agents will be able to access an electronic version of the user's manual online at the VIPNet site. Additionally, all Agents will receive a hard copy of the user's manual.	The project manager should add to the go-live checklist the action of confirming that the user's manual is accessible via the VIPNet site.
	UTD-5	Verify that all training is given on time and is evaluated and monitored for effectiveness, with additional training provided as needed.	N/A – No training has occurred yet since the POS project is still underdevelopment.	N/A – As part of executing the Agent training, a feedback mechanism should be developed in order to gauge the effectiveness of the training and improve the training class/materials for future participants.
Developer Training and Documentation	DTD-1	Review and make recommendations on the training provided to system developers.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DTD-2	Verify that developer training is technically adequate, appropriate for the development phase, and available at appropriate times.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

Review Area	Task Item	Task Description	Findings	Recommendations
	DTD-3	Verify that all necessary policies, processes and standards documentation are easily available to developers.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DTD-4	Verify that all training is given on time and is evaluated and monitored for effectiveness, with additional training provided as needed.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Requirements Management	**REQ-1**	Evaluate and make recommendations on the project's process and procedures for managing requirements.	There has been no formal signoff of the POS business requirements which could lead to scope creep and confusion. This risk has been minimized by the heavy involvement in the project by the business customer and the strong rapport between IT and the customer. Positive Finding: The project team has been keeping a running list of future enhancements for those items that have been deemed out of scope but should be tracked for future consideration.	The project manager should submit the requirements documents (or use cases) and detailed design documents to the customer for signoff to ensure a project baseline is established. **On future projects, formal signoff by the business customer should be mandated on every key project deliverable (requirements, testing plan, training plan, change management plan, etc.) to exert maximum control over scope.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	REQ-2	Verify that system requirements are well defined, understood and documented.	The POS project team has not produced a system requirements document. The team used an iterative approach to go from the identified business requirements (or use cases) to the detailed design. The detailed design document was continually refined and constructed in greater granularity that it essentially morphed from being a system requirements document to the detailed design document. At this point, it does not appear that this approach has hurt the project, however, without distinct project deliverables, it is difficult to know when one piece of work was concluded and another started. This makes it difficult to determine if the project is on schedule.	The project manager should submit the requirements documents (or use cases) and detailed design documents to the customer for signoff to ensure a project baseline is established. **DGIF IT should develop a standard template for each of its system development deliverables such that it becomes very clear where the project is in terms of system development lifecycle. DGIF IT may be able to leverage deliverables from other Commonwealth agencies who routinely undertake large and complex IT projects.**
	REQ-3	Evaluate the allocation of system requirements to hardware and software requirements.	N/A – The POS project is essentially an enhancement project so all system requirements will be met by existing hardware and software.	N/A

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	REQ-4	Validate that software requirements can be traced through design, code and test phases to verify that the system performs as intended and contains no unnecessary software elements.	It is possible to trace the detailed design document (which includes business requirements and references to the identified use cases) to the test plan. This linkage should ensure that the POS testing team conducts comprehensive testing of all new features and functionality.	The project manager and the testing team should remember to re-apply/incorporate the original eLARS test scripts to ensure that the new functionality did not break the existing system. **On future projects, all major project deliverables (i.e., requirements document, change management plan, test plan, etc.) should be submitted for formal approval to reduce the likelihood of scope creep, ease traceability, and provide a baseline.**
	REQ-5	Validate that the relationships between each software requirement and its system requirement are correct.	Although the project team did not formally document the POS system requirements, it is possible to see a direct correlation between a business requirement and the detailed design.	**DGIF IT should develop a standard template for each of its system development deliverables such that it becomes very clear where the project is in terms of system development lifecycle. DGIF IT may be able to leverage deliverables from other Commonwealth agencies who routinely undertake large and complex IT projects.**
	REQ-6	Verify that requirements are under formal configuration control.	The Configuration Management plan contains a defined documentation standard that is being used to manage and maintain control over the team's detailed design document. The detailed design document resides on the J:/ drive and can only be accessed by the development team.	**On future projects, DGIF should leverage Sharepoint as its primary document repository since it provides greater access control, versioning/history tracking and more flexible access.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Security and Privacy Requirements	**SPR-1**	Evaluate and make recommendations on project policies and procedures for ensuring that the system is secure and that the privacy of client data is maintained.	Access to the eLARS system will not change as a result of the POS project. Access will still be restricted based on user roles and permissions.	The project manager should assess and classify the POS project (and eLARS) and use of end-user data to ensure that the system is compliant to all current information privacy mandates (e.g., FISMA, etc.). VITA – IT Security can provide guidance. Based on the sensitivity of the end-user data, it may prove helpful to develop a high-level contingency plan for a situation when the data was compromised.
			Only the lead developers have access to the SQL database to minimize the risk of client data being compromised.	The project manager should also assess the access capabilities of each team member and change it accordingly to ensure the minimal number of people access to end user information/data.
			The data exchange between VIPNet and DGIF's eLARS is being facilitated through the use of a website located in DGIF's DMZ. This setup is a standard and acceptable practice.	The project manager should validate with VITA that the IT Architecture being used to support eLARS (interface with VIPNet, the ACH interface) is compliant with Commonwealth standards.
	SPR-2	Evaluate the projects restrictions on system and data access.	Access to DGIF systems and data is limited by user. Members of DGIF IT are the only ones with access to the J:/ drive which is where all of the critical project and system documentation, code and data resides.	The project manager should regularly evaluate, and take action as needed, if the current system and data restrictions don't seem appropriate and provide enough control.
	SPR-3	Evaluate the projects security and privacy risk analyses.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	SPR-4	Verify that processes and equipment are in place to back up client and project data and files and archive them safely at appropriate intervals.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Requirements Analysis	**RA-1**	Verify that an analysis of user needs and objectives has been performed to verify that requirements of the system are well understood, well defined, and satisfy any regulatory requirements.	The POS project is essentially an enhancement project to an existing application in use. The identification of requirements has been driven by the business owner, John Moore. He, and another end-user, Frances Boswell, have been actively engaged in the project to-date. The project team has used mockups and prototypes to gain feedback from business users and Agents as well as identify new requirements. Feedback will continue to be gathered such that additional enhancements can be noted and added to the existing list of future needs. The POS project does contain a few regulatory requirements that dictate certain restrictions or data to be captured. The regulatory requirements have been captured and included as business rules. The business rules have been reviewed with the Business Owner, John Moore.	**On future DGIF projects, the use of mockups and prototypes should be continued to gather user input since they result in the most detailed and precise feedback.** The project manager should submit the detailed design document and the business rules to business owner for signoff to ensure that all regulatory and business requirements are officially approved.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	RA-2	Verify that all stakeholders have been consulted to the desired functionality of the system, and that users have been involved in prototyping of the user interface.	The POS project is enhancing an existing application so the team has been able to gather new requirements quickly. The team used mockups and prototypes to solicit input and met weekly/bi-weekly with the business owner to validate desired functionality.	The project manager should submit the detailed design document and the business rules to business owner for signoff to ensure that all regulatory and business requirements are officially approved.
	RA-3	Verify that all stakeholders have bought-in to all changes which impact project cost, schedule or performance.	N/A – The project's scope has not changed since the approval of the Project Charter.	N/A
	RA-4	Verify that performance requirements (e.g. timing, response time and throughput) satisfy user needs.	No performance requirements have been defined for this project which will make it difficult to assess whether the project is successful.	Prior to "go-live," the project team should develop a list of performance metrics that will enable it clearly define whether the project was successful as well as be used as inputs into VIPNet's Service Level Agreement.

Review Area	Task Item	Task Description	Findings	Recommendations
	RA-5	Verify that user's operations and maintenance requirements for the system are completely specified.	Operations and maintenance for the POS project will continue under the existing support structure. DGIF IT has two dedicated resources providing application support for all of DGIF systems.	Within two weeks of the POS project going live, the project manager should setup a knowledge transfer session between the POS development team and the DGIF application support team to ensure they are well versed on the new functionality/features added to the eLARS application. **On future DGIF projects, formal knowledge transfer sessions should be included in the project plan to ensure that the application support team is well versed and knowledgeable of the associated new or enhanced system.**
			VIPNet is responsible for supporting and maintaining the front-end user interface and answering any Agent questions on the internet site.	The project manager should conduct a formal discussion with VIPNet to ensure they are properly prepared to answer Agent questions (they have all information they need, they understand what the preferred call routing process is, etc.)
			All business questions submitted by Agents will be addressed by License Accounting group.	

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Interface Requirements	**IR-1**	Verify that all system interfaces are exactly described, by medium and by function, including input/output control codes, data format, polarity, range, units, and frequency.	There are 3 primary interfaces related to the POS project. o Synchronization to/from VIPNet, o ACH communication with Wachovia, and o (Pre-Existing) Accounting data exchange between eLARS and CFIRS (DGIF's financial system). The ACH interface is a separate project and is not considered part of the POS project. The product of the ACH project will be leveraged by POS, and other projects in the future, to perform ACH transactions with Agents when it goes live. There are currently issues with testing the ACH interface. The interface with VIPNet is well understood but the detailed design documents are lacking key pieces of information (e.g. Frequency, Communication Protocol, etc.) that may be needed in future to provide support.	The ACH project effort should be incorporated into the POS project plan to ensure that dependencies are well understood. Given the dependency on the ACH interface, the project manager should escalate the current issues to ensure that Wachovia provides additional attention to resolve the issues. The project manager should direct the developer responsible for the VIPNet synchronization and Wachovia ACH interface to update the documentation to include all characteristics of the interface (including performance criteria).

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	IR-2	Verify those approved interface documents are available and that appropriate relationships (such as interface working groups) are in place with all agencies and organizations supporting the interfaces.	In order to ensure that interfaces are developed that are compatible, the project team has been in regular communication with VIPNet and Wachovia. VIPNet and DGIF IT will be responsible for maintaining and supporting the synchronization interface. Similarly, Wachovia IT and DGIF IT will be responsible for support the ACH interface. Lastly, DGIF IT will support the internal interface between CFIRS and eLARS.	The project manager should assess whether more formal and frequent meetings need to be held between the various parties to ensure that the interfaces are operational in time and properly tested. Interfaces are typically a trouble area for most project teams.
	IR-3	Verify that all external and internal system and software interface requirements have been identified.	According to the information provided by the project team, there are only 3 interfaces related to the POS project and the existing eLARS application. o Synchronization to/from VIPNet, o ACH communication with Wachovia, and o (Pre-Existing) Accounting data exchange between eLARS and CFIRS (DGIF's financial system). All interfaces have been documented and will undergo rigorous testing prior to the "go live" date.	The project manager should assess whether adequate time has been left in the schedule to adequately test the associated interfaces.

Review Area	Task Item	Task Description	Findings	Recommendations
	IR-4	Verify that each interface is described and includes data format and performance criteria (e.g., timing, bandwidth, accuracy, safety, and security).	The interfaces are well understood, but the detailed design documents are lacking key pieces of information (e.g. Frequency, Communication Protocol, etc.) and performance criteria which could lead to differing expectations.	The project manager should direct the developer responsible for the VIPNet synchronization and Wachovia ACH interface to update the documentation to include all characteristics of the interface (including performance criteria).
Requirements Allocation and Specification	RAS-1	Verify that all system requirements have been allocated to either a software or hardware subsystem.	N/A – The POS project is essentially an enhancement project so all system requirements will be met by existing hardware and software.	N/A
	RAS-2	Verify that requirements specifications have been developed for all hardware and software subsystems in a sufficient level of detail to ensure successful implementation.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	RAS-3	Verify that performance requirements (e.g., timing, response time, and throughput) allocated to hardware, software, and user interfaces satisfy user needs.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	RAS-4	Verify that the internal and external interfaces specify the data formats, interface protocols, frequency of data exchange at each interface, and other key performance requirements to demonstrate compliance with user requirements.	The interfaces are well understood, but the detailed design documents are lacking key pieces of information (e.g. Frequency, Communication Protocol, etc.) and performance criteria which could lead to differing expectations.	The project manager should direct the developer responsible for the VIPNet synchronization and Wachovia ACH interface to update the documentation to include all characteristics of the interface (including performance criteria).
	RAS-5	Verify that application specific requirements, such as functional diversity, fault detection, fault isolation, and diagnostic and error recovery satisfy user needs.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	RAS-6	Verify that the user's maintenance requirements for the system are completely specified.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	RAS-7	Validate that there are objective acceptance testing criteria for validating the requirements of the requirements specification documents.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Reengineering	RE-1	If a legacy system or a transfer system is or will be used in development, verify that a well-defined plan and process for reengineering the system is in place and is being followed.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Development Hardware	DH-1	Evaluate new and existing development hardware configurations to determine if their performance is adequate to meet the needs of system development.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DH-2	Determine if hardware is maintainable, easily upgradeable, and compatible with the agency's existing development and processing environment. This evaluation should include, but is not limited to CPUs and other processors, memory, network connections and bandwidth, communication controllers, telecommunications systems (LAN/WAN), terminals, printers and storage devices.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DH-3	Current and projected vendor support of the hardware should also be evaluated, as well as the agency's hardware configuration management plans and procedures.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Development Software	DS-1	Evaluate new and existing development software to determine if its capabilities are adequate to meet system development requirements.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DS-2	Determine if the software is maintainable, easily upgradeable, and compatible with the agency's current hardware and software environment.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DS-3	Evaluate the development environment as a whole to see if it shows a degree of integration compatible with good development. This evaluation should include, but is not limited to, operating systems, network software, CASE tools, project management software, configuration management software, compilers, cross-compilers, linkers, loaders, debuggers, editors, and reporting software.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DS-4	Language and compiler selection should be evaluated with regard to portability and reusability (ANSI standard language, non-standard extensions, etc.)	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DS-5	Current and projected vendor support of the software should also be evaluated, as well as the agency's software acquisition plans and procedures.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
High-Level Design	HLD-1	Evaluate and make recommendations on existing high-level design products to verify the design is workable, efficient, and satisfies all system and system interface requirements.	The POS project team has not produced a high-level design document. The team used an iterative approach to go from the identified business requirements (or use cases) to the detailed design. The detailed design document was continually refined and constructed in greater granularity that it essentially morphed from being a system requirements document to a high-level design document to a detailed design document. At this point, it does not appear that this approach has hurt the project, however, without distinct project deliverables, it is difficult to know when one piece of work was concluded and another started. This makes it difficult to determine if the project is on schedule.	The project manager should submit the requirements documents (or use cases) and detailed design documents to the customer for signoff to ensure a project baseline is established. **DGIF IT should develop a standard template for each of its system development deliverables such that it becomes very clear where the project is in terms of system development lifecycle. DGIF IT may be able to leverage deliverables from other Commonwealth agencies who routinely undertake large and complex IT projects.**
	HLD-2	Evaluated the design products for adherence to the project design methodology and standards.	The team is following the defined DGIF coding standards and has created a documentation standard as part of the Configuration Management Plan to foster work product consistency.	The project manager should regularly evaluate compliance to the documentation standard and empower the lead developers to validate that all coding is meeting the defined DGIF coding standards as part of the formal, scheduled peer reviews.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	HLD-3	Evaluate the design and analysis process used to develop the design and make recommendations for improvements. Evaluate design standards, methodology and CASE tools used and make recommendations.	Initial design and analysis efforts leveraged a collaborative approach. Project team members, most of whom were knowledgeable on the existing eLARS application, were lead through a working session by the project manager in order to flesh out high-level designs. These high-level designs were then refined by individual team members in order to create the detailed designs for each requirement.	**A team based approached to developing work effort estimates is a best practice and should be replicated on all future projects. Given the complexity of the project, the project manager should add contingency hours into the efforts to give more flexibility as unknowns are encountered.**
	HLD-4	Verify that design elements can be traced back to system requirements.	It is possible to trace the detailed design document (which includes business requirements and references to the identified use cases) to the test plan. This linkage should ensure that the POS testing team conducts comprehensive testing of all new features and functionality.	The project manager and the testing team should remember to re-apply/incorporate the original eLARS test scripts to ensure that the new functionality did not break the existing system. **On future projects, all major project deliverables (i.e., requirements document, change management plan, test plan, etc.) should be submitted for formal approval to reduce the likelihood of scope creep, ease traceability, and provide a baseline.**
	HLD-5	That the relationship between the design elements and the requirements are specified to a constant level of detail.	The detail design document has been created with consistency (detail, content headings, etc.) as a result of one of the lead developers being the primary owner of the document and being responsible for all reviews of the document.	**On future projects, formal reviews of all project deliverables should be built into the project plan to ensure that standards are being met and the level of detail is consistent.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	HLD-6	Verify that all design products are under configuration control and formally approved before detailed design begins.	Although the Project Proposal and Project Charter have been officially approved, no other key project deliverables have been formally reviewed and signed off on (e.g., requirements document, detailed design, etc.). This has not been a large issue for this project because the business customer, License Accounting, has been actively involved in the project; however, without formal sign-off, it makes it difficult to manage/identify scope changes. All project documentation, except the Status Report which is in Sharepoint, is kept on DGIF IT's J:/ drive.	The project manager should submit the requirements documents (or use cases) and detailed design documents to the customer for signoff to ensure a project baseline is established. **On future projects, formal signoff by the business customer should be mandated on every key project deliverable (e.g., requirements, testing plan, training plan, change management plan, etc.)**.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Detailed Design	DD-1	Evaluate and make recommendations on existing detailed design products to verify that the design is workable, efficient, and satisfies all high-level design requirements.	The POS project team has used an iterative approach to go from the identified business requirements (or use cases) to the detailed design. The detailed design document has been continually refined over time and now contains sufficient detail to begin coding. The interface documents are missing a few key design components (frequency, type communication protocol), but these are well understood by the project team and just need to be added to the documentation. The project team's lead developers are responsible for reviewing all designs, and it should be noted that some informal peer reviews of the various designs has occurred.	The project manager should submit the requirements documents (or use cases) and detailed design documents to the customer for signoff to ensure a project baseline is established. At the conclusion of the project, the project manager should have the development team update all design documents with the current information, including the missing detail around the interface. **Future DGIF IT projects may benefit by adding formal reviews of all project deliverables into the project plan. This will aid in identifying issues early, ensuring deliverable consistency, and leading to a better work product.**
	DD-2	Evaluate the design products for adherence to the project design methodology and standards.	Kathy Graham, the Project Manager, is responsible for ensuring documentation is compliant with the team standard, and the lead developers are responsible for ensuring development is complying with DGIF development and coding standards.	The project manager should communicate to the team the importance of complying with the defined standards and assess compliance on a regular basis.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	DD-3	Evaluate and make recommendations on the design and analysis process used to develop the design.	Initial design and analysis efforts leveraged a collaborative approach. Project team members, most of whom were knowledgeable on the existing eLARS application, were lead through a working session by the project manager in order to flesh out high-level designs. These high-level designs were then refined by individual team members in order to create the detailed designs for each requirement. The project team's lead developers are responsible for reviewing all designs; and it should be noted that some informal peer reviews of the various designs has occurred.	**A team based approached to developing work effort estimates is a best practice and should be replicated on all future projects. Given the complexity of the project, the project manager should add contingency hours into the efforts to give more flexibility as unknowns are encountered.** **Future DGIF IT projects may benefit by adding formal reviews of all project deliverables into the project plan. This will aid in identifying issues early, ensuring deliverable consistency, and leading to a better work product.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	DD-4	Evaluate and make recommendations on the design standards, methodology and CASE tools used.	The project team is following a traditional system development methodology: plan, define, build, test, and deploy. The project manager, Kathy Graham, developed a detailed design standard that all developers had to follow. This document is fairly comprehensive and has been adhered to by the team.	**DGIF IT should develop a standard template for each of its system development deliverables such that it becomes very clear where the project is in terms of system development lifecycle. DGIF IT may be able to leverage deliverables from other Commonwealth agencies who routinely undertake large and complex IT projects.**
	DD-5	Verify that design elements can be traced back to system requirements and high-level design elements.	It is possible to trace the detailed design document (which includes business requirements and references to the identified use cases) to the test plan. This linkage should ensure that the POS testing team conducts comprehensive testing of all new features and functionality.	The project manager and the testing team should remember to re-apply/incorporate the original eLARS test scripts to ensure that the new functionality did not break the existing system. **On future projects, all major project deliverables (i.e., requirements document, change management plan, test plan, etc.) should be submitted for formal approval to reduce the likelihood of scope creep, ease traceability, and provide a baseline.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	DD-6	That the relationship between the design elements and the high-level design elements are specified to a constant level of detail.	The lead developers on the POS project team are responsible for reviewing all designs for completeness and consistency.	**Future DGIF IT projects may benefit by adding formal reviews of all project deliverables into the project plan. This will aid in identifying issues early, ensuring deliverable consistency, and leading to a better work product.**
	DD-7	Verify that all design products are under configuration control and formally approved before coding begins.	Although the Project Proposal and Project Charter have been officially approved, no other key project deliverables have been formally reviewed and signed off on (e.g., requirements document, detailed design, etc.). This has not been a large issue for this project since the business customer, License Accounting, has been actively involved in the project; however, without formal sign-off, it makes it difficult to manage/identify scope changes. All project documentation, except the Status Report which is in Sharepoint, is kept on DGIF IT's J:/ drive.	The project manager should submit the requirements documents (or use cases) and detailed design documents to the customer for signoff to ensure a project baseline is established. **On future projects, formal signoff by the business customer should be mandated on every key project deliverable (e.g., requirements, testing plan, training plan, change management plan, etc.).**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Coding	C-1	Evaluate and make recommendations on the standards and processes currently in place for code development.	Coding started approximately two weeks ago (mid-May) and all developers are supposed to be following the defined coding standards. Conducting peer reviews of other team member's code is not standard practice within DGIF IT – reviews are generally completed if there is an issue or if a developer seeks assistance. Peer reviews are a best practice to ensure standards are being followed and potential code flaws are caught early.	The project manager should schedule a formal peer review of all developed code in mid-June to validate that standards are being followed and coding logic and design appears to be solid.
	C-2	Evaluate the existing code base for portability and maintainability, taking software metrics including but not limited to modularity, complexity and source and object size.	The POS project is introducing enhancements to an existing application, eLARS. eLARS is built on all standard hardware and software components which makes it easier to maintain and support. All code is maintained and managed in Microsoft SourceSafe.	The project team should continue to leverage SourceSafe to manage and maintain the POS code.
	C-3	Evaluate code documentation for quality, completeness (including maintenance history) and accessibility.	Coding has just started and there is a defined coding standard - which defines documentation guidelines for all code - that is supposed to be followed by all developers. Good code documentation helps the application support team in trouble shooting application bugs or issues.	The project manager should schedule a formal peer review of all developed code in mid-June to validate that standards are being followed and coding logic and design appears to be solid.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	C-4	Evaluate the coding standards and guidelines and the projects compliance with these standards and guidelines. This evaluation should include, but not be limited to, structure, documentation, modularity, naming conventions and format.	DGIF IT has a defined Developers Handbook and the POS project team has a defined coding standard related to the eLARS application. Developers on the POS project are supposed to be complying to these standards in order to promote application consistency.	The project manager should schedule a formal peer review of all developed code in mid-June to validate that standards are being followed and coding logic and design appears to be solid.
	C-5	Verify that developed code is kept under appropriate configuration control and is easily accessible by developers.	All code is maintained and managed in Microsoft SourceSafe.	The project team should continue to leverage SourceSafe to manage and maintain the POS code.
	C-6	Evaluate the project's use of software metrics in management and quality assurance.	Defects are tracked and resolved but not actively reported which may hinder executive and business customer visibility into the project's progress.	The project manager should plan to incorporate testing statistics in the project overall status report over the final few weeks of the project.
	C-7	Verify and validate that code components satisfy the detailed design.	N/A – Coding has just started and lead developers will ultimately be responsible for ensuring that all requirements in scope are met.	N/A
	C-8	Validate that the logic, computational, and interface precision (e.g., truncation and rounding) satisfy the requirements in the system environment.	N/A – Coding has just started and unit testing/system testing should validate the code's logic and computational aspects.	N/A
Unit Testing	UT-1	Evaluate the plans, requirements, environment, tools, and procedures used for unit testing system modules.	Coding started two weeks ago so unit testing has not been a primary focus. Each developer is/will be responsible for developing and executing their own unit testing.	The project manager should consider developing a standard unit test plan and unit test reporting tool for project developers to use. Having a common and standard plan and tool will make it possible to measure and track the thoroughness and consistency of each developer's unit testing effort. It should be note that future DGIF IT project efforts could likely leverage and re-use the developed standard unit test plan and report tool.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	UT-2	Evaluate the level of test automation, interactive testing and interactive debugging available in the test environment.	N/A – No test automation will be used during unit testing. This seems appropriate given the size and scope of this project.	N/A
	UT-3	Verify that an appropriate level of test coverage is achieved through the testing process, that test results are verified, that the correct code configuration has been tested, and that the tests are appropriately documented, including formal logging of errors found in testing.	Developers are/will be responsible for performing their own unit testing. Microsoft SourceSafe, which can be accessed by each developer, is being used to manage and control the developed code to reduce the risk of introducing the wrong/old code.	The project manager should consider developing a standard unit test plan and unit test reporting tool for project developers to use. Having a common and standard plan and tool will make it possible to measure and track the thoroughness and consistency of each developer's unit testing effort. It should be note that future DGIF IT project efforts could likely leverage and re-use the developed standard unit test plan and report tool.
	UT-4	Validate that the unit test plan satisfies the following criteria: Traceable to the software requirements and design; External consistency with the software requirements and design; Internal consistency between unit requirements; Test coverage of requirements in each component; Feasibility of software integration and testing; and Feasibility of operation and maintenance (e.g., capability to be operated and maintained in accordance with user needs).	Developers are/will be responsible for performing their own unit testing. Unit testing will be based on the content of the detailed design document.	The project manager should consider developing a standard unit test plan and unit test reporting tool for project developers to use. Having a common and standard plan and tool will make it possible to measure and track the thoroughness and consistency of each developer's unit testing effort. It should be noted that future DGIF IT project efforts could likely leverage and re-use the developed standard unit test plan and report tool.
Integration Testing	IT-1	Evaluate the plans, requirements, environment, tools, and procedures used for integration testing of system modules.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	IT-2	Evaluate the level of automation and the availability of the integration test environment.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	IT-3	Verify that an appropriate level of test coverage is achieved through the test process, that test results are verified, that the correct code configuration has been tested, and that the tests are appropriately documented, including formal logging of errors found in testing.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	IT-4	Validate that the integration test plan satisfies the following criteria: Traceable to the software requirements and design; External consistency with the software requirements and design; Internal consistency between unit requirements; Test coverage of requirements in each component; Feasibility of software integration and testing; and Feasibility of operation and maintenance (e.g., capability to be operated and maintained in accordance with user needs).	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	IT-5	Verify that the test organization has an appropriate level of independence from the development organization.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
System Testing	ST-1	Evaluate the plans, requirements, environment, tools, and procedures for system testing of the system.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	ST-2	Evaluate the level of automation and the availability of the system test environment.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	ST-3	Verify that a sufficient number and type of case scenarios are used to ensure comprehensive but manageable testing and that tests are run in a realistic, real-time environment.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	ST-4	Verify that test scripts are complete, with step-by-step procedures, required pre-existing events or triggers, and expected results.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	ST-5	Verify that test results are verified, that the correct code configuration has been used, and that the tests runs are appropriately documented, including formal logging of errors found in testing.	System testing has not yet started; however, an overall test plan does exist which includes when system testing will be performed. The test plan also allows for traceability back to the detailed design document (which incorporates requirements and use cases) and facilitates the resolution of defects.	The project manager should plan to incorporate testing statistics in the project overall status report over the final few weeks of the project.
	ST-6	Validate that the system test plan satisfies the following criteria: Traceable to the software requirements and design; External consistency with the software requirements and design; Internal consistency between unit requirements; Test coverage of requirements in each component; Feasibility of software integration and testing; and Feasibility of operation and maintenance (e.g., capability to be operated and maintained in accordance with user needs).	It is possible to trace the detailed design document (which includes business requirements and references to the identified use cases) to the test plan. This linkage should ensure that the POS testing team conducts comprehensive testing of all new features and functionality.	The project manager and the testing team should remember to re-apply/incorporate the original eLARS test scripts to ensure that the new functionality did not break the existing system. **On future projects, all major project deliverables (i.e., requirements document, change management plan, test plan, etc.) should be submitted for formal approval to reduce the likelihood of scope creep, ease traceability, and provide a baseline.**
	ST-7	Verify that the test organization has an appropriate level of independence from the development organization.	The POS project team has a dedicated resource assigned to testing. The testing resource works with the developers but is independent from the development team which reduces any bias. The testing resource is responsible for creating the test plan, developing test scripts, performing testing, and reporting on testing results.	**DGIF should continue the practice of using dedicated testing resources to ensure IT projects undergo unbiased and rigorous testing.**

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Interface Testing	IT-1	Evaluate the plans, requirements, environment, tools, and procedures for interface testing of the system.	Testing of the VIPNet synchronization interface has not started yet because the development team has only recently begun coding. The developer team and the testing resource will be responsible for testing the interface. Development of the ACH interface is a separate project but it impacts the POS project. Testing of the ACH interface is underway and there have been some issues encountered.	The ACH project effort should be incorporated into the POS project plan to ensure that dependencies are well understood. Given the dependency on the ACH interface, the project manager should escalate the current issues to ensure that Wachovia provides additional attention to resolve the issues.
	IT-2	Evaluate the level of automation and the availability of the system test environment.	N/A – No test automation will be used during interface testing.	N/A

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	IT-3	Verify that a sufficient number and type of case scenarios are used to ensure comprehensive but manageable testing and that tests are run in a realistic, real-time environment.	All interface testing will be completed in a test environment and following the defined DGIF IT interface testing standard approach. The Test Plan is very comprehensive and has identified several test cases in which to stress the developed interface. Test cases are developed to match each use case scenario to ensure adequate testing is completed. Additionally, all testing includes both a Pass and Fail scenario to optimize the benefits of testing.	The project manager should plan to incorporate testing statistics in the project overall status report over the final few weeks of the project.
	IT-4	Verify that test scripts are complete, with step-by-step procedures, required pre-existing events or triggers, and expected results.	A Test Plan has been completed, but actual test scripts have not yet been developed. Test scripts are starting to be developed now. Example test scenarios are not very detailed, but they do appear to cover all of the normal test script basics.	The project manager should plan to incorporate testing statistics in the project overall status report over the final few weeks of the project. The project manager and the testing team should remember to re-apply/incorporate the original eLARS test scripts to ensure that the new functionality did not break the existing system.
	IT-5	Verify that test results are verified, that the correct code configuration has been used, and that the tests runs are appropriately documented, including formal logging of errors found in testing.	The developed Test Plan is fairly detailed and incorporates information on setting up the testing environment such that minimal avoidable is introduced into the testing process.	The project manager should plan to incorporate testing statistics in the project overall status report over the final few weeks of the project.

Review Area	Task Item	Task Description	Findings	Recommendations
	IT-6	Validate that the interface test plan satisfies the following criteria: Traceable to the software requirements and design; External consistency with the software requirements and design; Internal consistency between unit requirements; Test coverage of requirements in each component; Feasibility of software integration and testing; and Feasibility of operation and maintenance (e.g., capability to be operated and maintained in accordance with user needs).	It is possible to trace the detailed design document (which includes business requirements and references to the identified use cases) to the test plan. This linkage should ensure that the POS testing team conducts comprehensive testing of all new features and functionality.	The project manager and the testing team should remember to re-apply/incorporate the original eLARS test scripts to ensure that the new functionality did not break the existing system.
	IT-7	Verify that the test organization has an appropriate level of independence from the development organization.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Acceptance Testing	AT-1	Evaluate the plans, requirements, environment, tools, and procedures for acceptance testing of the system.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	AT-2	Verify that acceptance procedures and acceptance criteria for each product are defined, reviewed, and approved prior to tests and that test results are documented. Acceptance procedures must also address the process by which any software product that does not pass acceptance testing will be corrected.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	AT-3	Verify that a sufficient number and type of case scenarios are used to ensure comprehensive but manageable testing and that tests are run in a realistic, real-time environment.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	AT-4	Verify that test scripts are complete, with step-by-step procedures, required pre-existing events or triggers, and expected results.	N/A – Testing has only just started. No acceptance test scripts have been completed at this point.	N/A
	AT-5	Verify that test results are verified, that the correct code configuration has been used, and that the tests runs are appropriately documented, including formal logging of errors found in testing.	N/A – Acceptance testing has not started yet.	N/A
	AT-6	Validate that the acceptance test plan satisfies the following criteria: Traceable to the software requirements and design; External consistency with the software requirements and design; Internal consistency between unit requirements; Test coverage of requirements in each component; Feasibility of software integration and testing; and Feasibility of operation and maintenance (e.g., capability to be operated and maintained in accordance with user needs).	It is possible to trace the detailed design document (which includes business requirements and references to the identified use cases) to the test plan. This linkage should ensure that the POS testing team conducts comprehensive testing of all new features and functionality.	The project manager and the testing team should remember to re-apply/incorporate the original eLARS test scripts to ensure that the new functionality did not break the existing system. **On future projects, all major project deliverables (i.e., requirements document, change management plan, test plan, etc.) should be submitted for formal approval to reduce the likelihood of scope creep, ease traceability, and provide a baseline.**
	AT-7	Verify that the acceptance test organization has an appropriate level of independence from the subcontractor.	License Accounting, the business users of the system and separate DGIF group, will be responsible for performing acceptance testing. This approach to acceptance testing should provide unbiased and independent validation that the system is ready for production.	The POS project manager should communicate to the business customer, prior to coding being completed, the necessary activities and associated responsibilities to complete acceptance testing. This will set expectations and facilitate planning.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	AT-8	Validate that appropriate acceptance testing based on the defined acceptance criteria is performed satisfactorily before acceptance of software products.	No acceptance criteria has been documented yet which could lead to confusion or disagreement between IT and the business customer when the time comes to make a "go/no go" decision to place the POS project into production.	Prior to starting acceptance testing, define and communicate the acceptance criteria to the business customer to avoid potential confusion.
	AT-9	Verify that the process by which any software product that does not pass acceptance testing should be corrected has been defined and documented.	The Test Plan includes a description of how unaccepted software product is handled. This should reduce any potential confusion between the business customer and the project team.	The project manager should submit the testing plan to the Business Owner to build awareness and visibility into the teams testing process.

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Implementation	**I-1**	Review and evaluate implementation planning.	An informal process has been developed that highlights the key activities (registration and training) that must be carried out once the POS project is completed. Agents will have until July 2006 before they "must" begin using the new Internet application. The deployment of the new Agent POS is more of a "pull" than a "push." DGIF plans to be proactive in supporting adoption of the new Agent system, however, there have been no implementation metrics defined which will make it difficult to track progress.	The project manager should develop a formal deployment plan (work plan) immediately that details all of the preparation, execution, closeout activities and deliverables that need to be carried out between now and July 2006. The formal deployment plan should be submitted to the Oversight Committee and Sponsor for approval to ensure buy-in, support, and awareness. Components of the plan will change over the course of a year, however, without a formal document, it is impossible to determine if adequate planning has occurred. Deployment metrics (e.g., adoption percentage, etc.) should be defined, measured, and reported as part of the implementation execution to enable progress to be tracked and action items to be developed as needed. Change management will be an issue with some Agents, so the project manager should ensure some sort of tracking mechanism is in place at VIPNet, DGIF IT, and License Accounting. This tracking mechanism should capture and categorize issues such that as the deployment continues, re-occurring items can be addressed more fully for the remainder of the implementation.

Review Area	Task Item	Task Description	Findings	Recommendations
Data Conversion	DC-1	Evaluate the agency's existing and proposed plans, procedures and software for data conversion.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DC-2	Verify that procedures are in place and are being followed to review the converted data for completeness and accuracy and to perform data cleanup as required.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DC-3	Determine conversion error rates and if the error rates are manageable.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DC-4	Make recommendations on making the conversion process more efficient and on maintaining the integrity of data during the conversion.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Database Design	DBD-1	Evaluate new and existing database designs to determine if they meet existing and proposed system requirements.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DBD-2	Recommend improvements to existing designs to improve data integrity and system performance.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DBD-3	Evaluate the design for maintainability, scalability, concurrence, normalization (where appropriate) and any other factors affecting performance and data integrity.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DBD-4	Evaluate the project's process for administering the database, including backup, recovery, performance analysis and control of data item creation.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
System Hardware	SH-1	Evaluate new and existing system hardware configurations to determine if their performance is adequate to meet existing and proposed system requirements.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	SH-2	Determine if hardware is compatible with the agency's existing processing environment, if it is maintainable, and if it is easily upgradeable. This evaluation should include, but is not limited to CPUs and other processors, memory, network connections and bandwidth, communication controllers, telecommunications systems (LAN/WAN), terminals, printers and storage devices.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	SH-3	Evaluate current and projected vendor support of the hardware, as well as the agency's hardware configuration management plans and procedures.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
System Software	SS-1	Evaluate new and existing system software to determine if its capabilities are adequate to meet existing and proposed system requirements.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	SS-2	Determine if the software is compatible with the agency's existing hardware and software environment, if it is maintainable, and if it is easily upgradeable. This evaluation should include, but is not limited to, operating systems, middleware, and network software including communications, file-sharing protocols, etc.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	SS-3	Current and projected vendor support of the software should also be evaluated, as well as the agency's software acquisition plans and procedures.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

Review Area	Task Item	Task Description	Findings	Recommendations
Database Software	DBS-1	Evaluate new and existing database products to determine if their capabilities are adequate to meet existing and proposed system requirements.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DBS-2	Determine if the database's data format is easily convertible to other formats, if it supports the addition of new data items, if it is scaleable, if it is easily refreshable and if it is compatible with the agency's existing hardware and software.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	DBS-3	Evaluate any current and projected vendor support of the software, as well as the agency's software acquisition plans and procedures.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Hardware and Software Environment Capacity	HSEC-1	Evaluate the existing processing capacity of the planned hardware and software environment and verify that it is adequate for to projected system.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	HSEC-2	Evaluate the historic availability and reliability of the current hardware and software environment, including the frequency and criticality of failures.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	HSEC-3	Evaluate the results of any volume testing or stress testing.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
	HSEC-4	Evaluate any existing measurement and capacity planning program and evaluate the hardware and software environment's capacity to support future growth.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
	HSEC-5	Make recommendations on changes in processing hardware, storage, network systems, operating systems, COTS software, and software design to meet future growth and improve system performance.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Change Tracking	CT-1	Evaluate the system change request and defect tracking processes.	DGIF utilizes the RFCS system to track all enhancement requests and defects once an application goes into production. RFCS is a homegrown system that is used to provide application support for all DGIF systems. Items within RFCS can be prioritized, assigned, and tracked. The current system appears more than adequate to support the POS project and the existing eLARS application. DGIF IT generally releases updates to existing applications on a quarterly basis. High priority or urgent changes are evaluated and released as needed.	As a reminder, the project manager should communicate to all appropriate stakeholders the defined process for logging change/enhancement requests and defects.
	CT-2	Evaluate the implementation of the product change request and defect tracking process activities and request volumes to determine if processes are effective and are being followed.	DGIF Application Support does not actively track and report metrics. The RFCS tool allows submitted items to be tracked, but generally the volume of high severity defects or enhancements is manageable.	**DGIF IT should consider tracking and reporting support metrics to build credibility within the organization and provide a baseline for Support targets to be defined and measured.**
User Satisfaction	US-1	Evaluate user satisfaction with the product to determine areas for improvement.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW
Goals and Objectives	GO-1	Evaluate impact of the product on operational goals and performance objectives.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

REVIEW AREA	TASK ITEM	TASK DESCRIPTION	FINDINGS	RECOMMENDATIONS
Documentation	**DOC-1**	Evaluate operational documentation.	VITA is responsible for all Hardware support and maintenance and follows defined operational documentation.	The project manager should evaluate the support being provided by VITA to ensure it meets DGIF's needs and escalate concerns as needed.
Operational Processes	**OP-1**	Evaluate the implementation of operational processes including backup, disaster recovery and day-to-day operations to verify the processes are being followed.	N/A - Not Reviewed per SOW	N/A - Not Reviewed per SOW

Appendix D: IT Project Best Practices

The *POS* Project *Planning/In-Progress* IV&V Review observed these Best Practices during review of the project. The best practices matrix is shown below.

Title	Best Practice	Observation	Project Phase	Comment
Automated License Delivery System (or POS)	**Collaboration and interaction between business customers and project team in planning, developing, and executing the POS project.**	The amount of interaction and collaboration between the POS IT project team members and the POS business customer project team members has been a model environment in terms of planning and executing an IT project. The primary business owner has dedicated time and resources to the POS project from the beginning and has strived to be actively engaged in the project work. The business owner is available on a weekly basis to discuss project status, review issues, make business rule decisions, and exchange information.	Planning & Execution	The business owner, John Moore, has been meeting regularly with the project team. The team also has engaged the customer/agent liaison, Francis Boswell, throughout the project.
	Knowledge of Existing Application.	The project team is composed of resources who were already very familiar with the existing automated licensing application that was being modified with the POS project.	Planning & Execution	Leveraging resources that were already familiar with the code, the application, and existing business use enabled the project team to ramp up quickly and more accurately gauge the size, scope and complexity of the POS project.

	Executive support for the POS project.	The program manager, Virgil Kopf, has served as the project's champion and ensured the project's success.	Planning & Execution	The program manager has provided unwavering executive level support throughout the life of the POS project and has been a vocal champion within the agency. The program manager has been instrumental at resolving issues, removing barriers, and providing guidance to the POS project team.

Appendix E: IT Project Lessons Learned

The *POS* Project *Planning/In-Progress* IV&V Review provided "Lessons Learned" found during contact with project personnel. The lessons learned matrix is shown below.

Title	Lesson Learned Statement	Observation	Project Phase	Impact on Cost	Impact on Schedule	Impact on Quality	Recommended Action
Automated License Delivery System (or POS)	Introduction of more structure and formality to managing a project can aid in communicating status and setting expectations.	More formality in project management would have facilitated the communication of project health and status and helped to identify potential project risks.	All Phases	Low-Medium	Low-Medium	Low-Medium	Balance the structure and rigor of project management with the complexity of the project but recognize that there are certain project management tasks that must be completed regardless of the size of the project (e.g., obtaining sign-off for project deliverables, communicating project status, and reporting actual expenses versus budget).
	Lack of Project Status Report Dashboard affects a project's visibility.	The goal of the Status Report Dashboard is to give VITA, the Commonwealth's CIO, and Secretary of Natural Resources easy access to the latest status of a major IT project.	All Phases	Low	Low-Medium	Low- Medium	VITA should attach to the CIO approval letter a project set-up checklist with specific information on how to obtain the status report dashboard. DGIF IT should recognize the importance of the dashboard.
	Change management cannot be underestimated or	Understanding the impact on the end-	Planning & Deployment	Low	Low	Medium-High (during deployment)	Create a formal change management plan for future projects that includes a gap

	over planned.	users and developing a coordinated approach to addressing identified gaps and issues can increase the likelihood and timeliness of user acceptance and adoption.					analysis of the current situation and what needs to be done to lessen the resistance to change and increase acceptance (e.g., training, communication, etc.).

Appendix F: IT Project Complexity Model

The *POS* Project *Planning/In-Progress* IV&V Review updated/re-accomplished the *IT Project Complexity model* for the POS Project. The updated/re-accomplished model is shown below. The *IT Project Complexity Model* provides a scoring mechanism to determine the complexity of an IT project undertaken in the Commonwealth of Virginia. The complexity of the POS Project is used in determining the level of documentation and oversight required for the project.

<u>Summary:</u>
The IV&V Review Team has independently re-assessed the POS project vis-à-vis the IT Project Complexity model. The total score generated by the IV&V Review Team for the project was 111 which place the POS project in the Low complexity range. A Low complexity rating is consistent with the self-scoring completed by the POS project manager, Kathy Graham, and seems appropriate given the scope and size of this project (i.e., enhancement project, $250,000 budget, etc.).

No.	Project Complexity Calculator - Scoring Matrix Question	Response 1	Score	Response 2	Score	Response 3	Score	Response 4	Score
1	What is the total project cost?	Less than $100,000		Between $100,000 and $500,000	20	Between $500,000 and $1,000,000		Greater than $1 Million	
2	What is the estimated total cost for hardware?	Less than $100,000	2	Between $100,000 and $500,000		Between $500,000 and $1,000,000		Greater than $1 Million	
3	What is the estimated total cost for software?	Less than $100,000	2	Between $100,000 and $500,000		Between $500,000 and $1,000,000		Greater than $1 Million	
4	What is the estimated cost of application development or software configuration services?	Less than $100,000		Between $100,000 and $500,000	4	Between $500,000 and $1,000,000		Greater than $1 Million	

No.	Project Complexity Calculator - Scoring Matrix Question	Response 1	Score	Response 2	Score	Response 3	Score	Response 4	Score
5	How much confidence is there in the expenditure and funding projections?	Accuracy of budget estimate is greater than 95% and less than or equal to 100%.		Accuracy of budget estimate is greater than 85% and less than or equal to 95%.	4	Accuracy of budget estimate is greater than 50% and less than or equal to 85%		Accuracy of budget estimate is less than or equal to 50%.	
6	What percentage of the agency budget does the project represent?	Project is less than 2% of the agency budget	2	Project is greater than or equal to 2% but less than 5% of the agency budget		Project is greater than or equal to 5% and less than 15% of the agency budget		Project is 15% or more of the agency budget	
7	Is the project sponsor providing full resources for the project?	Sponsor owns all the resources needed	2	Sponsor owns most of the resources needed		Sponsor has control of most of the resources needed		Sponsor has control of some of the resources needed	
8	What is the size of the Project Team (Full Time Equivalents)?	No full time FTEs assigned		1 to 2 people		2 to 5 people	6	5 or more people	
9	What is the Project Manager's Authority over the project?	High to Almost Total	2	Moderate		Limited to Low		Little to None	
10	To what degree are the project team members collocated?	90-100% of the team in the same location	1	50%-90 of team in same location		25% - 50% of team in same location		25% or less of team in same location	
11	What is the project's duration?	Duration is less than 6 months	2	Duration is 6 to 12 months		Duration is 12 to 24 months		Duration is greater than 24 months	
12	How much variation in the timeframe can be tolerated?	Schedule is not fixed and therefore highly flexible		Schedule can tolerate major variations		Schedule can tolerate minor variations	9	Schedule is fixed and can not be changed	

No.	Project Complexity Calculator - Scoring Matrix Question	Response 1	Score	Response 2	Score	Response 3	Score	Response 4	Score
13	Are there any dependencies and/or inter-related projects?	There are no major dependencies or inter-related projects		There are some dependencies and/or inter-related projects, but considered low risk	6	There are some major dependencies and/or inter-related projects, that create a moderate level of risk		There are significant dependencies and/or inter-related projects that place the project at a high level risk	
14	Has the agency and/or vendor executed similar projects?	Agency and vendor have executed many similar projects successfully	2	Agency or vendor have executed several similar projects		Agency or vendor have executed a similar project		Neither the agency nor the vendor has executed a similar project	
15	Does the project address State and Federal mandates?	The project has little or no direct impact on accomplishment of State and Federal mandates		The project enhances accomplishment of State and Federal mandates	4	The project is important to the accomplishment of State and Federal mandates		The project is critical to accomplishment of State and Federal mandates	
16	How will the failure of the project impact the customers?	There is no impact of project failure on the customers		Impact of project failure on customers is minimal		Impact of project failure on customers is moderate	8	Impact of project failure on customers is high	

No.	Project Complexity Calculator - Scoring Matrix Question	Response 1	Score	Response 2	Score	Response 3	Score	Response 4	Score
17	What is the anticipated involvement of the End Users with System Design and Testing?	Not applicable		Highly involved with development team, provide significant input and have significant ownership of system	4	Play minor roles with development team or have moderate impact on system development		Minimal or no user involvement with development team or little user input into process	
18	What is the anticipated involvement of the End Users in the Definition of Project Requirements and Scope?	Requirements well-established, baseline defined, user acceptance high with no changes		Requirements well-established, baseline defined, user acceptance high, and few changes	4	Requirements defined but changes to base line expected; requirements may not have been distributed to all employees		Rapidly changing size or scope; requirements not defined and not signed off by users	
19	How important is the project to successful execution of agency core business activities?	The project is/has little or no direct impact on current core business activities		The project enhances organization core business activities	4	The project is important to the organization core business activities		The project is critical to the organization core business activities	
20	How significant will the business process or activities be impacted?	No business process is impacted		No critical processes are impacted		Critical business processes are impacted	6	A large portion of the business processes are impacted	

No.	Project Complexity Calculator - Scoring Matrix Question	Response 1	Score	Response 2	Score	Response 3	Score	Response 4	Score
21	What is the level of change to the business unit?	Impacts a single business unit	2	Impacts a number of business units		Impacts a whole Agency		Impact more than one Agency	
22	Is the project using proven technology?	The technology is proven and has been available for a number of years	2	The technology has been available for several years		The technology has been developed but is very new		The technology is in development	
23	Is the proposed solution applied in a New, Proven, or Tried way?	Application of the technology is tried and proven	3	An application of the technology has been tried and is partially proven		A new application of the technology that has been tried but is not proven		A new application of the technology which has never been tried before	
24	Does this project require data conversion?	No data conversion is required	0	Data conversion from other sources has little impact		Data conversion from other sources has some impact		Data conversion from other sources has a significant impact	
25	What is the overall risk evaluation of the project (see Project Proposal)?	No risk		Low risk	10	Medium risk		High risk	
			55	**111**	**125**		**211**		**338**
				Low Complexity		**Medium Complexity**		**High Complexity**	
				55-124 range		**125-210 range**		**211- 338 range**	