CRM SCM STRATEGY PROCESS TECHNOLOGY MANAGEMENT

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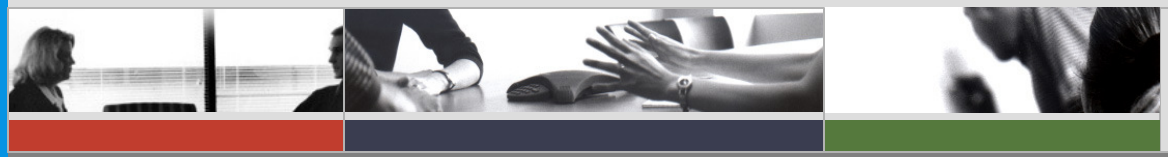

SCORE Feasibility Assessment

February 25th, 2008

Note: The observations and recommendations contained in this report are based upon deliverables, work products and interview notes provided to or generated by the assessment team for the period under evaluation. Non-disclosure of any relevant project information by the project team, vendor, or Colorado State Government personnel for consideration may result in incorrect observations and recommendations.

This assessment and recommendations do not guarantee to give the project team or The Colorado Secretary of State (SOS) a successful election. These recommendations are presented as the best path forward from the perspective of the review team based on a very short, high level assessment. These recommendations are not attempting to interfere by any means with the deployment of the product, the Saber contract, or any other entity. North Highland has formulated options and assessed the benefits and risks. The decision on how to proceed lies with the State. Our findings suggest Option 2 has the best risk/return profile.

Table of Contents

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Project Overview

This Assessment Focused on the Following

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- What are the feasible options for the '08 elections that meet HAVA compliance?
- What is the most feasible deployment of the SCORE system to meet HAVA compliance?
- What is the best strategy for deploying election management system functionality?
- What are the technical and operational risks for the options?
- How would this deployment strategy be organized?
- How much will this deployment strategy cost?
- What are the key contingency strategies and when should these strategies be implemented?

Our Approach

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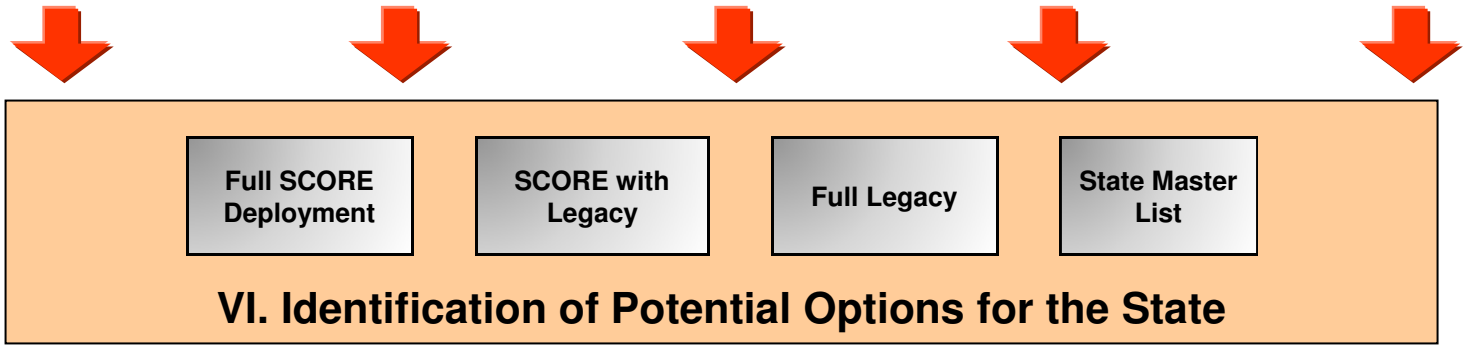
Under a two week timeframe, we addressed the following areas of the SCORE system with a focus on deployment of a HAVA compliant solution.

Area	County Adoption	SCORE Transactional Capability	Technical Issues	Functionality	Contingency
Our Approach	• Survey and interview counties • Understand the current issues from the county perspective • Understand county capabilities and associated systems • Identify county functional issues and other concerns.	• Understand the architecture • Compare this architecture to other existing state systems. • Identify fundamental architectural issues • Identify when load testing will be completed to validate poll-book printing, other concurrent functions.	• Identify any critical technical issues • Understand how the CITRIX architecture is being mitigated • Understand the network and connectivity issues • Identify functional defects and other issues.	• Understand the current functional state of the system and release schedule • Identify CCB/Scope control • Understand precinct reporting, vote center, early voting, and other functionality.	• Identify potential contingency options for the deployment • Identify the next steps for evaluating and executing these contingency plans



Assessment Team

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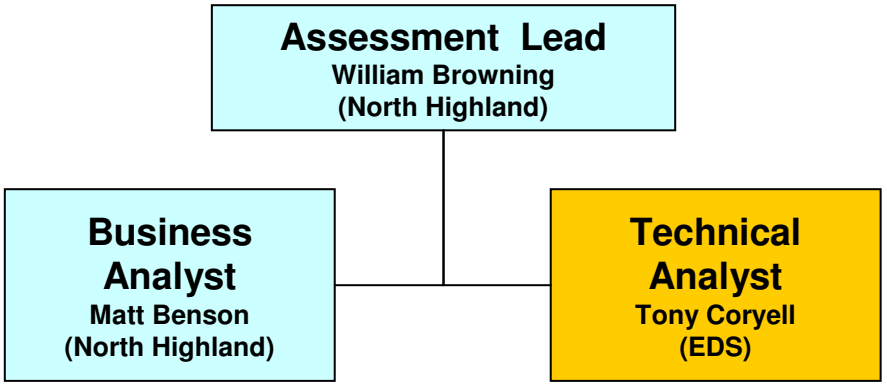
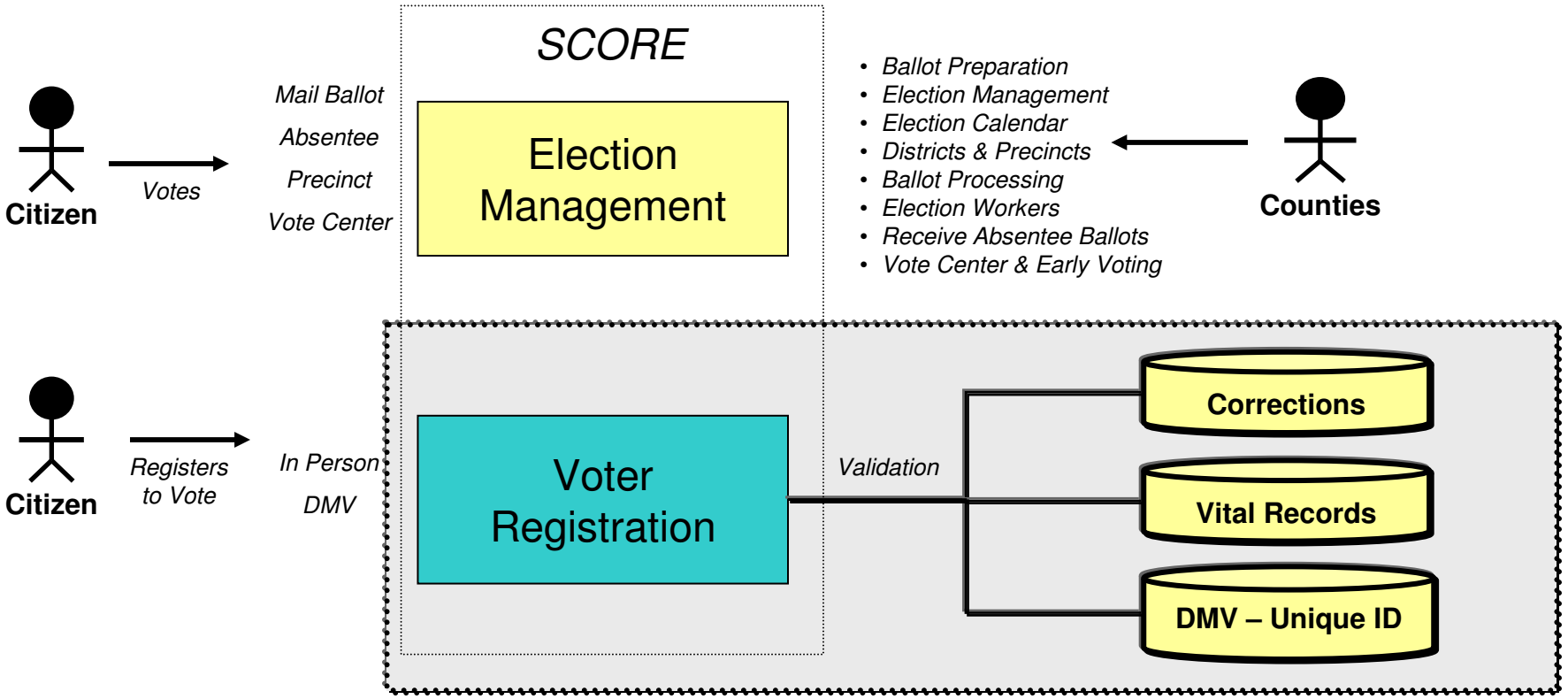


Role	Responsibilities
Assessment Lead	• Manages the assessment • Quality assurance • Deliverable production
Business Analyst	• Management and consolidation of county feedback • Functional SCORE SME
Technical Analyst	• Management and consolidation of technical options • Technical SCORE SME

Other Valued Contributors

- Trevor Timmons – CIO, State
- Pamela Campos, Governor's Office of Legal Counsel
- Leigh-Anne McDonald, SCORE II Project Manager
- Puneet Agrawal, SCORE Project Manager
- Scott Lee, Wyant Data Systems (IV&V)
- Steve Way, Saber – Maryland SCORE Project
- Holly Lowder, Elections - State
- Todd Olson, DPA
- Saber Senior Management
- Howard County, Maryland
- Maryland Secretary of State
- County Staff
  - Adams
  - Arapahoe
  - Chaffee
  - Delta
  - Denver
  - Douglas
  - El Paso
  - Jefferson
  - Larimer
  - Mesa
  - Pueblo
  - Weld

Understanding HAVA Compliance



- Colorado can deploy a HAVA compliant solution for the Fall 2008 elections.
  - Unique Identifier (DMV / DOR)
  - Statewide source of record
  - Felony verification (Corrections)
  - Death record validation (CDPHE)
  - Voter history
  - Automated validation and verification

For HAVA compliance – only the voter registration functions are necessary

Executive Summary of Findings

Key Technical / Operational Issues

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We addressed these key questions in our assessment.

Key Question	Findings*
Is there any evidence to suggest that the SCORE system does not work?	▪ This is a COTS solution that has been used in other states – although Colorado has customized this solution. ▪ There is no evidence to support major data architecture or application functionality faults at this time.
Is there any evidence to suggest that the system will not meet the transactional load requirements?	▪ The architecture supports other state election functions – Maryland was provided by Saber as a state with similar loads. ▪ Performance testing is being planned that will allow Colorado to adjust infrastructural capabilities if necessary.
Is there any evidence to suggest that the state-wide deployment of the VR function will fail?	▪ Counties are using this functionality today without any major issue.
Is there any major functionality that is untested or being released late?	▪ Election Worker and Petition Management are being modified for the 3.5 release. ▪ The are no other major functional pre-election releases planned.
Is scope clearly defined for the duration and deployment of the project?	▪ Scope could be tightened for the 2008 elections. ▪ There are too many lower level change requests taking cycles.
Is there sufficient organizational capability to successfully deploy this system by the Primary and General 08 elections?	▪ No – this is the most significant and immediate impact to the deployment at this time.

Findings are based on information available to date

County Perspective: Issues and Concerns

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The following summarizes county findings. There is a general sense that more time is needed to fully prepare for the 2008 Fall Elections.

Functionality
• Counties fear what they don't know and haven't tested.
  • Petitions
  • Polling Place & Vote Center Management
  • Election Workers
  • Printing Poll Books
• Data entry is time consuming.
• Some issues with the electronic Motor Vehicle queue.
• The feedback process from the help desk is not sufficient.
• Limited or insufficient reporting capabilities.
• Limited "hot key" capabilities.
	County Readiness / Adoption
	• Counties not sufficiently informed about key issues, contingency planning, and other key questions.
	• Workload issues associated with presidential election years coupled with new system rollout.
	• Nervousness about load, poll books, network issues.
	• Confusion around mock election.
	• Need support in defining new processes (aka workarounds).
	• Counties need a plan for precinct reporting – this is based upon issues with decertification and how this will be done if equipment is not certified.

Technology • Inexplicable connectively issues. • No "last mile" network ownership. • No proactive network monitoring. • Statewide concurrent user load concerns. • Miscellaneous hardware issues.	**Project / Support** • The feedback process from the help desk is not sufficient. • Field support is not sufficient for the counties. • Counties not sufficiently informed about key issues, contingency planning, and other key questions. • The Governor's Office needs to be on the Steering Committee through the election cycle. • Need for follow up support after training. • Training needs additional focus and more depth.

Fundamental / Foundational Issues

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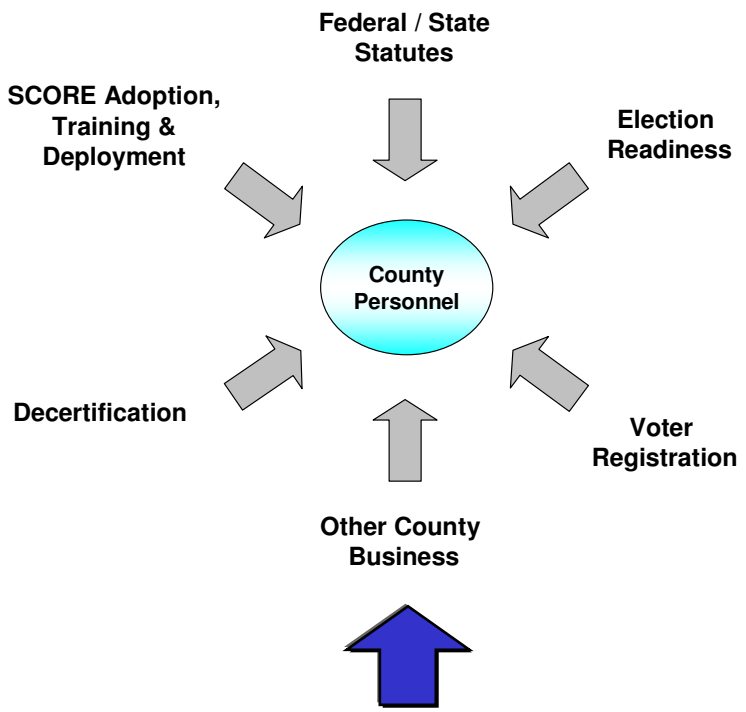
- Counties do not see the benefit of this deployment.
- While the Secretary of State (SOS) has adopted a centralized system for managing the election lifecycle – the State has not transformed the organization sufficiently to support this model.
- There is insufficient election stewardship and focus on county support at the SOS.
- County Election Capacity – counties are struggling with the additional workload, yet are the critical components to adoption of the system. Some counties are experiencing adoption issues because the change management resources that are required by the State are not being provided.
- Some counties will be dependent upon SCORE for their registration and election functions. Therefore SCORE must be deployed as planned.
- Some counties have legacy solutions they would rather use for the election management functions but are not sure when or if they can use these systems and how they would integrate with SCORE.

Impact on County Election Staff



The counties are the critical link. Without proper training and change management – the solution will face adoption issues in the counties.

Summary Findings

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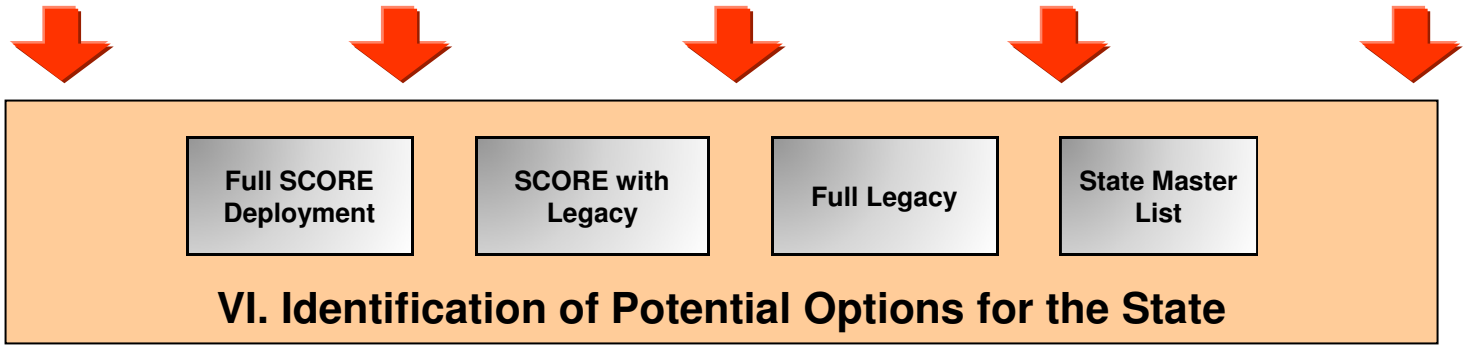
From the limited timeframe for the assessment, the following findings were identified.

Area	County Adoption	SCORE Transactional Capability	Technical Issues	Functionality	Contingency
Our Findings	• Counties are not being provided with sufficient communication or field support. • Some counties are dependent upon SCORE deployment • No counties have major reservations about using the SCORE VR component.	• Maryland has a similar load and architecture and does not have transactional, load issues. • Load testing is being scheduled and results from this testing will validate the concurrency loads. • There was no evidence to date that load is an issue.	• While there are some defects that are being resolved, there is no strong evidence of major technical issues. • The Citrix issue is being effectively mitigated. • A network team is needed to address network issues.	• County adoption of new functionality must be accelerated, supported. • Scope control needs to be aggressive. • Vote Center, Early Voting have been tested. Mock elections will certify this functionality. • Data entry processes will improve once voter merge is completed.	• Contingency plans should be updated and tested as part of the mock elections. • Contingency timing needs to be finalized. • Contingency work around solutions need to be fully validated.



At a High Level, We Analyzed the Following Options for Meeting the Desired Outcomes

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Options	Option 1 **SCORE Full Deployment** SCORE is deployed state-wide for the 2008 General Elections.	Option 2 **SCORE with Select Legacy Contingency** SCORE used for registration / Select Counties use legacy Election Management.	Option 3 **SCORE with Full Legacy Contingency** SCORE used for registration / ALL Counties use legacy Election Management.	Option 4 **SCORE as State Master List** SCORE used as bottom up central VR system / ALL Counties use legacy Election Management.	Option 5 **Use State Master List** Leverage State Master List as central voter registration source (worst case fall back position)
What has to Happen?	• SCORE must work • All Counties have to fully adopt SCORE • Mock election / UAT results have to be positive	• SCORE must work • Most counties have to fully adopt Score VR, EMS functions • Contingency counties' legacy system have to work	• SCORE must work • All counties have to fully adopt SCORE VR functions • All county legacy systems need to work	• SCORE must work • County legacy systems must work. • Design of HAVA solution needed • Changes to Score VR validation	• SCORE must work • All counties' legacy system needs to work • Design of HAVA solution needed • Changes to ML VR validation
RISK	**Moderate**	**Moderate**	**High**	**High**	**Moderate**
HAVA Compliant	**Yes**	**Yes**	**Yes**	**No**	**No**
Benefits	• Deployed as planned • Standard VR/EMS functionality • HAVA compliant	• Allows flexibility for counties • HAVA compliant	• Allows flexibility for counties • Reduces pressure on SCORE team • HAVA compliant	• Allows counties to use legacy systems	• Allows counties to use legacy systems
Estimated Costs	• $2.8M	• $3.5	• $4 to 5M	• $5M+	• $3M

Option 2 SCORE with Select Legacy Contingency

We believe Option 1 with a fall-back to Option 2 offers a lower risk profile

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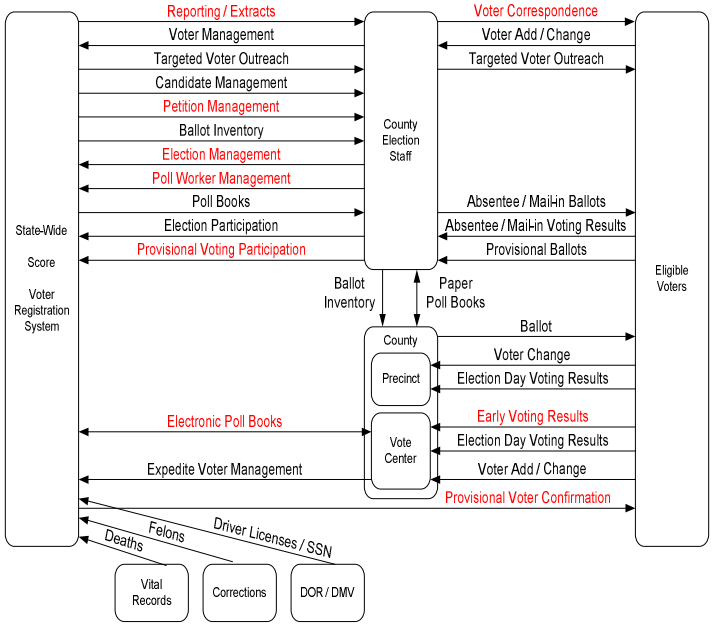
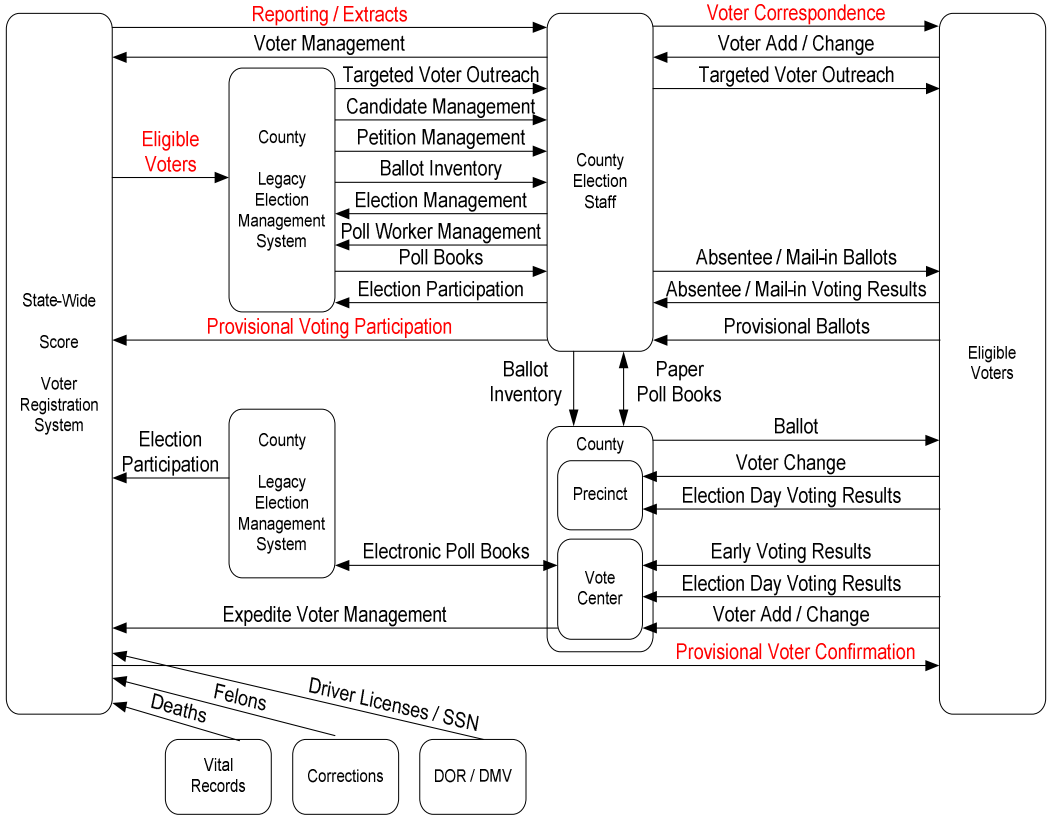


Most counties will use the SCORE system for full election system functions. (OPTION 1)

Qualified Counties will integrate SCORE VR data with their election management systems.



Option 2 SCORE with Select Legacy Contingency

Understanding this Option

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Scenario

- All counties use Score as their Voter Registration (VR) master source of eligible voters.
- Qualified counties use their legacy elections management (EMS) system to execute the '08 elections, and the remaining counties continue to use Score for VR and EMS functions.

Concept

- Selected (qualified) counties will be allowed to use legacy systems.
- All voter data is entered into SCORE and exported to existing legacy systems for these qualified counties.
- Counties synchronize voter data "as needed" during the election window.
- Election participation history is uploaded into to Score from Legacy after the election.

What Has to Happen

- All counties must migrate/adopt SCORE VR.
- State-wide voter data merged for duplicate records.
- Counties only use SCORE for VR; SCORE must work.
- Qualified counties need to be identified.
- County based-IT and Legacy System staff need to be engaged
- Legacy system IT support and licensing may need to be extended for qualified counties.
- Processes for how counties (if necessary) are going to sustain parallel operations effectively must be defined.
- Processes for data synchronization must be architected, designed, developed and tested.
- Data audit processes built for integrity checks

Benefits

- HAVA Compliant
- SCORE deployed for most counties with VR function fully deployed.
- Could reduce field support staff qualified counties use legacy.
- Allows counties to have an out to a trusted elections system
- Solution can be leveraged across legacy system platform – Votec, Sequoia, etc…

Risks

- Impact on county resources to design, test legacy interfaces.
- More counties that go to legacy will have longer term impact to SCORE project deployment.
- Customization by counties and their vendor legacy systems.
- Doesn't mitigate current SCORE performance issues.
- Increases QA cycles to validate data.
- Doesn't mitigate transactional load for voter registration functions.

Costs

- Extension of Saber development support.
- Additional Staff – Field Support, Change Management, Network
- Continued legacy licensing and operational costs (County)
- Costs for legacy systems changes pushed to counties – moderate costs (County)

Staff

- Estimated additional 13 FTE required to support the deployment.
- Realignment of SOS management team
- Additional county resources required for legacy integration
- Continuance of Saber through October to support legacy integration.

Option Blueprint

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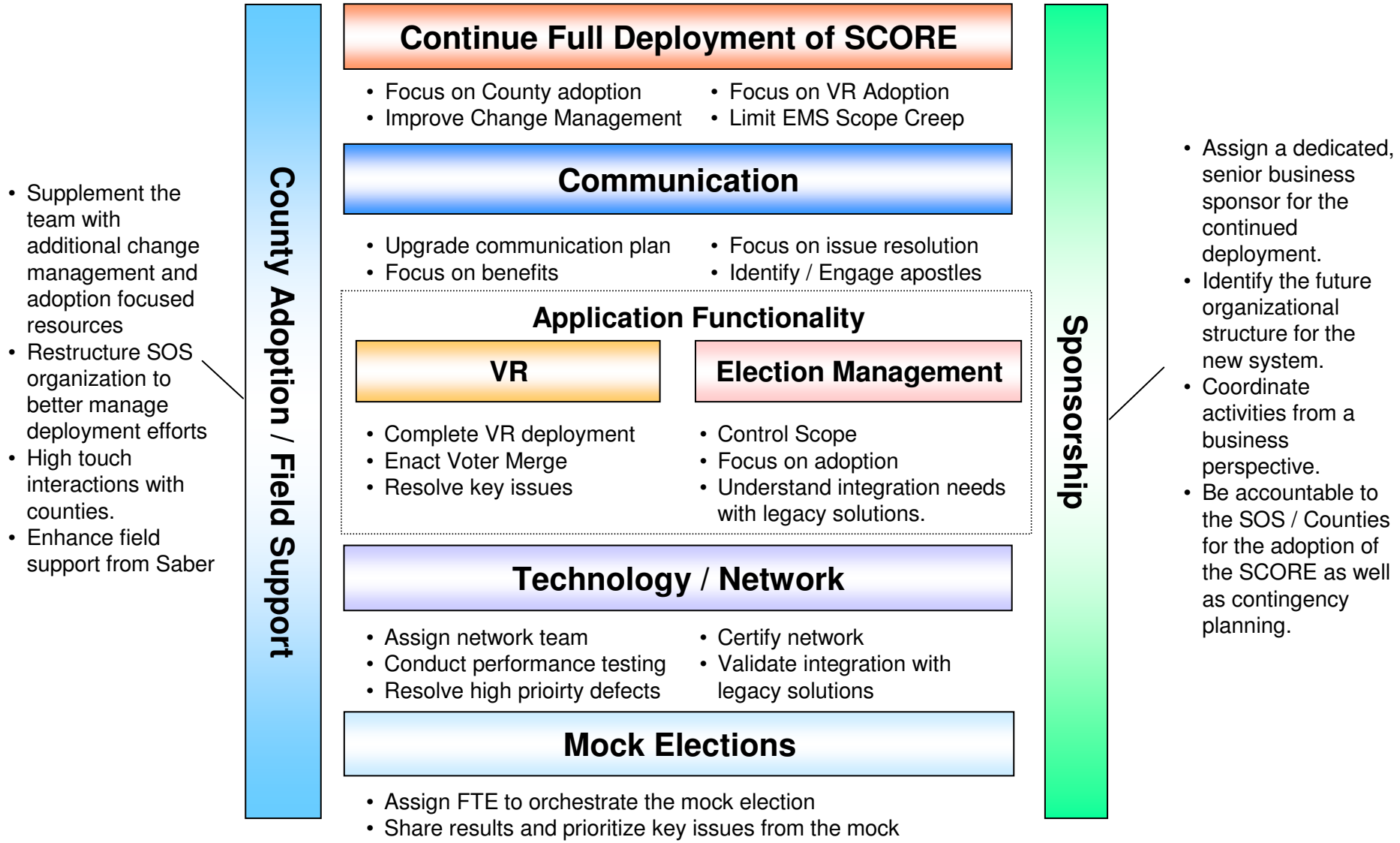

Action Plan

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Organization

- Staff the project team with additional FTE to support the adoption for the counties, including:
  - Full Time Business Sponsor
  - Adoption Manager
  - Mock Election Coordinator
  - Change Management Staff
  - Field Support Operations (Saber)
  - Network Operations
  - Additional Data Architecture (Saber) for contingency
- Establish more formal, structured communication with the counties.
- Refocus the CCB so it is more focused on strict scope management.
- Regionalize change management
- Enable “high touch” deployment for the counties.

Network

- Define and establish a network SWOT team to identify and mitigate existing network connectivity issues.
- Coordinate and prioritize DoIT / MNT resources to support the network SWOT team.
- Certify network architecture (Saber) in conjunction with testing.
- Identify network contingency operations.

Contingency

- Contingency for each type of scenario needs to be updated.
- Qualifications for counties that are not going to adopt SCORE EMS functionality need to be determined immediately.
- Counties need to “buy in” to the contingency operation as a last resort – not as an immediate option.
- Contingency expectations need to be clearly defined and communicated to counties.

Funding

- Funding options for extending the contract and hiring of contracted and permanent staff is first priority.
- The business case for this increased funding needs to be developed and communicated.
- All funding options should be explored and then if funding can not be appropriated, appropriate contingency needs to be adopted.

Will the implementation succeed if the State continues as planned without making changes?

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- There is a high risk that counties will not use the system due to adoption issues.
- Without full adoption by the counties, it is likely meeting the minimum HAVA compliant standard of the single source VR component would be at risk.
- Network issues will continue to be a problem and will likely not be resolved given the current organization, placing SCORE at risk even if the counties adopt.
- Adoption risks for counties that depend upon the full suite of Election Management (EMS) functions would be significantly higher.
- SOS may not be ready to support the deployment after the SCORE team departs the project.
- County tensions will continue to escalate and counter productive activity could result in a higher risk of implementation failure.
- Bottom line: Current project trajectory without change carries significant risks that should be aggressively mitigated.

As noted in this report, the Secretary of State has initiated some of the recommendations in this report.

Actions Taken By The SOS

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- The SOS has been working towards the some of the staffing and operational preparation highlighted in this report.
  - The field support program with Saber has been under discussion for quite some time and there is agreement that field presence this year is a necessary component for project success.
  - Adding staff within the SOS Elections Division dedicated to SCORE support has been underway for some time as well. Some of the key resources within the SOS Elections Division may meet some of the identified needs for SCORE deployment.
  - The SOS and SCORE team recognize that the mock election activities planned just after statewide deployment could significantly impact SCORE project delivery. At the November 2007 Steering Committee meeting, the decision was to defer devoting considerable resources to changing architectural directions. The SOS is prepared to update contingency plans if the Mock Election or other events indicate a major deployment issue with SCORE.

Current State Findings

Current Project Team Structure

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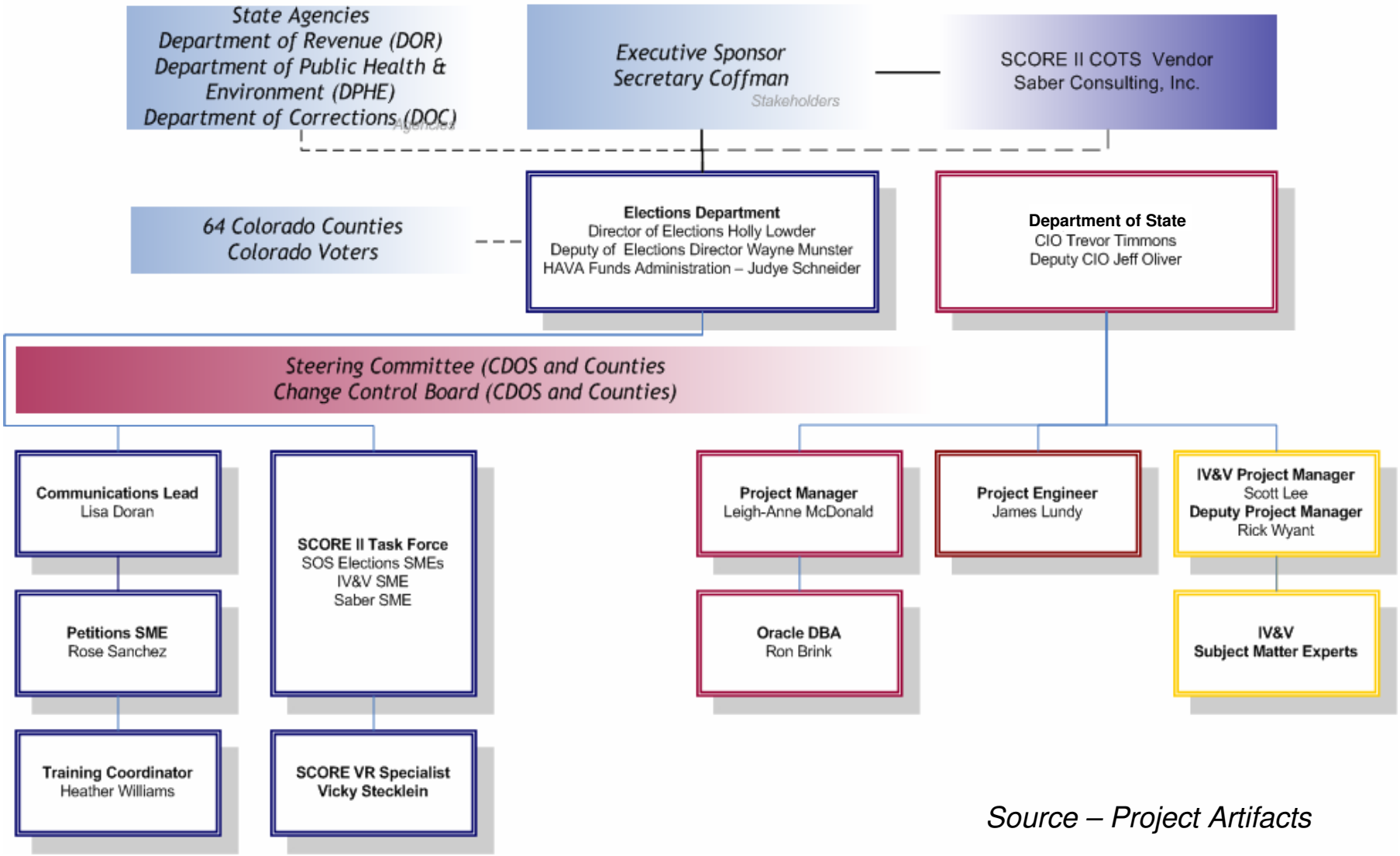

Source – Project Artifacts

Roles and Responsibilities

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Role	Resource	Responsibility	Estimated Project Involvement
Project Director	Trevor Timmons	Executive Oversight	10%
Project Manager	Leigh-Anne McDonald	Project Management	100%
Project Engineer	Jim Lundy	Technical Management	100%
IV&V Project Manager	Scott Lee	Independent Verification & Validation	100%
Director of Elections	Holly Lowder	Elections / Elections Law SME	30%
Deputy Elections Director	Wayne Munster	Elections / Elections LAW SME	10%
Elections	Vicky Stecklein	Elections SME	30%
Petitions	Rose Sanchez	Petitions SME	30%
Communication Lead	Lisa Doran	All Communication	50%
Funds Administrator	Judye Schneider	HAVA Funds Management	10%
Oracle DBA	Ron Brink	Oracle 10g DBA	10%
Training Coordination	Heather Williams	Training Coordination	10%

Source – Project Artifacts

IV&V Team Structure

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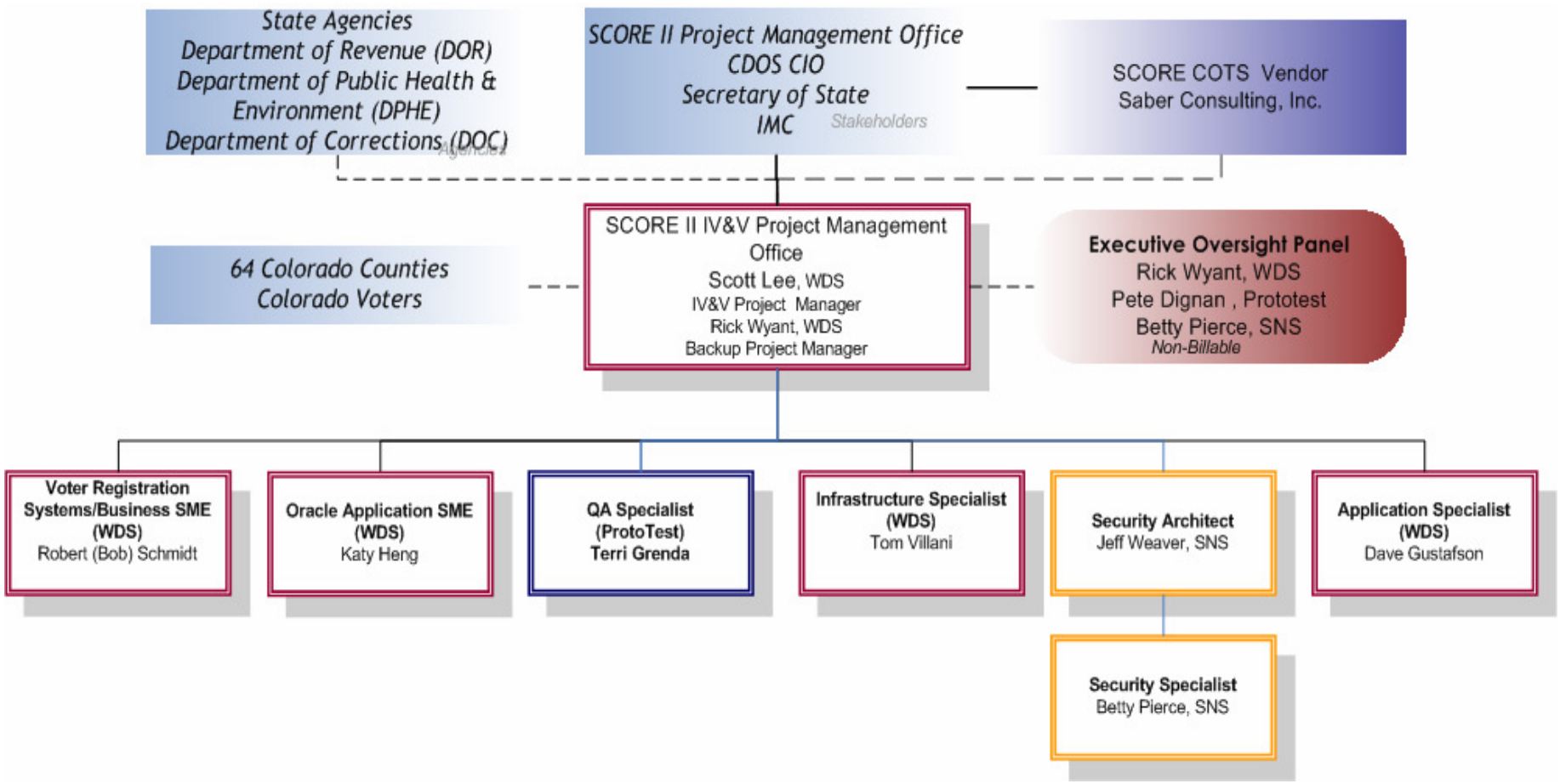

Source – Project Artifacts

Where is the SCORE Deployment Project?

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- **Release P 3.2 – released to PROD on Feb 3rd, 2008**
  - All VR reports and exports
  - All voter correspondences
  - Petitions application bugs & cosmetic issues
  - Tabulation interfaces for Diebold and Sequoia
  - Other open defects.
- **Release P 3.5 – targeted release to UAT on Feb 28th, 2008**
  - Remaining high priority issues scheduled to be resolved
  - Petition Management module changes
  - Election Worker module changes
  - Election Management module fixes
  - Election Worker, Election Management and Ballot Processing module reports and exports (re-verified by users and finalized)
  - Tabulation Interface for ES&S
  - Other identified issues
  - Mock election to be performed using this release
- **Release P 4.0 – targeted release to UAT on April 6th, 2008**
  - Customization to Provisional Ballots (requirements to be defined)
  - Districts and Precincts, Petitions, Address Library module reports (re-verified by users and finalized)
  - Any issues identified during mock election required for Nov '08
- **Release P 4.5 – targeted release to UAT on June 15th, 2008** ***(Not for Fall Election)***
  - Nice to have / deferred items which are not required for 2008
  - Other identified / low priority fixes
- **Release P 5.0 – targeted release to UAT on September 28th, 2008** ***(Not for Fall Election)***
  - Nice to have / deferred items which are not required for 2008
  - Voter Public Access (requirements to be finalized)
  - Other identified / low priority fixes

Functional Overview of SCORE

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Voter Maintenance (Registration)	Elections & Ballots	Petitions	Admin & Utilities	Reports & Labels	Agency Interface
• Voter Registration • Voter Search • Voter Merge (deferred) • Batch Scan • Commit Batch	• Election Calendar • Districts & Precincts • Ballot Processing • Election Workers • Receive Absentee Ballots • Vote Center & Early Voting	• Petitions	• Address Library • County Data Verification • Document Templates • Load External Data • System Configuration • User Administration • Web Based Public Access	• Reports • Labels	• CDOC Search • CDOR Registration • CDOR Search • CDPHE Search
P 3.2					
Ready	Ready	Ready	Ready	Ready	Ready
P 3.5					
Ready	In Dev.	In Dev.	In Dev.	In Dev.	Ready
P 4.0					
Ready	Not Ready	Not Ready	Not Ready	Not Ready	Ready

Project Plan – Overview and Key Dates

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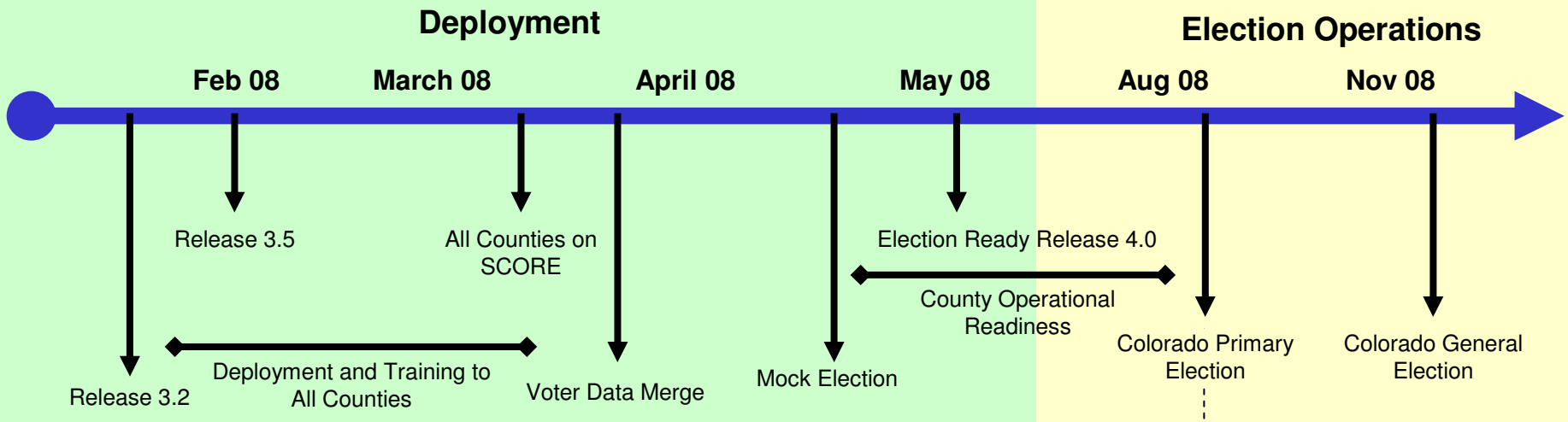
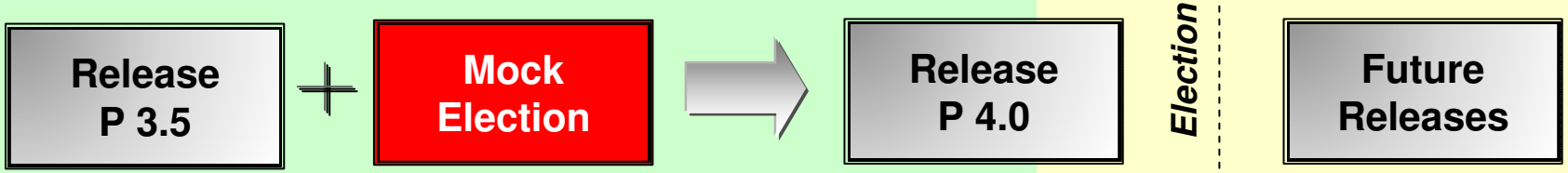


- Counties are currently in the midst of deployment.
- 35 counties has been deployed to SCORE.
- All counties will be trained, deployed on SCORE by end of March.
- Voter registration data merge will take place once all counties validate data.
- Performance testing will be conducted in March to validate the election management functions and concurrent load capabilities.
- There is a Mock Election scheduled in April – this is a dress rehearsal of key SCORE business functions and will also stress the system.

- August Primary
- November General Election
- Federal Reporting Requirements after the Election



Fundamental / Foundational Issues

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- Counties do not see the benefit of this deployment.
- While the Secretary of State (SOS) has adopted a centralized system for managing the election lifecycle – the State has not transformed the organization sufficiently to support this model.
- There is insufficient election stewardship and focus on county support at the SOS.
- County Election Capacity – counties are struggling with the additional workload, yet are the critical component to adoption of the system. Some counties are experiencing adoption issues because the change management resources that are required by the State are not being provided.
- Some counties will be dependent upon SCORE for their registration and election functions. Therefore SCORE must be deployed as planned.
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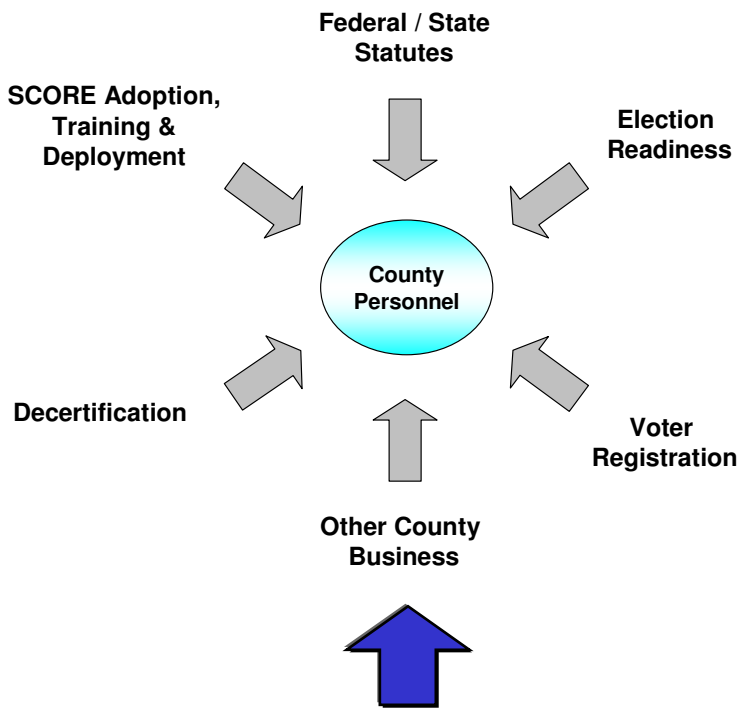
Impact on County Election Staff



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County Perspective: Issues and Concerns

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	County Readiness / Adoption
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	• Workload issues associated with presidential election years coupled with new system rollout.
	• Nervousness about load, poll books, network issues.
	• Confusion around mock election.
	• Need support in defining new processes (aka workarounds).
	• Need plan for precinct reporting – based upon issues with tabulation / concern for SCORE supporting ballot definition.

Technology • Inexplicable connectively issues. • No "last mile" network ownership. • No proactive network monitoring. • Statewide concurrent user load concerns. • Miscellaneous hardware issues.	**Project / Support** • The feedback process from the help desk is not sufficient. • Field support is not sufficient for the counties. • Counties not sufficiently informed about key issues, contingency planning, and other key questions. • The Governor's Office needs to be on the Steering Committee through the election cycle. • Need for follow up support after training. • Training needs additional focus and more depth.

County SCORE Deployment

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- Deployed means the county has been trained and are currently using SCORE with converted voter registration data.
- There are 35 counties deployed on the system.
  - 6 of the 11 large counties have been deployed:
    - Denver, El Paso, Larimer, Arapahoe, Pueblo and Mesa
    - Adams, Boulder, Jefferson, Douglas and Weld have not been deployed.
    - These 11 counties represent ~83% of the voter population in Colorado.
  - There are 12 counties that have no other fallback or legacy solution:
    - Alamosa, Chaffee, Cheyenne, El Paso, Elbert, Gilpin, Logan, Morgan, Otero, Prowers, Pueblo and Sedgwick
    - Each of these counties have been deployed
- By March 31st, 2008, all counties will have been through SCORE training and be deployed on P 3.5, the "Mock Election Ready" version of SCORE.

County Interviews

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- We spoke to the following counties and staff:

Name	County	Title
Barb Harms	Adams	Deputy Clerk and Recorder
Norma Burkhart	Adams	Elections Admin
Terry Wolber	Adams	Lead Technician
Paula Barrett	Adams	Training Manager
Kevin Beach	Adams	IT Director
Karen Long	Adams	Clerk and Recorder
Sandie Short	Arapahoe	Elections Deputy
Joyce Reno	Chaffee	Clerk and Recorder
Ann Eddins	Delta	County Clerk
Renee	Delta	Elections Deputy
Michael Scarpello	Denver	Elections Director
Amber McReynolds	Denver	Elections Deputy Diretor
Jack Arrowsmith	Douglas	County Clerk
Sheri Muehlfelt	Douglas	Election Manager
Mike Lyons	Douglas	Election Operations Manager
Liz Olson	El Paso	Elections Manager
Pam Anderson	Jefferson	County Clerk
Josh Liss	Jefferson	Elections Deputy
Cynthia Coleman	Larimer	Elections Manager
Janice Rich	Mesa	County Clerk
Sheila Reiner	Mesa	Elections Director
Amy Storm	Mesa	Elections Admin
Pam Hawkins	Mesa	Elections Admin
Bo Ortiz	Pueblo	Clerk and Recorder
Steve Moreno	Weld	County Clerk

Election Policy Impacts

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- Regardless of the options followed by the SOS related to SCORE, key policy decisions are creating stress in the counties. While SCORE is a point of contention and stress, there are other fundamental policy issues that are creating additional uncertainty.
  - Tabulation Certification / Paper in precincts – this is a fundamental policy that will have significant impact on how the election is managed and impacts key election management functions.
  - Precinct reporting – Current state law requires counties to report voting results by precinct. Precinct reporting is difficult to implement for vote centers and early voting if paper ballots are used.
  - Communication – Counties are expressing a shared concern about communication from the State regarding these policies just as they are with the SCORE system.
  - Decision Making – Counties feel the State is not making key decisions quickly enough – in addition to these policy issues, key decisions around SCORE (forms, standard data dictionary) are not being made as quickly as counties would like.

Poll Book Printing Capabilities – Other States

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		Print Start	Print End				
Electus-WY	**County**	**Start Time**	**End Time**	**Elapsed Time in Mins**	Voters	Number of precincts/splits	No. of poll book Pages
	Fremont	13:48	13:50	0:01	15265	32	1539
	Natrona	13:48	13:50	0:01	27572	49	2780
	Sheridan	13:48	13:50	0:01	12631	29	1275
	Bighorn	13:48	13:50	0:01	5029	15	508

Electus-MS	**County**	**Start Time**	**End Time**	**Elapsed Time in Mins**	Voters	Number of precincts/splits	No. of poll book Pages
	Hinds	13:58	14:13	0:15	133157	6711	126
	Bolivar	13:58	14:13	0:15	27935	1411	28
	Amite	13:58	14:14	0:16	10427	532	21

Electus-IA	**County**	**Start Time**	**End Time**	**Elapsed Time in Mins**	Voters	Number of precincts/splits	No. of poll book Pages
	Polk	14:50	15:22	0:32	275846	183	23074
	Delaware	14:50	14:54	0:04	12528	14/53	1051
	Adams	14:50	14:51	0:01	3325	11/34	282

Poll Book printing capabilities are not an issue in these other states and despite a projected higher county count, the architecture should handle this load given the 07 election and other state results.

Poll Book Printing Capabilities – Colorado UAT

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Individual Execution

			Generate Poll Book			Print Poll Book				Save As PDF						
Code	County	Site	Start	End	Elapsed	# of Pages	Start	End	Elapsed	Start	End	Elapsed	Total Elapsed	Voters Pulled	Precincts	Poll Book Pages
16	Denver	COVR1MF4	9:54:53 AM	10:38:02 AM	0:43:09	579	10:43:05 AM	10:48:55 AM	0:05:50	10:43:05 AM	10:48:55 AM	0:05:50	0:54:49	369727	423	50938
21	El Paso	COVR1MF2	11:08:41 AM	11:47:37 AM	0:38:56	147	11:48:26 AM	11:51:16 AM	0:02:50	11:53:07 AM	11:53:22 AM	0:00:15	0:42:01	331755	387	45762
11	Conejos	COVR1MF10	12:10:56 PM	12:11:35 PM	0:00:39	713	12:13:43 PM	12:15:23 PM	0:01:40	12:20:26 PM	12:20:55 PM	0:00:29	0:02:48	4863	10	713
20	Elbert	COVR1MF7	10:54:28 AM	10:56:20 AM	0:01:52	2058	10:59:15 AM	11:03:58 AM	0:04:43	11:05:24 AM	11:06:15 AM	0:00:51	0:07:26	14909	18	2058
39	Mesa	COVR1MF10	11:56:04 AM	12:05:12 PM	0:09:08	196	12:06:55 PM	12:07:21 PM	0:00:26	12:09:54 PM	12:10:06 PM	0:00:12	0:09:46	85747	82	11634
		Totals:			1:33:44	3693			0:15:29			0:07:37	1:56:50	807001	920	111105

Simultaneous Execution

			Generate Poll Book			Print Poll Book				Save As PDF						
Code	County	Site	Start	End	Elapsed	# of Pages	Start	End	Elapsed	Start	End	Elapsed	Total Elapsed	Voters Pulled	Precincts	Poll Book Pages
16	Denver	COVR1MF4	12:28:23 PM	1:21:30 PM	0:53:07	579	2:27:11 PM	2:33:02 PM	0:05:51	2:51:26 PM	2:51:53 PM	0:00:27	0:59:25	369727	423	50938
21	El Paso	COVR1MF2	12:28:23 PM	1:17:22 PM	0:48:59	147	2:27:11 PM	2:31:46 PM	0:04:35	2:51:26 PM	2:51:43 PM	0:00:17	0:53:51	331755	387	45762
11	Conejos	COVR1MF10	12:28:23 PM	12:29:04 PM	0:00:41	713	2:27:11 PM	2:28:49 PM	0:01:38	2:51:26 PM	2:51:59 PM	0:00:33	0:02:52	4863	10	713
20	Elbert	COVR1MF7	12:28:23 PM	12:30:03 PM	0:01:40	2058	2:27:11 PM	2:32:17 PM	0:05:06	2:51:26 PM	2:53:07 PM	0:01:41	0:08:27	14909	18	2058
39	Mesa	COVR1MF10	12:28:23 PM	12:37:32 PM	0:09:09	196	2:27:11 PM	2:27:54 PM	0:00:43	2:51:26 PM	2:51:37 PM	0:00:11	0:10:03	85747	82	11634
		Totals:			1:53:36	3693			0:17:53			0:03:09	2:14:38	807001	920	111105

↑ ***Simultaneous Execution are cumulative run times.***

Poll Book printing capability has been tested in Colorado and projections are that SCORE can handle this functionality. Mock Election and performance testing will provide further validation.

County	Page Count
Conejos Total	713
Denver Total	50938
Elbert Total	2058
El Paso Total	45762
Mesa Total	11634
Grand Total	111105

Maryland Election Performance – Base Statistics

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Saber's Electus product was used in the State of Maryland's February 12th 2008 primary. On that day, Maryland voters voted in both precinct and voter center elections. Both paper and electronic poll books were used.

Maryland's Electus physical architect is the same as Colorado's with the exception of Colorado's additional need for concurrent users. Local counties use ISPs to connect to the Electus system. Maryland had no load issues using a similar architecture. Colorado is using a more robust architecture than Maryland.

Comparison	Colorado	Maryland
Number of Counties	64	24
Number of Eligible Voters	2,903,376	3,134,077
Number of planned concurrent Citrix users	1000	300
Number of database servers	8	4
Number of Citrix meta-frame servers	20	8

Maryland Election Performance – Results

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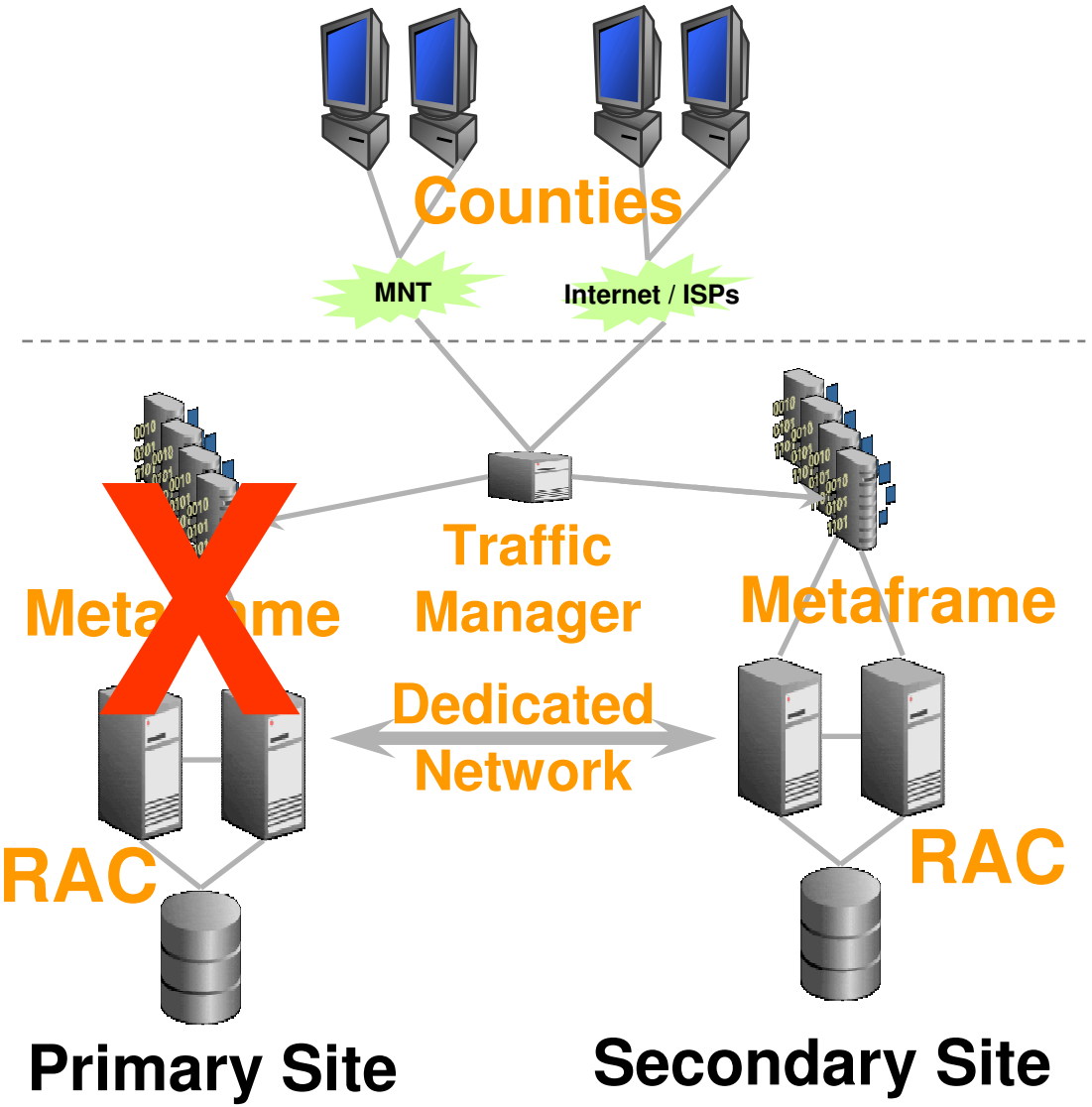
Poll book Printing

- 3,339,401 eligible voters were pulled from 24 counties in 2:57 (h:mm). Most counties had their poll books within an hour. Prior poll book generation tests were done by Saber to performance tune these times.
- During the primary pull, poll books were pulled after hours so that normal users were not on the system.
- During poll book printing process, the database servers had intermittent peaks of up to 60-80% CPU, but a majority of the time, the performance was in the 20-40% range.

Election Day

- On election day 1,067,000 voters voted in the primary - 37%. This does not include absentee, provisional and after hour poll ballots.
- On primary day, approximately 270-280 concurrent users were using Electus (graph on next slide). Colorado database and Citrix environment has been sized for a much larger volume of concurrent users.
- During the day, the citric metaframe servers had intermittent peaks of up to 40% CPU, mostly early in the day and close to polls closing. A majority of the time, the CPU performance was typically between 10-15%.
- CPU usage and load was all within range.
- During the day, the database servers had intermittent peaks of up to 30% CPU. A majority of time the CPU performance was typically between 5-10%.
- Some SPIRIT tickets submitted, but not major issues. The State Board of Elections did not report any outages. Some latency was reported by counties, but not called into the Saber's help desk.

Score Deployment – Disaster Recovery (D/R) Issues



D/R Issues

- Both the primary and second sites are currently co-located in the E-Fort (the current Colorado disaster recovery site). The secondary site is scheduled to move to a separate location at the end of March.
- A single point of failure exists in the inbound Cisco 2960G Switch connected to the DNS load balancers.
- The environment is architected to support high-availability. Nonetheless, Score's current DRA plan can not timely react to catastrophic failure such as the loss of both sites (due to an act of God) or the loss of 2 or more ISPs in both data centers (due to a multiple trunk line).
- Many counties rely on a single ISP.

D/R Recommendations

- Purchase a spare for the Cisco 2960G Switch in the event of hardware failure.
- Review ISP connections in each location.
- For the '08 election, counties need to plan for local DRA issues (such as ISP failure) and catastrophic failure of Score. The Network team should recommend DRA standards to the county. The Network team should also review each county's election DRA plan.

Score Deployment – Citrix Issues & Recommendations

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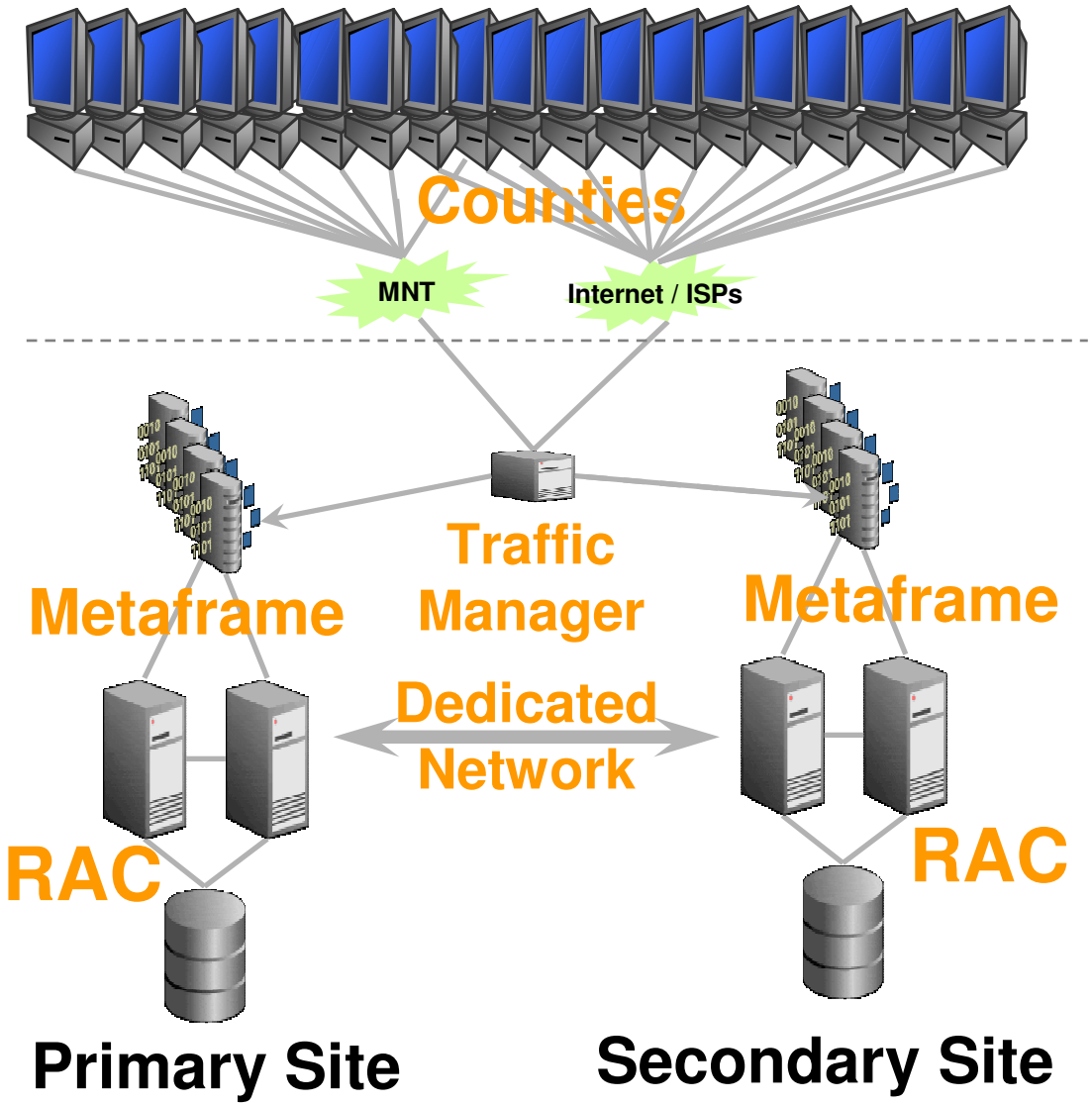

Citrix Issues

- The primary site has been downgraded to Citrix's software load balancing solution. This change is to correct an SSL connection issue. This makes Colorado's Score environment consistent with Saber's deployments in other states. The secondary site is scheduled to migrate to software load balancing before the end of March.
- Saber's automated Citrix load testing is not complete. It is scheduled to start in March with completion in early April.

Citrix Recommendations

- Have Citrix independently review and certify Saber's Citrix architecture and configuration.
- Execute an separate load test with real users in the mock election – both poll book printing and general usage.
- Saber architecture is proven during election day in other states (refer to Maryland case study in appendix). After the load test analyze statistics, performance tune and/or purchase new servers if 1000 concurrent users can not be supported. Run load tests until requirements is met.

Network Survey Results

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County	Address		Meets Minimum Requirements	Survey Monkey Results: Speed for County	Survey Monkey Results: Connection for SCORE II in Physical Office	Survey Monkey Results: Realibility (Does it usually work?)	CDOS On-Site Testing and / or County Follow Up Status
Adams	450 S. 4th Ave	Brighton	Yes	I have no idea	I have no idea	I have no idea	Dec 19: Jim Lundy confirmed with County they have no connectivity issues
Adams	1865 W 121st Ave	Westminster	Yes				Dec 19: Jim Lundy confirmed with County they have no connectivity issues
Adams	3449 N. Chambers Rd	Aurora	Yes				Dec 19: Jim Lundy confirmed with County they have no connectivity issues
Adams	4201 E 72nd Ave	Commerce City	Yes				Dec 19: Jim Lundy confirmed with County they have no connectivity issues
Adams	5150 Front Range Pkwy	Watkins	Yes				Dec 19: Jim Lundy confirmed with County they have no connectivity issues
Adams	8452 Federal Blvd	Westminster	Yes				Dec 19: Jim Lundy confirmed with County they have no connectivity issues
Alamosa			Yes				Dec 19: Jim Lundy confirmed with County they have no connectivity issues
Arapahoe			Yes				Yes
Archuleta	449 San Juan	Pagosa Springs	Yes	Okay	Okay	Okay	
Baca	741 Main	Springfield	Yes	Great	Great	Great	
Bent	725 Bent Ave	Las Animas	Yes	Okay	Okay	Okay	Jan. 15: Jim Lundy procured an eight port 10/100 Ethernet Switch which was delivered to John Paulsen for delivery and installation in the county. Jan 31: Jim Lundy confirmed the county re-gifted the swtich because they believe their old switch will work.
Boulder	1750 33rd St	Boulder	Yes	Great	Great	Great	
Boulder	529 Coffman St	Longmont	Yes				
Boulder	722 Main St	Louisville	Yes				

Network Survey Results

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County	Address		Meets Minimum Requirements	Survey Monkey Results: Speed for County	Survey Monkey Results: Connection for SCORE II in Physical Office	Survey Monkey Results: Realibility (Does it usually work?)	CDOS On-Site Testing and / or County Follow Up Status
Broomfield	One DesCombes Dr	Broomfield	Yes	Great	Great	Great	
Chaffee			Yes				
Cheyenne	51 S. 1st St	Cheyenne Wells	Yes	Okay	Okay	Okay	Jan 10: Jim Lundy discussed with county clerk who complained access was slow. Jim spoke with Rebeltec who confirmed said they had 2 Mbps bandwidth and were currently hitting 720 Kbps peaks. They will provide utilization reports. The clerk's complaints of slow turn around do not seem to be caused by lack of bandwidth. Jan 18: Jim Lundy confirmed peak load is 1.36 mid-day. Jan 31: Jim Lundy reviewed tracert that showed 16 hops with a 1.4 second latency. Jim provided thie information to Rebeltec.
Clear Creek	405 Argentine St	Georgetown	Yes	Great	Okay	Okay	Jan 10: Jim Lundy unable to contact county by phone, has sent emails.
Conejos			Yes				
Costilla	416 Gaspar St	San Luis		Bad	Bad	Bad	Dec 19: Jim Lundy confirmed the county purchased some wireless workstations and one wireless adapter for the State provided workstation. They have asked for new internet access service through Blanca Telephone Company and will confirm when they get their wireless LAN established. Jan 17: Jim Lundy confirmed circuit is installed and dedicated to elections. Original bandwidth (5Mbps down / 2Mbps up) is excessive and will be changed to 1.5 Mbps down / .54 Mbps up. Jan 31: Jim Lundy confirmed everything is ready

Network Survey Results

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County	Address		Meets Minimum Requirements	Survey Monkey Results: Speed for County	Survey Monkey Results: Connection for SCORE II in Physical Office	Survey Monkey Results: Realibility (Does it usually work?)	CDOS On-Site Testing and / or County Follow Up Status
Crowley	631 Main St.	Ordway	Yes	Great	Okay	Okay	Yes
Custer	205 S. 6th St	Westcliffe	Yes	Okay	Okay	Okay	
Delta	501 Palmer	Delta	Yes	Great	Okay	Great	
Delta	196 W. Hotchkiss Ave	Hotchkiss	Yes				
Denver	303 W Colfax Ave	Denver	Yes	I have no idea	I have no idea	I have no idea	Dec 19: Jim Lundy confirmed the county has reported ample bandwidth and LAN with knowledgable IT staff for all locations.
Dolores	409 N. Main St	Dove Creek	Yes	Great	Bad	Okay	Yes Dec 19: Jim Lundy confirmed the county is looking to put a wireless adapter in the State provided workstation so she can use it on the County ISP.
Douglas	301 N. Wilcox St	Castle Rock	Yes	Great	Okay	Okay	
Eagle	500 Broadway	Eagle	Yes	Great	I have no idea	I have no idea	Dec 19: Jim Lundy confirmed the county has the bandwidth and LAN is available, and no issues exist.
Elbert			Yes				Yes
El Paso			Yes				
Fremont	615 Macon Ave	Canon City	Yes	Okay	Great	Great	
Fremont	31 Werner Rd	Penrose	Yes				
Garfield	109 8th St	Glenwood Springs	Yes	Okay	Okay	Okay	Dec 19: Jim Lundy confirmed the speed test has shown ample bandwidth. He is waiting on the County to confirm status. Jan 10: County confirmed current connectivity reported bandwidth. County is improving bandwidth for Rifle to a minimum one T1. Jan 31: Jim Lundy confirmed with the county they would provide status tomorrow.
Garfield	144 E. 3rd St	Rifle	Yes				

Network Survey Results

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County	Address		Meets Minimum Requirements	Survey Monkey Results: Speed for County	Survey Monkey Results: Connection for SCORE II in Physical Office	Survey Monkey Results: Realibility (Does it usually work?)	CDOS On-Site Testing and / or County Follow Up Status
Gilpin			Yes				
Grand	308 Byers Ave	Hot Sulphur Springs	Yes	Great	I have no idea	Great	
Gunnison	221 N. Wisconsin St	Gunnison	Yes	Great	Great	Great	Yes
Hinsdale	317 N. Henson	Lake City	Yes	I have no idea	I have no idea	I have no idea	Yes Dec 19 - Jim Lundy confirmed the county IT vendor has checked LAN and Internet access, and everything is okay.
Huerfano	401 Main St	Walsenburg	Yes	I have no idea	Okay	I have no idea	Yes Dec 19: Jim Lundy confirmed he connected the county with an additional switch and bandwidth is ample.
Jackson	396 Le Fever St	Walden	Yes	I have no idea	I have no idea	I have no idea	Yes Dec 19: Jim Lundy confirmed the county put T1 in this summer. He is waiting on the county to confirm status. Jan 11: Jim Lundy received information. 2008 - tracert - 1, 18, 17, 56, 57,57,57 ms, speedtest 1.512/.515 Mbps.
Jefferson	100 Jefferson Cty Pkwy	Golden	Yes	Great	Great	Great	
Jefferson	2099 Wadsworth Blvd	Lakewood	Yes				
Jefferson	4990 County Hwy 73	Evergreen	Yes				
Jefferson	6004 S. Kipling St	Littleton	Yes				
Jefferson	6510 Wadsworth Blvd	Arvada	Yes				
Kiowa	1305 Goff St	Eads	Yes	Great	Great	Great	
Kit Carson	251 16th St Suite 203	Burlington	Yes	Okay	Great	Great	
La Plata	1060 E. 2nd Ave	Durango	Yes	Great	Okay	Okay	
Lake	505 Harrison Ave	Leadville	Yes	Great	Great	Great	
Larimer			Yes				
Las Animas	200 E. 1st St	Trinidad	Yes	Okay	Okay	Okay	Yes

Network Survey Results

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County	Address		Meets Minimum Requirements	Survey Monkey Results: Speed for County	Survey Monkey Results: Connection for SCORE II in Physical Office	Survey Monkey Results: Realibility (Does it usually work?)	CDOS On-Site Testing and / or County Follow Up Status
Lincoln	103 3rd Ave	Hugo	Yes	Great	Great	Great	Yes
Logan	315 Main St	Sterling	Yes	Great	Great	Great	Yes
Mesa			Yes				Jan 10:Jim Lundy suggested to Pam that they ask the IT staff to raise the priority on their priority appliance when they are going to put the application to heavy use. Bresnan reported their bandwidth to be a maximum connection of 6 Mbps up and down at 544 Rood Ave. Suite 301, Grand Junction, CO 81505-5007.
Mineral	1201 N. Main St	Creede	Yes	Okay	Great	Great	Yes
Moffat	221 W. Victory Way	Craig	Yes	Great	Great	Great	Yes
Montezuma	109 W. Main St	Cortez	Yes	Okay	Okay	Okay	
Montrose	320 S. 1st St	Montrose		Okay	Okay	Okay	Dec 19: Jim confirmed the county has been checked and is ready.
Montrose	300 Main St	Nucla	The Nucla branch has wireless Internet access installed.				Dec 19: Jim confirmed the county has been checked and is ready.
Morgan	231 Ensign St	Ft. Morgan	Yes	Great	Great	Great	
Otero	13 W. 3rd St	La Junta	Yes	Great	Okay	Great	Yes
Ouray	541 4th St	Ouray	Yes	Okay	Okay	Okay	Yes Dec 19: Jim Lundy has confirmed the county should be ready.
Park	221 S. Interocean Ave	Holyoke		Okay	Okay	Okay	Yes
Phillips			PC Telecom to proceed with the up-grade to 1.5M/512k: $56.95 service for the Court Housel.	Okay	Okay	Okay	Dec 20: Jim Lundy confirmed the county has requested an upgrade, it has been reported accomplished to a full T1.
Pitkin	530 E. Main St	Aspen	Yes	Okay	Okay	Okay	Jan 10: Jim Lundy received bandwith information from county. Tracert = 75 ms latency with 8 hops. Speed test = 1,1.,54 Mbps.

Network Survey Results

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County	Address		Meets Minimum Requirements	Survey Monkey Results: Speed for County	Survey Monkey Results: Connection for SCORE II in Physical Office	Survey Monkey Results: Realibility (Does it usually work?)	CDOS On-Site Testing and / or County Follow Up Status
Pueblo	215 W. 10th St	Pueblo	Yes	Great	Great	Great	
Rio Blanco	555 Main St	Meeker	Yes	Okay	I have no idea	Okay	Yes Dec 19: Jim Lundy has confirmed the county's IT staff would perform the LAN connection after the Internet access was provided. He is waiting on the county for status. Jan 4: Jim Lundy has confirmed the county will have the cabling completed next week. Jan 31: Jim Lundy left vm to confirm status.
Rio Blanco	17497 Hwy 64	Rangely	Yes				
Rio Grande	965 Sixth St	Del Norte	Yes	Okay	Okay	Okay	
Routt	501 4th St	Saguache		Okay	Okay	Okay	
Saguache			Yes	I have no idea	I have no idea	I have no idea	Dec 20: Jim Lundy is wating on the county to return his call. Jan 11: Jim Lundy confirmed the county has had delays re-installting hardware and testing connectivity. They promise to complete before training begins and to contact CDOS with the results.
San Juan	1557 Greene St	Silverton	Yes	I have no idea	I have no idea	Okay	Yes Dec 20: Jim Lundy has confirmed the a local IT service was found and the Internet access is statisfactory.
San Miguel	305 W. Colorado Ave	Telluride	Yes	Okay	Okay	Okay	Yes
Sedgwick	315 Cedar St	Julesburg		Okay	I have no idea	Okay	Yes Dec 20 - Jim Lundy has confirmed the county will perform a speed test to check installation of a 1 Mbps Internet access. He is waiting on the county to confirm status.
Summit	208 E. Lincoln Ave	Breckenridge	Yes	Okay	Okay	Okay	

Network Survey Results

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County	Address		Meets Minimum Requirements	Survey Monkey Results: Speed for County	Survey Monkey Results: Connection for SCORE II in Physical Office	Survey Monkey Results: Realibility (Does it usually work?)	CDOS On-Site Testing and / or County Follow Up Status
Teller	101 W. Bennett Ave	Cripple Creek	Yes	Okay	I have no idea	Okay	Dec 20: Jim Lundy waiting on the county to return his call. Jan 31: Jim Lundy confirmed county is ready.
Washington	150 Ash St	Akron	Yes	Great	Great	Great	
Weld	1401 North 17th Ave	Greeley	Yes	Great	Great	Great	
Yuma	310 Ash St	Wray	Yes	Okay	Okay	Okay	Dec 20: Jim Lundy has confirmed the county's issues are valid. There are no SLAs for Internet access to SCORE. There for there are no remedies for reliability. A VPN from the county to the datacenter would provide an SLA for the layer two connections between two routers. There is still no SLA assured for the two routers making the Internet connection. Jan 14: Jim Lundy has suggested the county contact Plains Telco and Premier Systems about reliable access to the Internet. Jan 31: Jim Lundy confirmed with County clerk their plans to re-wire the county building and provide dedicated changes for internet access

Reviewing Options

At a High Level, We Analyzed the Following Options for Meeting the Desired Outcomes

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Options	Option 1 **SCORE Full Deployment** SCORE is deployed state-wide for the 2008 General Elections.	Option 2 **SCORE with Select Legacy Contingency** SCORE used for registration / Select Counties use legacy Election Management.	Option 3 **SCORE with Full Legacy Contingency** SCORE used for registration / ALL Counties use legacy Election Management.	Option 4 **SCORE as State Master List** SCORE used as bottom up central VR system / ALL Counties use legacy Election Management.	Option 5 **Use State Master List** Leverage State Master List as central voter registration source
What has to Happen?	• SCORE must work • All Counties have to fully adopt SCORE • Mock election / UAT results have to be positive	• SCORE must work • Most counties have to fully adopt Score VR, EMS functions • Contingency counties' legacy system has to work	• SCORE must work • All counties have to fully adopt SCORE VR functions • All county legacy systems need to work	• SCORE must work • County legacy systems must work. • Design of HAVA solution needed • Changes to Score VR validation	• SCORE must work • All counties' legacy system needs to work • Design of HAVA solution needed • Changes to ML VR validation
RISK	**Moderate**	**Moderate**	**High**	**High**	**Moderate**
HAVA Compliant	**Yes**	**Yes**	**Yes**	**No**	**No**
Benefits	• Deployed as planned • Standard VR/EMS functionality • HAVA compliant	• Allows flexibility for counties • Reduces pressure on SCORE team • HAVA compliant	• Allows flexibility for counties • Reduces pressure on SCORE team • HAVA compliant	• Allows counties to use legacy systems	• Allows counties to use legacy systems

Continue with FULL SCORE Deployment

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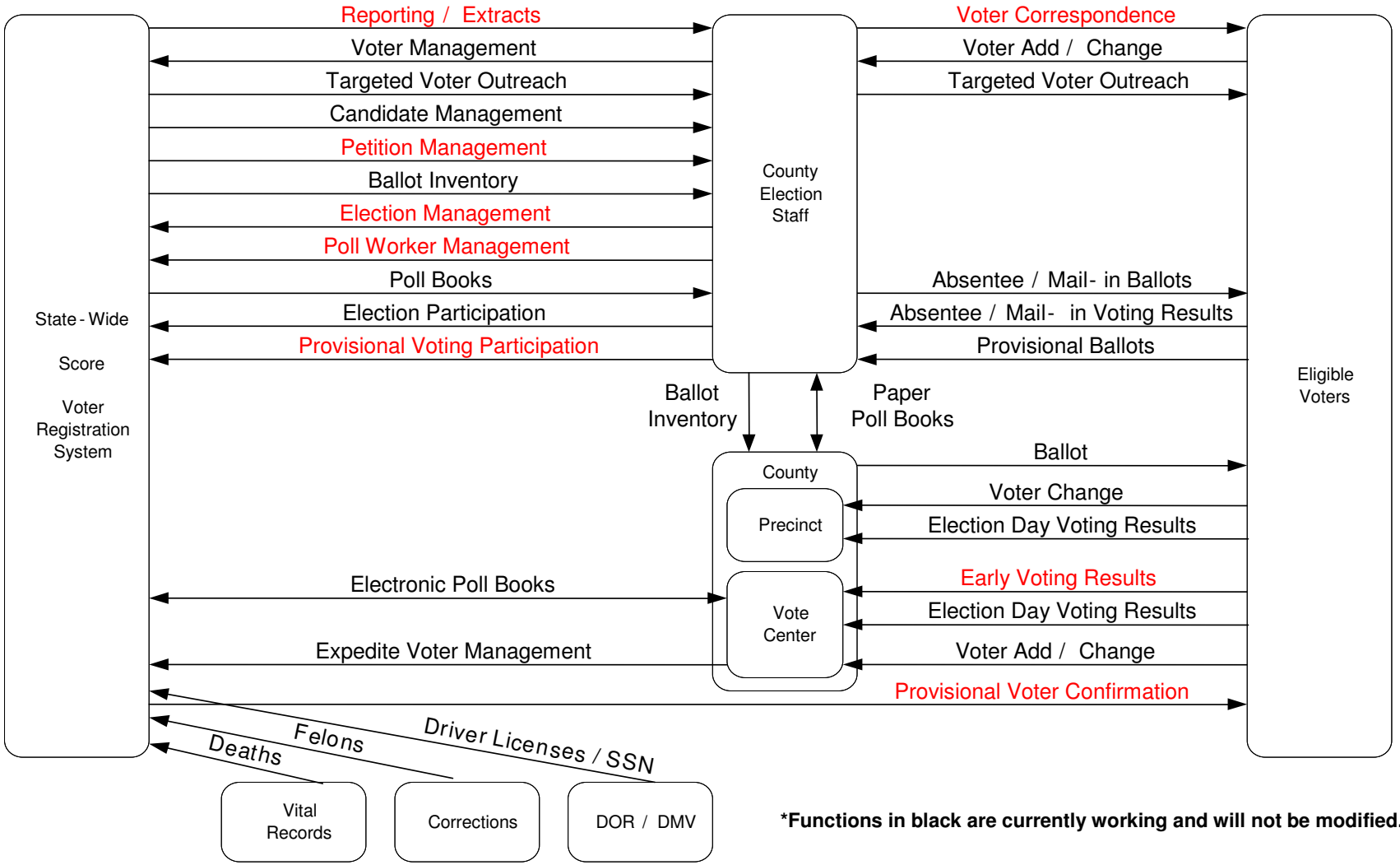
The functions* in red will be released or updated in version 3.5.



***Functions in black are currently working and will not be modified.**

Option 1 - SCORE Full Deployment

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Scenario

- All counties use Score as their Voter Registration (VR) and Election Management (EM) Systems.
- Legacy systems are not used during the election.

Concept

- Full rollout and use of Score during the '08 elections as planned.
- Counties adopt SCORE for all critical functions.
- Counties use work-around solutions for any functions not part of Release 4.0.

What Has to Happen

- All counties need to migrate to Score for VR and EM functions
- All planned releases need to be deployed.
- Focus from CCB to make sure functionality changes are critical in nature.
- Organizational changes need to be made for additional field support, network operations, and change management.
- Network issues need to be resolved.
- Key milestones such as the mock election may impact how the application is deployed.

Benefits

- HAVA Compliant
- Score deployment as planned
- No impact to Saber contract
- Consistent election management system is deployed state-wide.
- Counties don't have to maintain legacy systems.

Risks

- Counties fail to adopt the solution.
- Key network issues aren't resolved.
- Score fails to scale and fails performance test.
- Key issues occur during the election and there isn't sufficient contingency.

Costs

- $2.8M in additional organizational costs to support deployment.
- County adoption costs – likely temps for data entry, support for back-office operations.
- Investments in network, architecture.

Staff

- Continued effort by the County to adopt the solution.
- County IT staff
- High use of Saber / SCORE resources
- Additional staff for county adoption.
- Network staff.

Option 2 SCORE with Select Legacy Contingency

Option 2 Offers Lower Risks:

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1. Continue to deploy SCORE to all counties.
2. By March 1st, 2008 the functional scope needs to be locked down and targeted for optimal success for the Fall election.
3. SCORE project team must be restructured and enhanced with additional resources focused on field support, change management, and network support.
4. All Counties Adopt the Voter Registration Function. Counties no longer use legacy systems for voter registration. This meets HAVA compliance by achieving a state-wide (validated) repository of voter registration data.
5. SCORE Election Management Functions are deployed to all counties per the project schedule with an emphasis on adoption by the counties.
6. Given specific timelines and defined acceptance criteria, select counties can qualify to use their legacy systems for managing election functions. They will use the voter registration data from SCORE to feed election systems.

This strategy aggressively deploys SCORE to all counties for all SCORE functions – but allows a realistic back-out plan for "qualified" counties. This strategy is intended to reduce the number of qualified counties deploying the legacy system solution.

Option 2 SCORE with Select Legacy Contingency

High Level View

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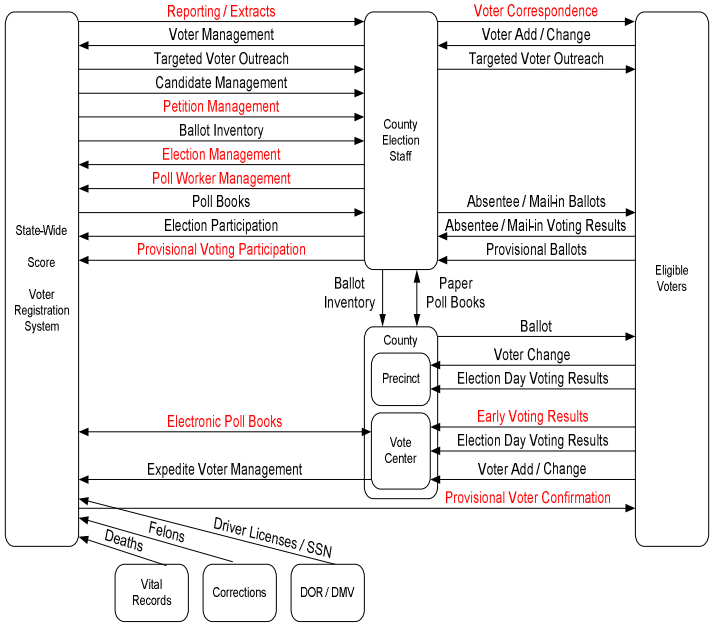
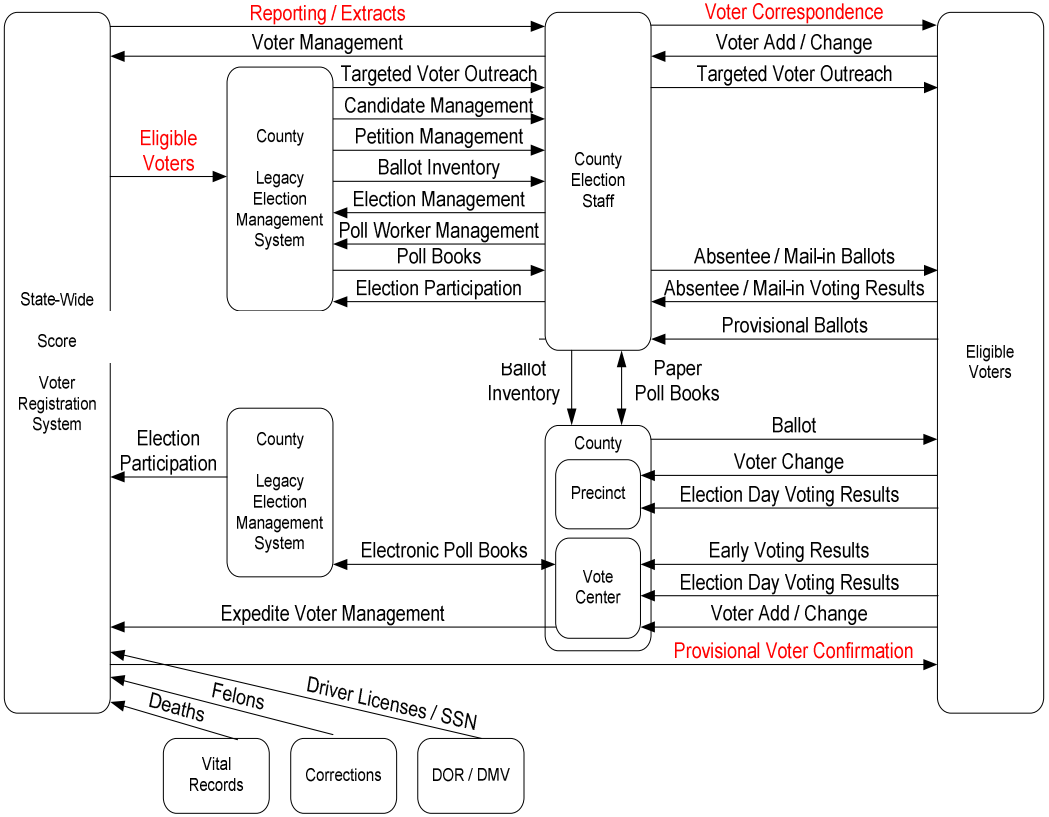


Most counties will use the SCORE system for full election system functions. (OPTION 1)

Qualified Counties will integrate SCORE VR data with their election management systems.



Option 2 SCORE with Select Legacy Contingency

Understanding this Option

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Scenario

- All counties use Score as their Voter Registration (VR) master source of eligible voters.
- Qualified counties use their legacy elections management (EM) system to execute the '08 election, and the remaining counties continue to use Score for VR and EMS functions.

Concept

- Selected (qualified) counties will be allowed to use legacy systems.
- All voter data is entered into Score and exported to existing legacy systems for these qualified counties.
- Counties synchronize voter data "as needed" during the election window.
- Election participation history is uploaded into to Score from Legacy after the election.

What Has to Happen

- All counties must migrate/adopt SCORE VR.
- State-wide voter data merged for duplicate records.
- Counties only use SCORE for VR; SCORE must work.
- Qualified counties need to be identified.
- County based-IT and Legacy System staff need to be engaged
- Legacy system IT support and licensing may need to be extended for qualified counties.
- Processes for how counties (if necessary) are going to sustain parallel operations effectively must be defined.
- Processes for data synchronization must be architected, designed, developed and tested.
- Data audit processes built for integrity checks

Benefits

- HAVA Compliant
- SCORE deployed for most counties with VR function fully deployed.
- Could reduce field support staff qualified counties use legacy.
- Allows counties to have an out to a trusted elections system
- Solution can be leveraged across legacy system platform – Votec, Sequoia, etc…

Risks

- Impact on county resources to design, test legacy interfaces.
- More counties that go to legacy will have longer term impact to SCORE project deployment.
- Customization by counties and their vendor legacy systems.
- Doesn't mitigate current SCORE performance issues.
- Increases QA cycles to validate data.
- Doesn't mitigate transactional load for voter registration functions.

Costs

- Extension of Saber development support.
- Additional Staff – Field Support, Change Management, Network
- Continued legacy licensing and operational costs (County)
- Costs for legacy systems changes pushed to counties – moderate costs (County)

Staff

- Estimated additional 13 FTE required to support the deployment.
- Realignment of SOS management team
- Additional county resources required for legacy integration
- Continuance of Saber through October to support legacy integration.

Option 2 SCORE with Select Legacy Contingency

How does this Option Address the Fundamental Issues?

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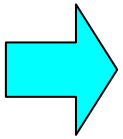
- Counties do not see the benefit of this deployment.
- While the Secretary of State (SOS) has adopted a centralized system for managing the election lifecycle – the State has not transformed the organization necessary to support this model.
- There is insufficient election stewardship and focus on county support at the SOS.
- County Election Capacity – counties are struggling with the additional workload , yet are the critical components to adoption of the system. Some counties are experiencing adoption issues because the change management resources that are required by the State are not being provided.
- Some counties will be dependent upon Score for their registration and election functions. Therefore SCORE must be deployed as planned.
- Some counties have legacy solutions they would rather use for the election management functions but are not sure when or if they can use these systems and how they would integrate with SCORE.



- SOS SCORE team is restructured to focus more on county adoption and change management.
- Field Service is deployed to help counties adopt to the new system.
- The benefits are clearly communicated through the Adoption Team and reinforced.
- The new organizational model allows SOS to be more responsible for the system in the future.
- Counties have a higher touch and better support for adoption.
- VR functions are deployed fully and the State is HAVA compliant.
- Counties have a better chance for adopting the SCORE system – thus reducing other overhead required to maintain legacy infrastructure.
- Counties with no other option but to adopt SCORE have a better chance of success.
- Counties can qualify for EMS exception to allow them to use legacy systems for their election operations.

SCORE adequately supports the law of Precinct Level Reporting

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During the course of the assessment, Precinct Level Reporting (PLR) and the ability of SCORE to support this requirement was evaluated. Here is a summary of the findings.

- By law the State of Colorado must be able to tabulate and report on the election results by precinct.
- The SCORE system does not track or manage election results. Tabulation results are tabulated & maintained outside the SCORE system in a separate tabulation system.
- SCORE provides functionality for defining precincts and managing ballots (with unique IDs) for each election.
  - Simple and complex precincts can be supported
  - A precinct may be considered complex if it contains special districts, municipalities or other attributes that require additional ballot styles
- The reports module can produce any/all given ballot styles for any/all precincts defined within the county.
- All ballot styles for elections can be exported and used for voting and tabulation systems.
- The assessment of precinct reporting functionality by SCORE was not part of this assessment and a plan to outline specifically how it will be addressed should be part of the action plan.

Precinct Reporting 3rd Party Integration

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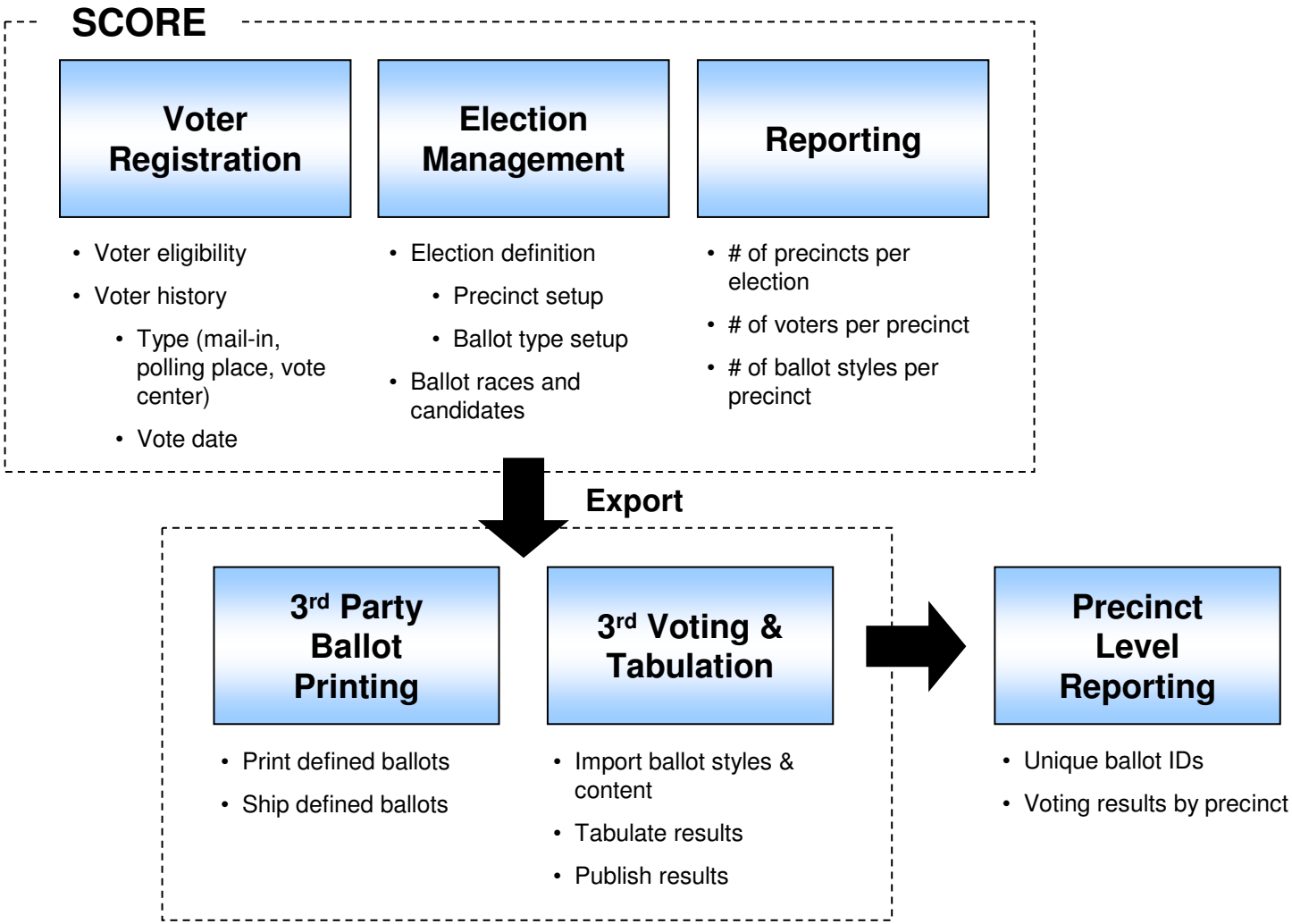
The SCORE system defines and publishes the precinct ballot styles to 3rd party printing shops or voting / tabulation machines. The tabulation software maintains the results required for precinct level reporting.



Summary Action Plan

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Organization

- Staff the project team with additional FTE to support the adoption for the counties, including:
  - Full Time Business Sponsor
  - Adoption Manager
  - Mock Election Coordinator
  - Change Management Staff
  - Field Support Operations (Saber)
  - Network Operations
  - Additional Data Architecture (Saber) for contingency
- Establish more formal, structured communication with the counties.
- Restructure the CCB so it is more focused on strict scope management.
- Regionalize change management
- Enable “high touch” deployment for the counties.

Network

- Define and establish a network SWOT team to identify and mitigate existing network connectivity issues.
- Coordinate and prioritize DoIT / MNT resources to support the network SWOT team.
- Certify network architecture (Saber) in conjunction with testing.
- Identify network contingency operations.

Contingency

- Contingency for each type of scenario needs to be updated.
- Qualifications for counties that are not going to adopt SCORE EMS functionality need to be determined immediately.
- Counties need to “buy in” to the contingency operation as a last resort – not as an immediate option.
- Contingency expectations need to be clearly defined and communicated to counties.

Funding

- Funding options for extending the contract and hiring of contracted and permanent staff is first priority.
- The business case for this increased funding needs to be developed and communicated.
- All funding options should be explored and then if funding can not be appropriated, appropriate contingency needs to be adopted.

Option Blueprint

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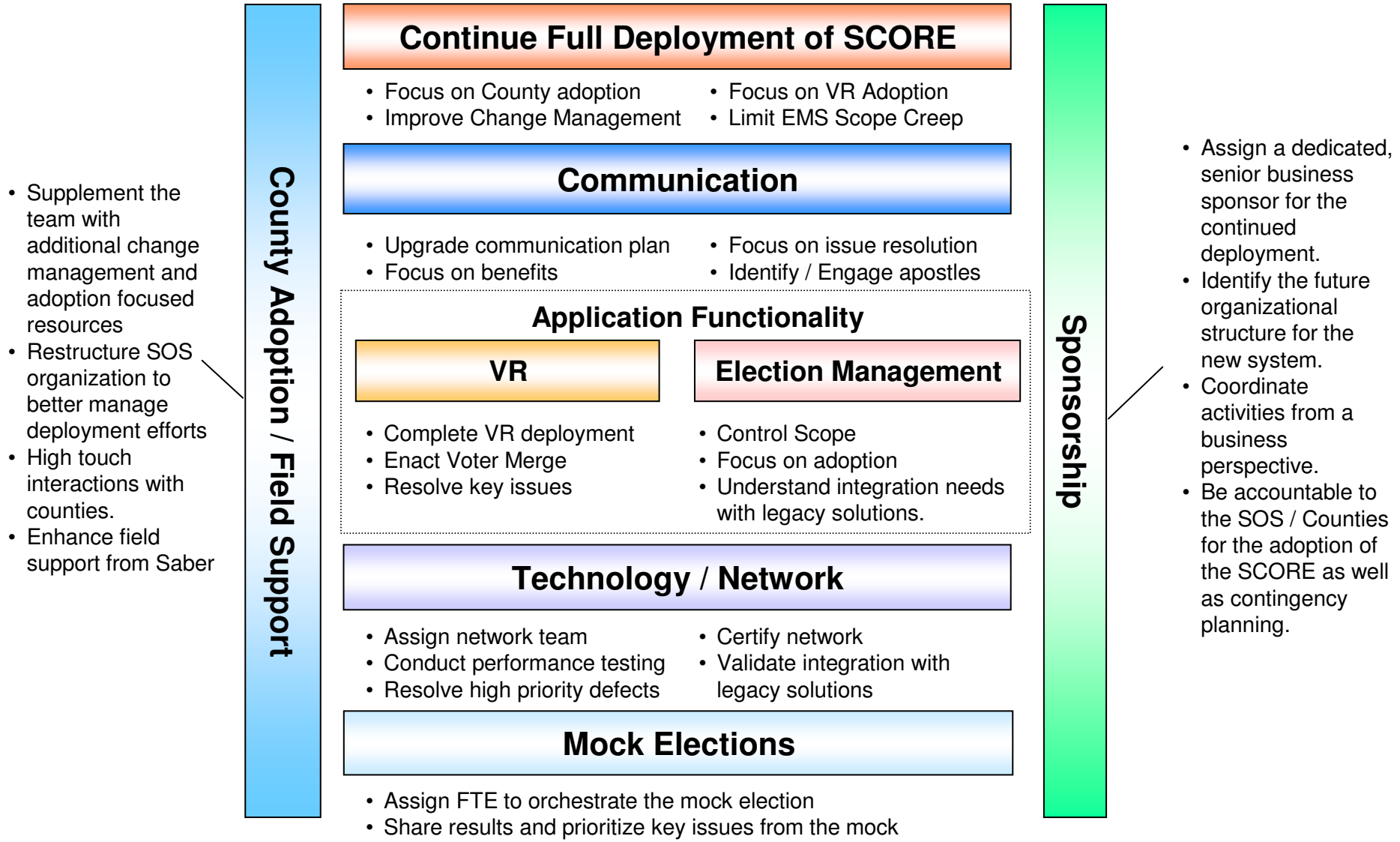

- Supplement the team with additional change management and adoption focused resources
- Restructure SOS organization to better manage deployment efforts
- High touch interactions with counties.
- Enhance field support from Saber

- Assign a dedicated, senior business sponsor for the continued deployment.
- Identify the future organizational structure for the new system.
- Coordinate activities from a business perspective.
- Be accountable to the SOS / Counties for the adoption of the SCORE as well as contingency planning.

Will the implementation succeed if the State continues as planned without making changes?

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- There is a high risk that counties will not use the system due to adoption issues.
- Without full adoption by the counties, it is likely meeting the minimum HAVA compliant standard of the single source VR component would be at risk.
- Network issues will continue to be a problem and will likely not be resolved given the current organization, placing SCORE at risk even if the counties adopt.
- Adoption risks for counties that depend upon the full suite of Election Management (EMS) functions would be significantly higher.
- SOS may not be ready to support the deployment after the SCORE team departs the project.
- Counties tensions will continue to escalate and counter productive activity could result in a higher risk of implementation failure.
- Bottom line: Current project trajectory without change carries significant risks that should be aggressively mitigated.

As noted in this report, the Secretary of State has initiated some of the recommendations in this report.

Option 2 SCORE with Select Legacy Contingency

Understanding the Option

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1. Continue Deployment
2. Enhance the Organization
3. Resolve Network Issues
4. Control Scope (CCB)
5. Formulize Mock Elections
6. Define Qualifications for Legacy EM Exceptions

Continue Deployment

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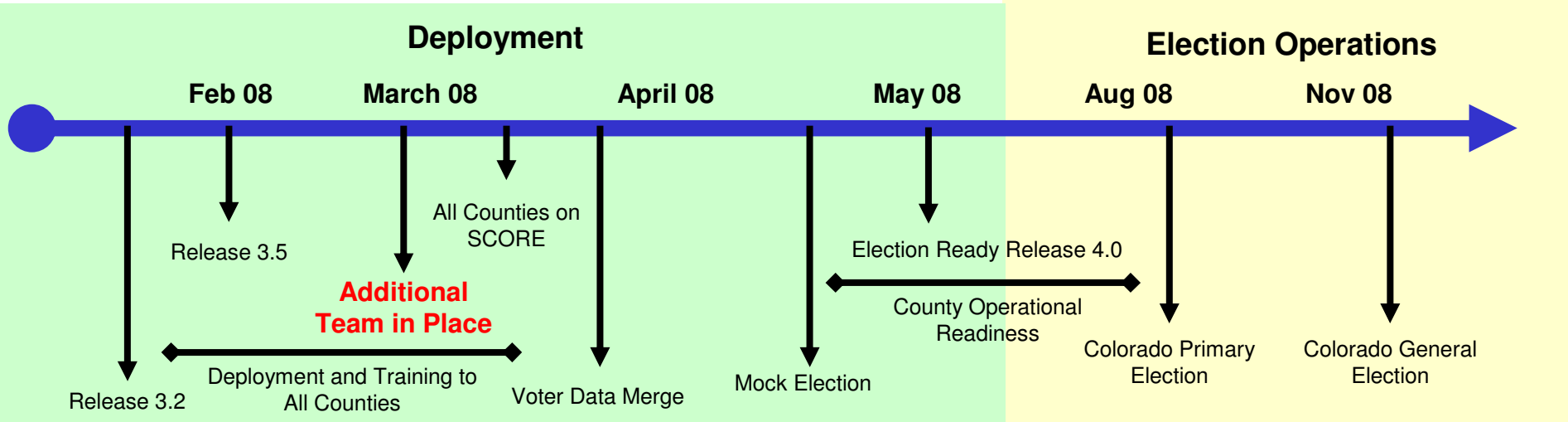
The SCORE deployment should continue as planned concurrent to the suggested recommendations.



- Counties are currently in the midst of deployment.
- 35 counties has been deployed to SCORE.
- All counties will be trained, deployed on SCORE by end of March.
- Voter registration data merge will take place once all counties validate data.
- Performance testing will be conducted in March to validate the election management functions and concurrent load capabilities.
- There is a Mock Election scheduled in April – this is a dress rehearsal of key SCORE business functions and is not meant to stress the system.
- Additional team will supplement existing communication, change management, UAT and regression testing

- August Primary
- November General Election
- Federal Reporting Requirements after the Election

Enhance the Organization

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The focus is on enhancing the current SCORE team and SOS capabilities to better support the adoption of the system. These recommendations are critical for even the VR deployment of SCORE.

Steering Committee

- Involve OIT or member from Governor's Office through Election

Business Sponsor

- Assign full time business sponsor for this project that has elections expertise and direct responsibility for owning the solution upon deployment.

Adoption Manager and Change Mgmt

- County adoption expertise is needed. Additional 2 to 3 resources to help the counties understand and adopt SCORE.
- County work around expert for non-EMS solutions.

Network

- Network team to identify and resolve network issues.
- Saber certifies network solution.

Field Support

- Additional and immediate field support to help counties with functional and technical expertise.

Mock Election Manager

- Strictly Responsible for coordination of the Mock Election

Saber Help Desk

- Continue to track and manage SPIRIT tickets

Enhance the Organization: Project Team Structure

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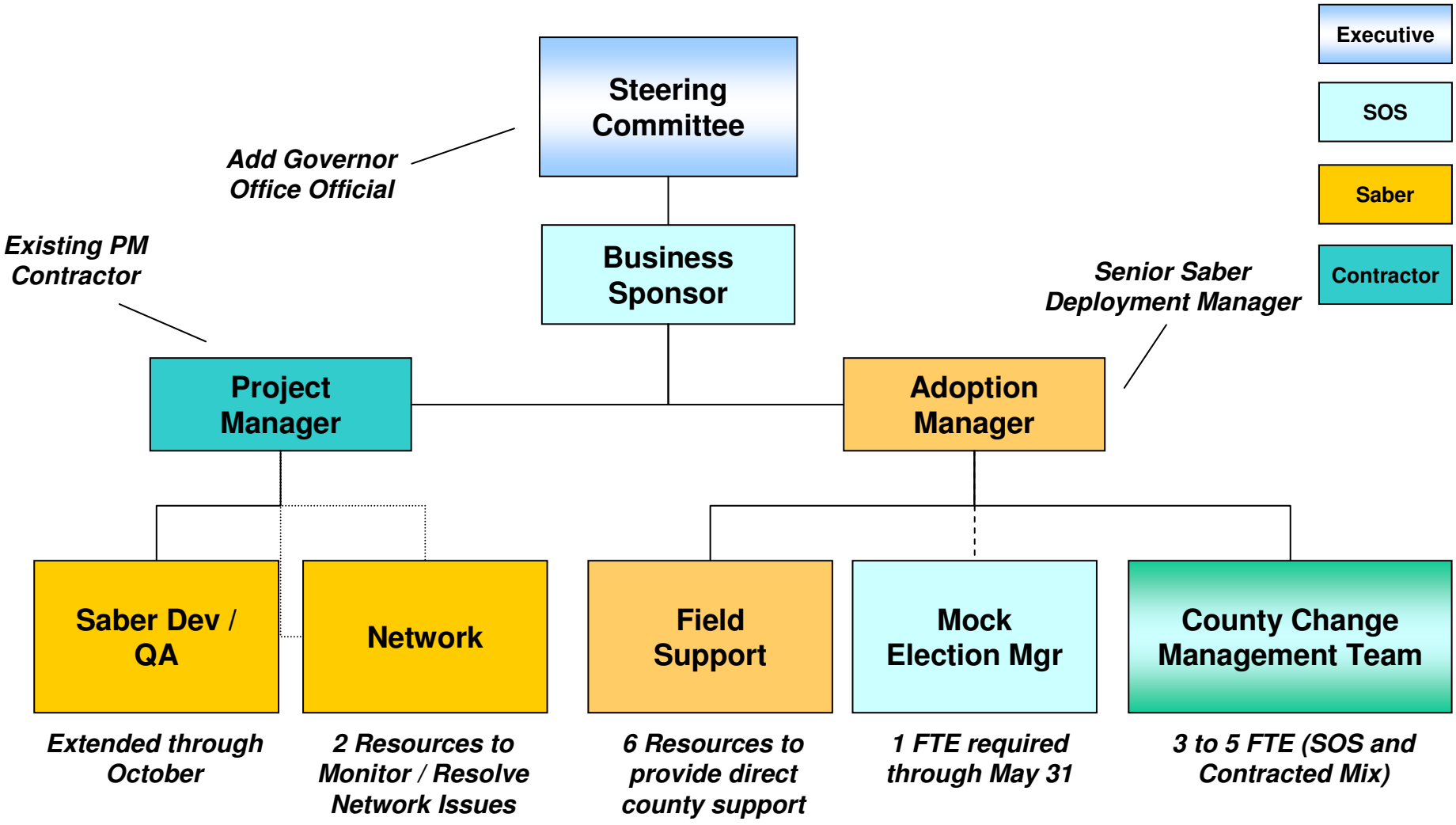

Enhance the Organization: Recommended Roles & Responsibilities

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Role	Responsibilities	Qualifications	Duration
Business Sponsor	Act as primary business advocate for the adoption of SCORE	• SOS • SCORE • Elections	Immediate – 12/31/08
Adoption Manager	Charged with adoption of SCORE in whatever capacity necessary to support Fall Elections 2008	• SOS • SCORE • County Elections • Change Management • Communication	3/1/08 – 12/31/08
County Change Manager (CCM)	• Single point of contact for defined list of counties • Manage and coordinate FSG and Network teams • Facilitate SCORE and legacy integration where necessary • Coordinate and manage cross county user groups • Prioritize county change requests	• Change Management • Project Management • Communication • Basic SCORE Expertise	3/1/08 to 11/30/08
Mock Election Manager	• Plan and manage mock election process • Work with CCMs to execute mock elections	• SCORE Proficiency • County Elections	3/1/08 to 6/30/08
Field Service Group	• Develop best practices • Deliver targeted training and support to counties	• SCORE • Training • Communication	3/1/08 to 12/31/08
Network Service Team	• Conduct statewide assessment • Identify problematic areas • Mitigate issues and define solutions for problem areas	• Network & Infrastructure	3/1/08 to 12/31/08

Score Deployment – CM Changes County View

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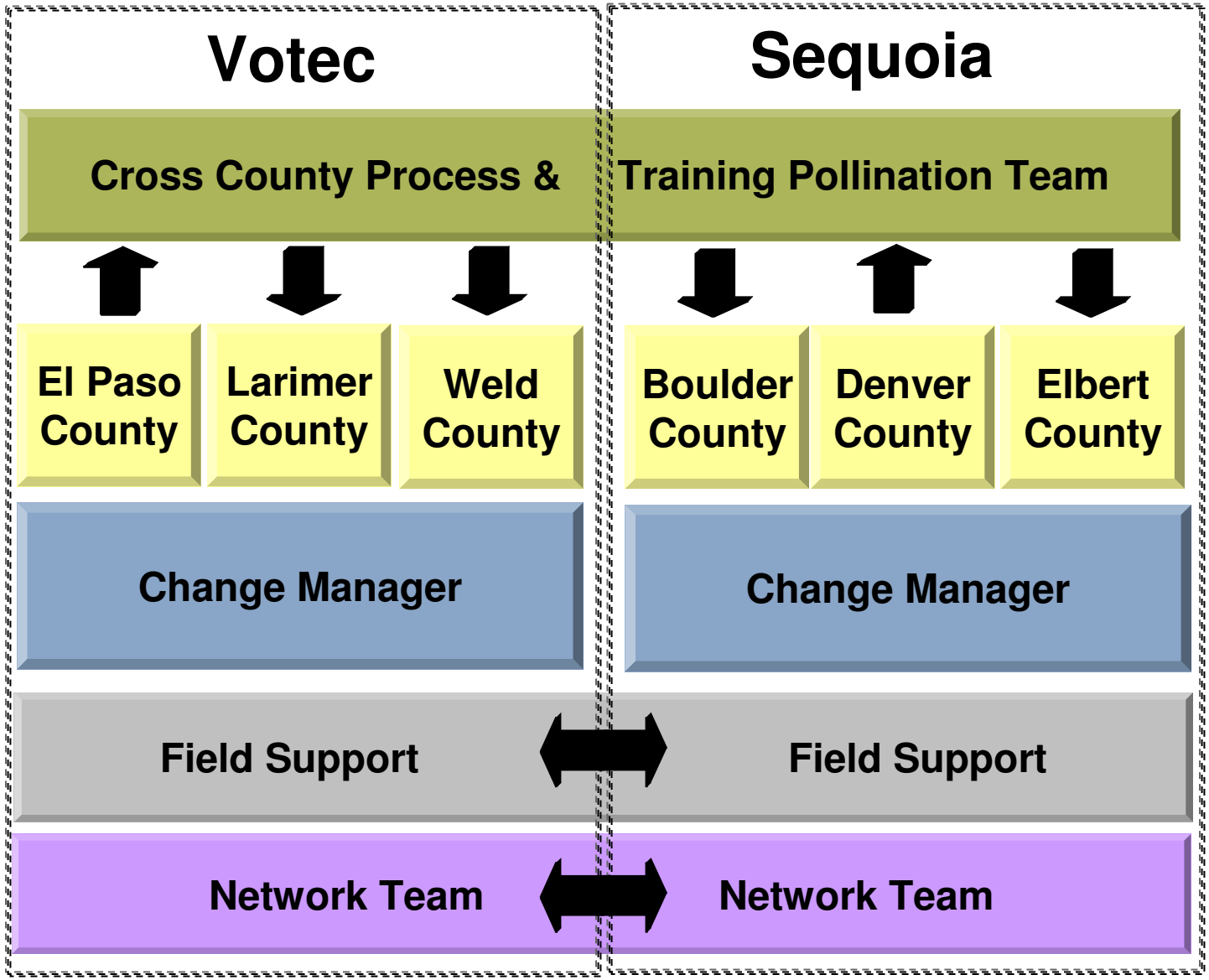

Resolve Network Issues: Score Deployment – Network Issues

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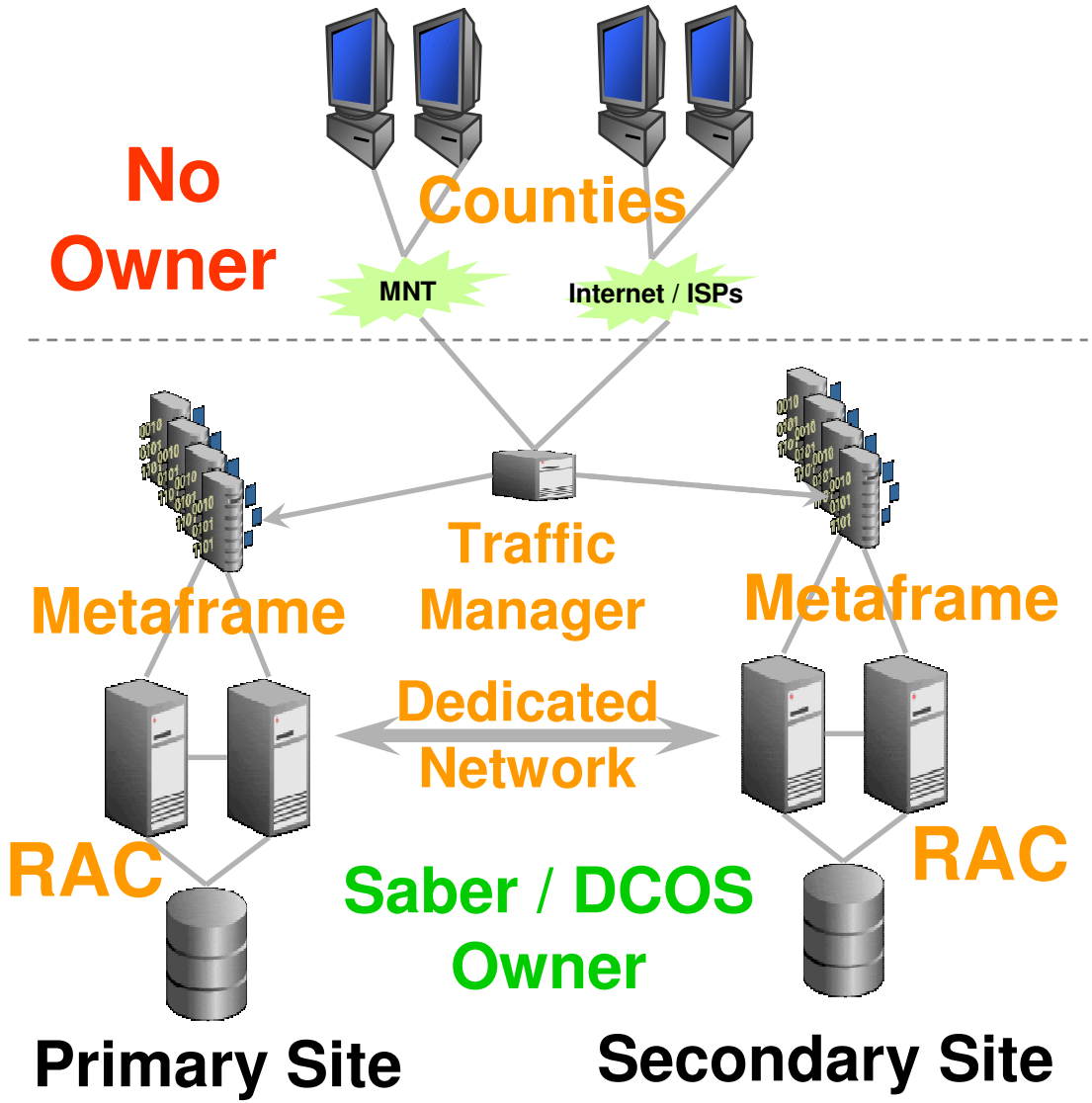

Network Issues

- No clear owner of last mile to counties
- 40% of counties use MNT; 60% use local ISPs. 7-8 different ISPs used by counties within Colorado
- Citrix requires constant network connection.
- Intermittent network latency from local ISPs. Currently impacting 6 counties of the 26 counties live on Score.
- Little or no ISP redundancy for counties in the event of ISP outages. Could be down for 24-48 hours
- MNT network not validated for redundancy to Score servers

Client Workstation Issues

- Installation instructions periodically do not work for some workstations.
- Issues with Score software recognizing scanners and scanner drivers
- Not all counties have peripheral equipment on-site, installed and tested despite SOS Site visits and county sign-offs on installations.
- No documented list of non-equipment needed for Score – paper stock, mail labels, etc..

Resolve Network Issues: Network SWOT Team

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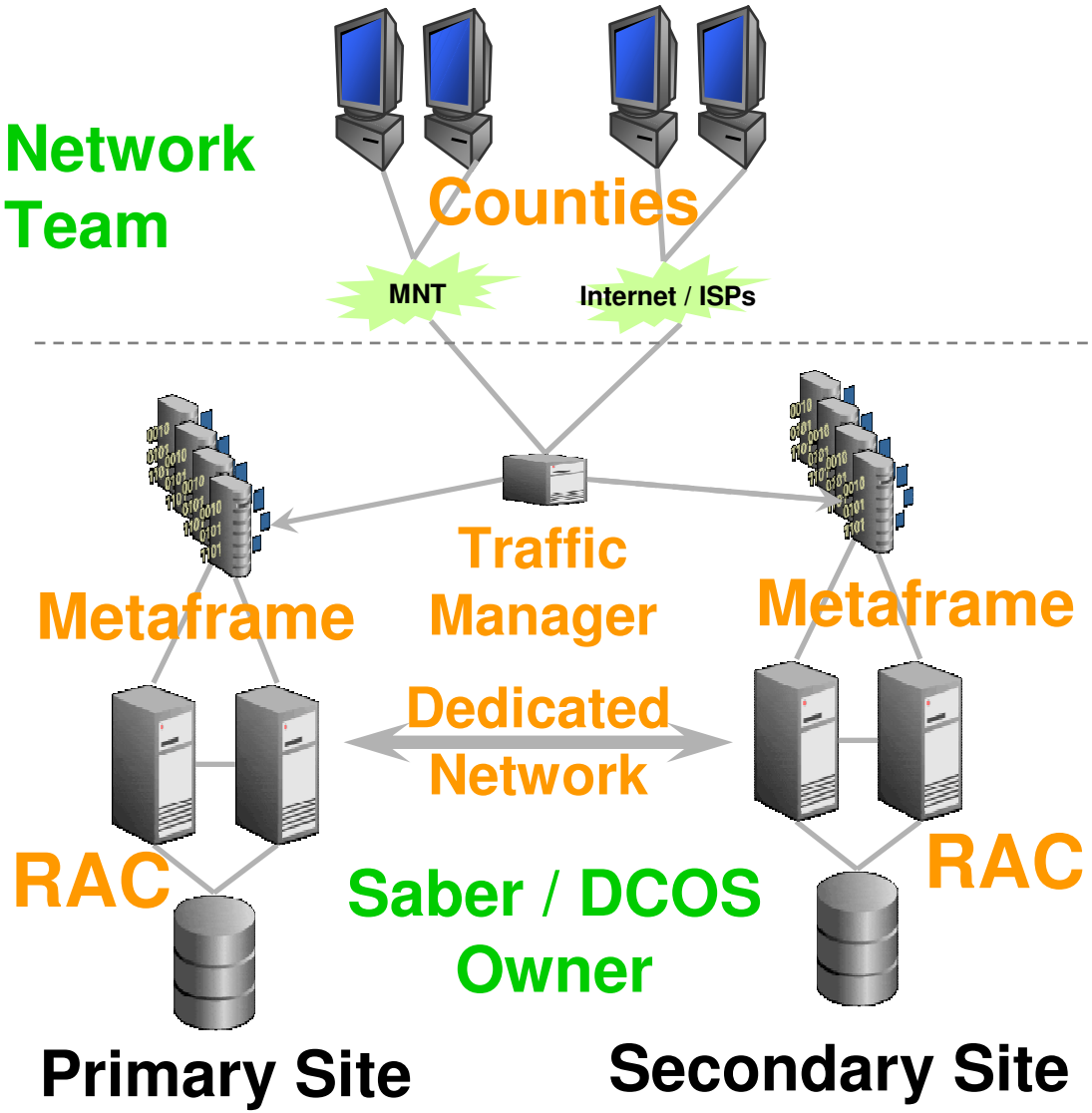

Form a Network Team that is responsible for the following:

Network Responsibilities

- Owns county connectivity in the last mile
- Work with local county IT to improve network monitoring in counties with network issues
- Negotiate Service Level Agreements (SLA) with ISPs (that provide SLAs) in counties with network issues
- Work with ISPs to reduce network hops to Score environment
- Work with DoIT to validate redundancy in the MNT network
- Support network issues identified in load tests
- Work with local county IT staff to develop network DRA plans in critical counties

Workstation Responsibilities

- Modify installation instructions as needed
- Resolve scanner issues in counties
- Provide tier-2 support for local IT workstation installation issues

Control Scope (Change Control Board): Sample Process

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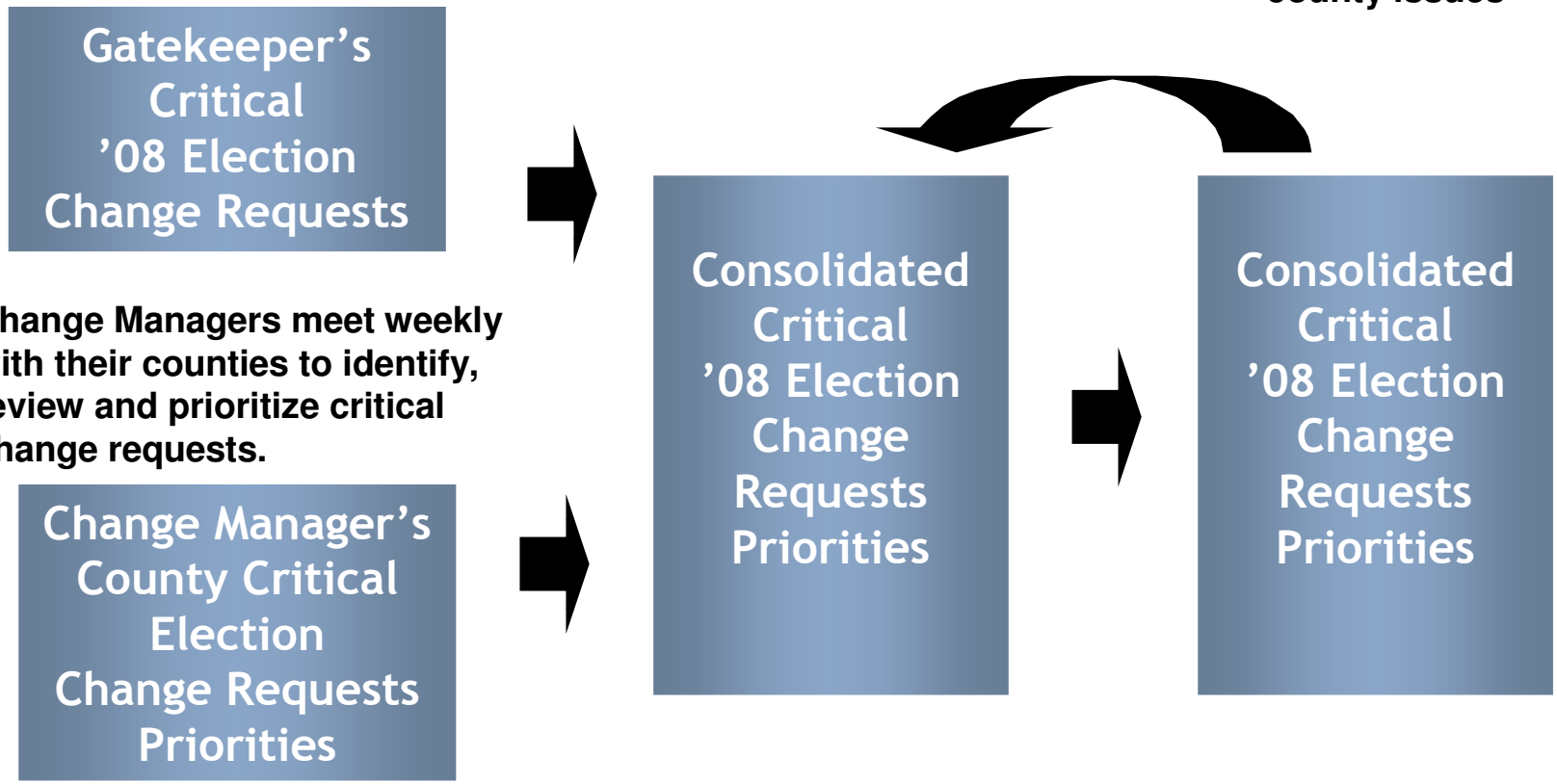
1. Each Change Request is Reviewed by Gatekeeper. Gatekeeper identifies critical '08 bugs, enhancements. Recommends deferral for all non-critical items.

2. Change Managers meet weekly with their counties to identify, review and prioritize critical change requests.

3. Gatekeeper and Change Managers meet weekly to discuss and agree upon critical '08 change request priorities

4. Formal CCB held with County stakeholders weekly to discuss critical '08 change request priorities and county issues



Formulize Mock Elections

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- Mock elections need to be a dress rehearsal for election business functions.
- Will be conducted with a full load set to test key EMS functions. This will be a simulation of the election.
- Expectations with counties need to be fully set – participation with the most counties possible is necessary.
- Dedicated FTE is recommended to define and manage the mock election process with the counties.
- Mock Election Manager should also focus on communicating results and resolving issues, gaps with change management and field support teams.

Qualification / Exceptions: How and When should a County be allowed to use Legacy EMS?

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We recommend the following approach for qualifying counties to use legacy EMS systems:

- SOS and SCORE team work next week to identify potential candidates that may be interested in this option.
- SOS and the Adoption team should agree upon key evaluation criteria as well as milestones for enabling the contingency option:
  - Full release to the counties (End of March)
  - Mock Election (April)
  - Election Release (4.0 in May).

Option 2 SCORE with Select Legacy Contingency

Estimated Costs

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The following are estimated costs for this option. County integration costs (including contingency costs) are not factored into this model.

Role	Start	End	Weeks	FTE Number	Projected Hours	Rate	Total Cost
Change Manager	3/1/08	11/30/08	39	3	4680	150	$ 702,000
Network SWOT	3/1/08	11/30/08	39	2	3120	125	$ 390,000
Mock Election Manager	3/1/08	6/30/08	16	1	640	140	$ 89,600
Field Support	3/1/08	12/31/08	40	6	9600	150	$ 1,440,000
Adoption Manager	3/1/08	12/31/08	40	1	1600	150	$ 240,000
				13			$ **2,861,600**

In addition, extension of the Saber development and QA team is likely to run another 6 months at an additional expense of $600k.

The SOS and SCORE vendors will need to work on estimates and updated contracts to support this extension.

What About the Other Options?

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Options	Option 3 **SCORE with Full Legacy Contingency** SCORE used for registration / ALL Counties use legacy Election Management.	Option 4 **SCORE as State Master List** Score used as bottom up central VR system / ALL Counties use legacy Election Management.	Option 5 **Use State Master List** Leverage State Master List as central voter registration source
What has to Happen?	• All counties have to fully adopt SCORE VR functions. • All county legacy systems need to work	• All counties' legacy systems must work. • Design of HAVA solution needed • Changes to Score VR validation	• All counties' legacy system needs to work. • Design of HAVA solution needed • Changes to ML VR validation
RISK	**High**	**High**	**Moderate**
HAVA Compliant	**Yes**	**No**	**No**
Benefits	• Allows flexibility for counties • HAVA compliant	• Allows counties to use legacy systems.	• Allows counties to use legacy systems.

Option 3

- Still requires full deployment of SCORE VR which requires the field support, mhange management functions (albeit less)
- Counties that have no legacy options will be forced to return to a legacy solution.
- Large counties like El Paso and Denver will have to make a reversion to a legacy system despite general acceptance of the SCORE system.
- Significant county expense in licensing legacy systems and large bandwidth impact on county election staff to support integration and testing.
- HAVA Compliance risk due to amount of data migration management.
- Significant data architecture expertise required from Saber.
- Change management costs are greater as they are extended into 2009.
- Results in the Saber contract being extended for longer period.
- Estimated costs $4M to $5M (not inclusive of county costs)

Option 3 - SCORE with Full Legacy Contingency

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Scenario

- All counties use Score as their Voter Registration (VR) master source of eligible voters.
- All counties use their legacy elections management system (EMS) to execute the '08 election.

Concept

- All county voter data is entered into Score and exported to legacy systems.
- Counties synchronize data as needed in the election window
- Election participation exported from legacy system to Score after election.

What Has to Happen

- All counties need to migrate to Score for VR.
- State-wide voter data needs to be merged for dups.
- Local IT and Legacy System staff need to be engaged
- Legacy system IT support may need to be extended.
- Processes for how counties are going to sustain parallel operations effectively needs to be defined.
- Processes for data synchronization must be designed, developed and tested.
- Data audit processes built for integrity checks

Benefits

- HAVA Compliant
- Allows counties to have an alternative to their legacy systems
- Solution can be leveraged across legacy system platform – Votec, Sequoia, etc…

Risks

- Impact on county resources to design and test solution
- Customization by counties of their legacy systems.
- Does not fully mitigate existing Score II issues.
- Does not impact Score II transactional load for voter registration functions.

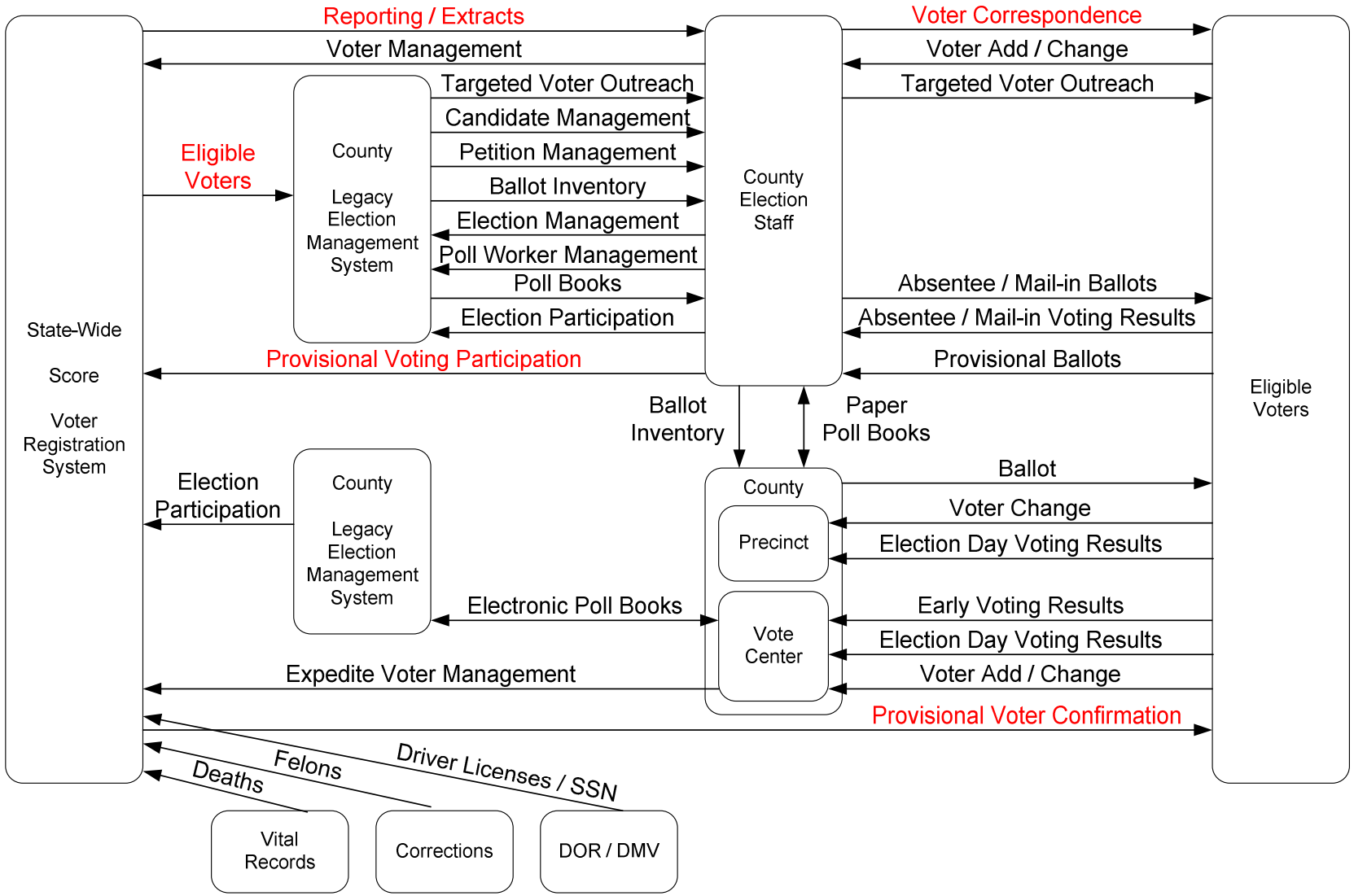
Costs

- Continued legacy licensing and operational costs
- Costs for legacy systems changes pushed to counties – moderate costs
- Additional Saber costs (change orders)

Staff

- High use of County election staff to design and test solution
- High use of County IT / Legacy System Vendor
- Low use of Saber resources

Option 3 - SCORE with Full Legacy Contingency



What About the Other Options?

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What has to Happen?	• All counties have to fully adopt SCORE VR functions. • All county legacy systems need to work	• All counties' legacy systems must work. • Design of HAVA solution needed • Changes to Score VR validation	• All counties' legacy system needs to work. • Design of HAVA solution needed • Changes to ML VR validation
RISK	**High**	**High**	**Moderate**
HAVA Compliant	**Yes**	**No**	**No**
Benefits	• Allows flexibility for counties • HAVA compliant	• Allows counties to use legacy systems.	• Allows counties to use legacy systems.

Option 4

- Massive architecture changes to allow a bottom-up architecture, resulting in a complete redesign of the existing architecture.
- HAVA compliance would not be feasible within the timeline. SOS and counties would face possible DOJ impact.
- County deployment activity would be derailed and investment on the current implementation would be lost.
- Counties without legacy systems will be forced to go back to a legacy solution.
- The business processes and policies to support the bottom-up processes would need to be defined.
- Would likely create turmoil at the county and state level, and eliminate change for near term HAVA compliance.
- Counties would have significant infrastructure costs to support the bottom up approach – including working on standard data for integration purposes.
- Estimated cost would be $5M+ with no return on SCORE II investment.

Option 4 - SCORE As State Master List

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Scenario

- All counties use their legacy voter registration (VR) and election management systems (EMS).
- Score used as bottoms up eligible voter master much like the current state master list.

Concept

- All county voter data is entered into legacy system in pending state and exported to Score for validation.
- Score validates against HAVA rules and messages legacy system of results.
- Election participation exported from legacy system to Score after election.

What Has to Happen

- Data architecture / conversion needs to be built
- Voter validation processes into Score need to be designed, developed and tested.
- Saber has to do middleware transformation of data and messaging functions.
- State-wide training and change management for VR processing of pending records
- Elections has to create, approve and communicate policies

Benefits

- HAVA Compliant
- Allows counties to have an alternative to use a legacy system.
- Improved data entry speed for VR.
- Mitigates most Score deployment risks
- Minimal CM and training required

Risks

- Adds new VR exception process.
- Longest architect, design and development cycle.
- Customization by county / legacy system.
- Contractual impacts with Saber
- Business process and reporting needs to be agreed upon for HAVA compliance.

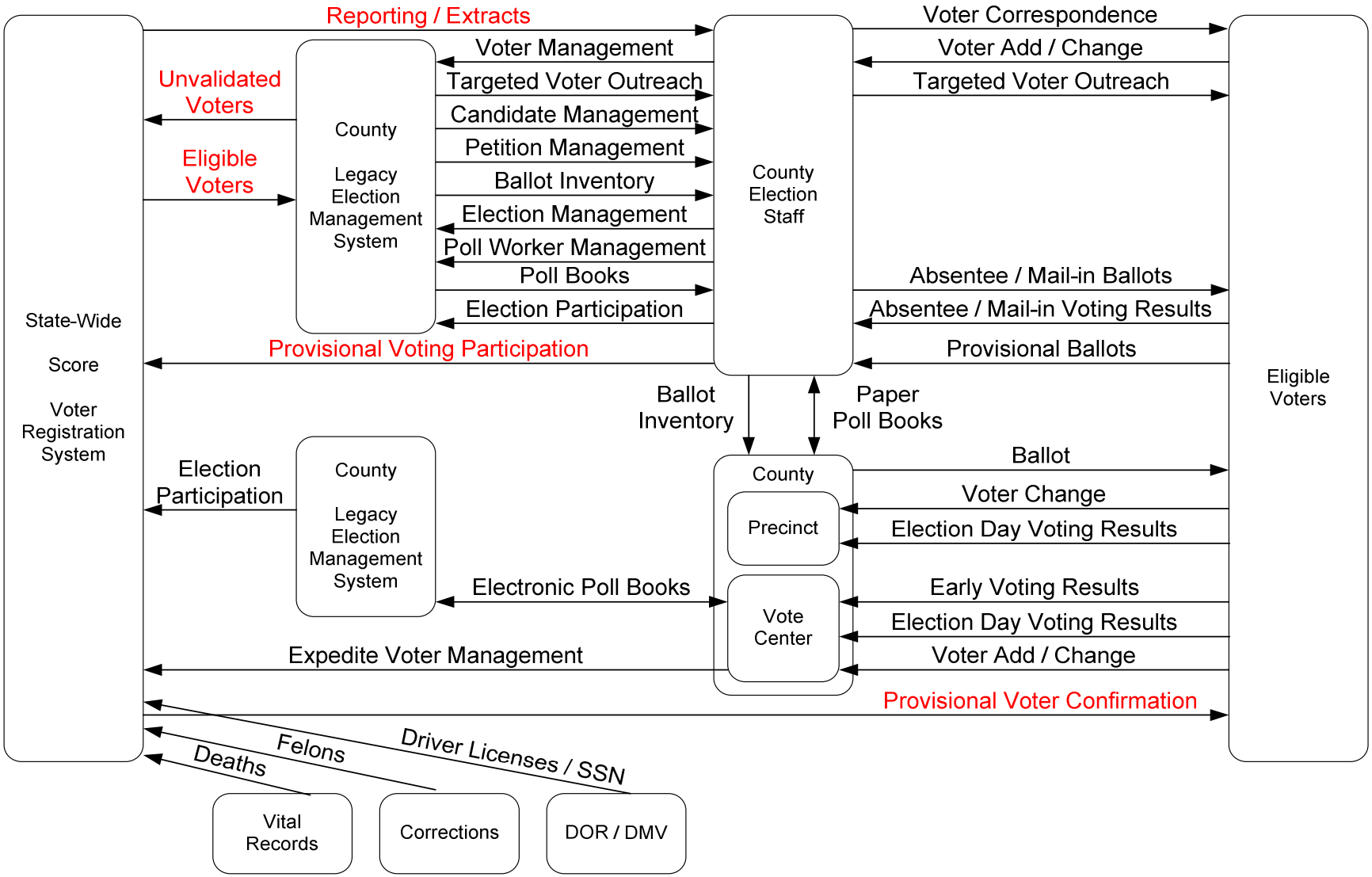
Costs

- Continued legacy licensing and operational costs
- Costs for legacy systems changes pushed to counties – moderate costs
- Additional Saber costs (change orders)

Staff

- High use of County election staff to design and test solution
- High use of County IT / Legacy System Vendor
- High use of Saber resources

Option 4 - SCORE as State Master



What About the Other Options?

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Options	Option 3 **SCORE with Full Legacy Contingency** SCORE used for registration / ALL Counties use legacy Election Management.	Option 4 **SCORE as State Master List** Score used as bottom up central VR system / ALL Counties use legacy Election Management.	Option 5 **Use State Master List** Leverage State Master List as central voter registration source
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RISK	**High**	**High**	**Moderate**
HAVA Compliant	**Yes**	**No**	**No**
Benefits	• Allows flexibility for counties • HAVA compliant	• Allows counties to use legacy systems.	• Allows counties to use legacy systems.

Option 5

- Requires SML to have data validation capability – in order to build this, it would be a replication of the existing SCORE system.
- Logic between the SML and legacy systems would need to be enhanced.
- The current SML architecture is not sufficiently stable to support HAVA demands.
- The current SML architecture would need to be replaced with newer generational code and infrastructure.
- "As is", SML would likely not be considered HAVA compliant as would require manual processes and/or IT development to meet compliance requirements.
- Would derail the SCORE project in the short term – increasing the Saber contract and associated costs.
- Should be considered as only the final fallback option.
- Estimated cost would be $3M+.

Option 5 – State Master List

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Scenario

- All counties use their legacy voter registration (VR) and election management systems (EMS).
- The state master list is used as bottoms up eligible voter master. Score is not used.

Concept

- All county voter data is entered into legacy system in pending state and exported to the state master list for validation.
- The state master list validates against HAVA rules and messages legacy system of results.

What Has to Happen

- The current state master list is old and not HAVA complaint. Decision made to build new process to meet HAVA restrictions.
- Voter validation processes into new state master list need to be architected, designed, developed and tested. New messaging architecture needed for validation errors.
- State-wide training and change management for VR processing of pending records
- Elections has to create, approve and communicate policies

Benefits

- Partially HAVA Compliant
- Allows counties to have an out to a trusted EMS and VR system. Improved data entry speed for VR.
- Mitigates Score deployment risks
- Minimal CM and training required

Risks

- Adds new VR exception process.
- Long architect, design and development cycle.
- Customization by county / legacy system.
- Contractual impacts with Saber
- Business process and reporting needs to be agreed upon for HAVA compliance.

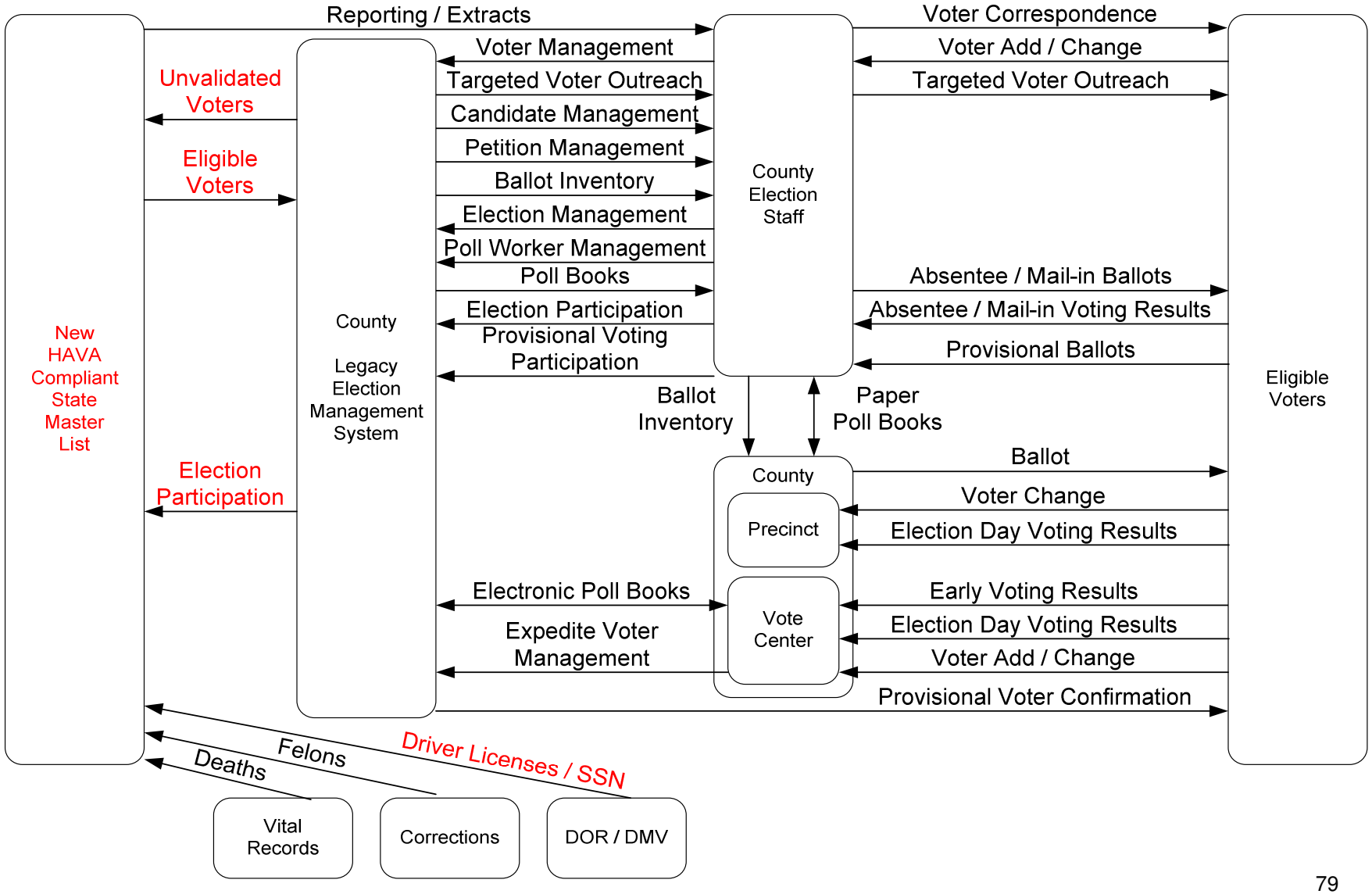
Costs

- Continued legacy licensing and operational costs
- Costs for legacy systems changes pushed to counties – moderate costs

Staff

- High use of County election staff to design and test solution
- High use of County IT / Legacy System Vendor
- No use of Saber resources

Option 5 – State Master List



Action Plan

northhighland
Highland Worldwide

Organization

- Staff the project team with additional FTE to support the adoption for the counties, including:
  - Full Time Business Sponsor
  - Adoption Manager
  - Mock Election Coordinator
  - Change Management Staff
  - Field Support Operations (Saber)
  - Network Operations
  - Additional Data Architecture (Saber) for contingency
- Establish more formal, structured communication with the counties.
- Restructure the CCB so it is more focused on strict scope management.
- Regionalize change management
- Enable “high touch” deployment for the counties.

Network

- Coordinate a network SWOT team to identify and mitigate existing network connectivity issues.
- Coordinate and prioritize DoIT / MNT resources to support the network SWOT team.
- Certify network architecture (Saber) in conjunction with testing.
- Identify network contingency operations.

Contingency

- Contingency for each type of scenario needs to be updated.
- Qualifications for counties that are not going to adopt SCORE EMS functionality need to be determined immediately.
- Counties need to “buy in” to the contingency operation as a last resort – not as an immediate option.
- Contingency expectations need to be clearly defined and communicated to counties.

Funding

- Funding options for extending the contract and hiring of contracted and permanent staff is first priority.
- The business case for this increased funding needs to be developed and communicated.
- All funding options should be explored and then if funding can not be appropriated, appropriate contingency needs to be adopted.