Department of Revenue
IT Systems Replacement, Division of Motor Vehicles

Three years ago, the Department established a strategic plan for the DMV. One of the main goals was to reduce wait times for our customers. Our four year goal is to "Reduce wait times for Driver's License (DL) customers from an average of 60 minutes 65% of the time in FY 14 to an average of 15 minutes 80% of the time in FY 18." We have three interim goals.

- DL customers are seen within an average of 60 minutes 65% of the time by the end of FY 15 in waitless deployed offices.
- DL customers are seen within an average of 15 minutes 50% of the time by the end of FY 16.
- DL customers are seen within an average of 15 minutes 65% of the time by the end of FY 17.

In order to meet these goals, many things are required. The following is a list of some of the things that have to all occur for the ultimate goal to be achieved.

- Two consecutive on-line renewals. (Implemented 10/31/14)
- Receive funding up to the appropriation. (FY 2015/16 Decision Item pending)
- Implement automated testing in all DL state offices. (Implemented 12/12/14)
- Implement appointment scheduling and queue flow in 31 state DL offices. (15 have been implemented and 16 will be implemented by 12/31/15.)
- Fill new positions approved by the legislature in 2014. (All will be filled by March 2015)
- Implement LEAN efficiencies. (Done. Through LEAN we have been able to reduce the time spent on each transaction by an average of 1 minute. We process approximately 1.2 million document transactions per year.)
- Implement DRIVES.

We are well on our way to achieving this goal but DRIVES is a vital part of our strategy to meet our goal. Although we don't anticipate staff reductions or cost savings, we do anticipate significant efficiencies to be gained by this project which will replace two very antiquated systems with one integrated new one. We are anticipating that this result in significant time savings per transaction, therefore allowing us to serve more customers with the same amount of staff hours.

The Colorado DRIVES RFP, Appendix G, outlines the Service Level Requirements (SLR) for the Colorado DRIVES system. Each potential vendor, as part of their Business Response to the RFP has to outline how they will meet these requirements during the implementation of the system. A selection of the SLRs include:

- System Performance Requirements (database size, growth, record counts)
- Response Time Requirements
- Service Availability (both production and non-production systems)
- System Maintenance
- System Outage Support, to include priority levels, response timelines, reporting and governance

While the vendor has not yet been chosen for the Colorado DRIVES system, CDOR, as a common practice, includes performance standards as part of its contract language. (See attached section from the RFP)

Appendix G – Service Level Requirements

I.   System Performance Requirements
CO DRIVES must meet the Performance Requirements (throughput and Response Time) as specified in this Section. The CO DRIVES transaction rates will grow over the life of the System but the throughput and processing rates are expected to be maintained throughout the life of the system. The following table projects the growth for the CO DRIVES solution.

A. Annual DRIVES Transaction Metrics

This section provides the annual record counts and database sizes for the current DLS and CSTARS systems.
Note: Offerors should assume a 5% annual growth in record counts and database sizing in projecting the capacity and sizing of the DRIVES solution hardware environment.

1. *Annual DLS Record Counts*

The following tables present the core annual activity metrics for the Driver Licensing and Driver Services sections:

Table 15 – Driver Licensing Record Counts

Ref.	Element	2011 Annual Total	2012 Annual Total	2013 Annual Total
DLs – New				
1	Adult	693,591	776,245	717,719
2	Provisional	30,869	30,637	31,728
3	Minor	55,427	54,085	52,620
4	Probationary	2,048	1,695	1,721
	Total	781,935[1]	862,662	803,788
DLs – Renewals				
5	Mail	3,876	5,681	2,382
6	Internet	139,522	174,045	154,042
	Total	143,398[2]	179,726	156,424
Permits – New				
7	New Permits (Adult)	53,501	56,235	60,558
8	New Permits (Provisional)	14,020	14,699	16,996
9	New Permits (Minor)	56,127	55,403	58,662
10	New Permits (CDL)	12,143	12,825	13,126
11	New Permits (Motorcycle)	7,697	7,320	5,859
	Total	143,488		
CDL – New (Total)		47,932	51,408	40,665
ID Cards – New (Total)		118,476	131,686	138,111
Other				
12	Expressed Consent Actions (60-day permits)	11,348	n/a	n/a
13	Reinstatements	39,201	n/a	n/a
14	Administrative Insurance Notice (AIN) (60-day permits)	20	n/a	n/a

Table 16 – Driver Control Records

Ref	Element	2011 Annual Total	2012 Annual Total	2013 Annual Total
1	*Restraint Actions*	216,415	215,109	209,659
2	*Public Contact*	352,016	346,452	350,170
3	*Phone Calls*	407,681	406,655	410,091
Records				
4	Citations	773,256	768,625	717,503
5	PA Received	150,668	153,453	137,798
6	PA Paid	108,707	111,740	94,275

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[1] Number comprises the total number of licenses (Adult, Provisional, Minor, and Probationary Licenses) less the number of Internet renewals (139,522) and mail renewals (3,876).

[2] Sum of Internet and mail renewals for CY 2011.

7	Investigative Accidents	116,428	114,782	105,590
8	Documents Scanned	9,572,356	9,553,847	10,343,170
9	Outgoing Mail	94,255	93,824	89,732
Driver Sanctions				
10	Records Analyzed	66,038	65,281	56,207
11	Record Corrections	8,951	8,676	8,495
12	DLS CDL Processed	18,968	19,669	17,981
13	Express Consents (EC) Received	26,337	24,754	24,875
14	Express Consent (EC) Hearings	12,706	12,218	12,329
15	Interlock Applications Entered	11,508	11,557	12,049
16	Appeals	191	188	118
17	Reinstatement Applications	51,404	51,249	51,207
Call Center				
18	Reinstatement E-mails	13,177	13,053	11,194
19	Phone Calls Answered	274,435	274,156	280,298

2. Database

A snapshot of the database metrics associated with the operation of the overall DLS environment is presented in the following table:

Table 17 – DLS Database Records

Ref	Element	2011 Database Record Count
1	DL-ACC-CARRIER-HITRUN	64,189
2	DL-ACC-DRIVER	7,938,355
3	DL-ACC-FRA	847,589
4	DL-ACCIDENT	1,690,932
5	DL-ADDRESS	42,776,891
6	DL-ADM-INSURANCE-SUSPENSION	52,423
7	DL-CDL-MED-CERT	31,838
8	DL-CDL-OUTBOUND	7,337
9	DL-CHILD-SUPPORT	252,415
10	DL-CITATION	16,416,706
11	DL-COUNT-FILE	25,703,165
12	DL-COURSE	434,040
13	DL-COURT-DOC	165,004
14	DL-COURT-TRACKING	276,808
15	DL-CTL	10,488
16	DL-DAILY	484,327
17	DL-DEPT-ACTN	7,171,642
18	DL-DOCUMENTS	25,502,029
19	DL-DUI	809,832
20	DL-DUI-OWNER	355,850
21	DL-ECI-ACCESSED	239
22	DL-EMERGENCY-CONTACT	1,518,602
23	DL-EXPL-TRACKING	7,856
24	DL-FALSE-STATEMENT	37,417
25	DL-HARD-STOPS	111,441
26	DL-HEARING	494,648
27	DL-HEARING-SCHEDULE	63,170

28	DL-ILK-ENFORCEMENT	48,999
29	DL-INCOMPLETE-APP	154,482
30	DL-INSURANCE	2,356,204
31	DL-INTERLOCK	91,815
32	DL-JUDGEMENT	25,802
33	DL-LETTERS	7,362,050
34	DL-LOCATOR	169,386
35	DL-MASTER	8,206,235
36	DL-MOTOR-VOTER	4,623,235
37	DL-MVR	155,265
38	DL-NAMES	10,065,303
39	DL-NOTE	17,646,254
40	DL-PA-CITATION	562,059
41	DL-PDL	116,516
42	DL-PDPS-MICRONUM	16,344
43	DL-PENDING	154,836
44	DL-PRIVACY	26,818
45	DL-RENEW-BY-MAIL	1,956,405
46	DL-RETAINED	25,372
47	DL-SHORT-CK-MVR	20,102
48	DL-SPECIAL-EXAM	161,457
49	DL-SSN-XREF	2,894,879
50	DL-SSOLV	4,013,293
51	DL-SURRENDER	2,171,985
52	DL-SYS-ERR	2,451
53	DL-TABLE-FILE	178,856
54	DL-TEST-SCORES	3,793,760
55	DL-TRACE	1,815,610
56	DL-TRANSMITAL	76
57	DL-TST-EXAMINER-FILE	3,833
58	DL-TST-LOCATION-TABLE	450
59	DL-WEEKLY	6,964
60	DL-ZIP-FILE	1,108

3. Annual CSTARS Record Counts

The following are the core annual activity metrics for CSTARS operations at the DOR office referred to as County 65:

Table 18 – CSTARS Record Counts

Ref	Element	2011 Annual Total	2012 Annual Total	2013 Annual Total	2014 Annual Total (To Date)
1	Document Scanning Titles and Registrations	120,934	132,373	87,689	295,728
2	Document Scanning EDW	3,036,760	3,846,980	3,904,028	3,045,474
3	PWD Scanning Titles and Registrations	97,435	93,207	64,222	105,563
4	Undercover	4,730	4,675	3,607	4,845
5	Deep Undercover	1,360	459	306	448
6	Histories – County	9,707	10,896	9,666	8,560
7	Incoming Document Processing	2,489,974			

8	Out Going Document Processing	22,016	151,163	917,354	739,481
9	Dealer Stubs	433,811	544,993	64,401	9,031
10	Cancel Records and Police Destroys	49,600	53,083	56,713	49,640
11	O/S Deletes	119,997	112,441	96,404	68,726
12	Searches – Paid	7,050	9,001	8,882	12,264
13	Searches – Free	11,853	7,500	112	643
14	Histories – Paid	1,212	763	985	1,186
15	Histories – Free	1,515	2,087	158	12
16	Manufactured Homes	3,042	3,151	2,954	2,340
17	Undeliverable Titles	6,433	7,135	8,662	8,544
18	Surrendered O/S Title Notifications	204,782	208,879	207,149	190,911
19	ST/MT/VT/DT Audits	80,640	67,288	53,935	18,245
20	BT Audits	16,380	14,222	12,064	4,183
21	RT Audits	234,612	465,638	696,664	239,023
22	Auto Verify/DCN	1,638,000	1,521,021	1,569,563	1,303,504
23	Quick Audit	649,152	380,086	341,635	73,522
24	Vehicle Identification Number (VIN) Applications	1,013	107	75	524
25	Tow Searches	504	116	122	71
26	Violation Letters	756	262	273	622
27	AV/IDS Registration	756	262	273	622
28	100% CT/IT	148,680	243,487	212,303	240,053
29	Prepping	1,638,000	1,521,020	1,569,481	1,317,605
30	Duplicates	15,337	18,848	17,060	16,811
31	Dealer Titles	16,528	20,261	20,986	21,853
32	SOC Titles	1,244	1,600	1,378	619
33	Histories	950	555	410	670
34	Searches	7,498	6,691	4,406	4,443
35	Unrecovered Theft	641	577	748	719
36	Personalized Plates – Transactions Only	16,120	17,864	13,708	10,683
37	Exempt Plates	12,102	12,540	12,815	16,205
38	State Issued Plates	11,749	10,141	8,460	8,041
39	Other Plates	2,483	2,382	2,029	1,694
40	Products/Authorizations	805	1,191	1,724	1,405
41	Other Programs	22,016	52,342	35,174	28,138
42	Low Power Scooters	3,796	3,946	3,427	2,740
43	Bulk Records Requests	99	112	68	37
44	MIIDB Resolutions	107	112	77	62
45	MIIDB Non-Use	3,159	3,553	3,274	4,043
46	Auctioned License Plates	1000	199	189	0
47	NMVITS Searches	224,539	198,102	218,250	181,622
48	Scrap Plates	3,962	1,771	170	21
49	Inventory – Plates Redistribution	289,545	824,433	637,887	254,471
50	Inventory – Product Redistribution	1,425,400	3,312,989	3,637,069	368,941
51	Inventory – Plates Orders/Manufacture	746,657	913,288	947,962	384,648
52	Inventory – Product	9,448,323	8,457,120	9,903,207	7,665,802

	Orders/Manufacture				
53	PWD Revokes	10	2	6	142
54	Non-Posts	44,053	43,194	37,965	40,783
55	IRP Registrations	0	0	18,813	22,781
56	IRP Refunds	0	0	228	165
57	SMM 2% Rental Maintenance	0	0	0	31
58	Vehicle Holds	107	107	75	96

4. *Database*

The database metrics (Note: This data is housed at all 106 sites) associated with the operation of the overall CSTARS environment are listed in the following table:

Table 19 – CSTARS Database

Ref	Element	2011 Counts[3]
1	Ttl_Master	11,985,576
2	Ttl_History	84,468,079
3	Ct_Data	84,348,108
4	Track_Action	170,539,256
5	Track_Batch	85,781,856
6	Track_Key	19,817,878
7	Permit	7,413,035
8	Placard	1,000,701

B. Response Time Requirements

The Response Time requirement for DRIVES transactions should be a maximum of 2 seconds (from pressing Enter to data displayed) for all transactions from the user interface. The Response Times requirements do not include any human interaction times.

This response time applies as well to screen refresh and readiness for next command.

C. Service Availability and Restoration Requirements

Given that the DRIVES will operate under a DR Plan to include a disaster recovery site (DR Site), it is anticipated that DRIVES Services will have a very high level of continuous availability.

The availability of all DRIVES Services must be at a minimum 99.9 percent (99.9%) per month without any allowance beyond 99.9 percent (99.9%) for Scheduled Downtime or switchover from the Primary Site to the DR Site (or vice versa). Service availability of 99.9 percent (99.9%) leaves a little less than 45 minutes a month for Service outages at the DRIVES level. Offeror may roll Scheduled Downtime between the Primary Site and DR Site to preclude as many DRIVES Service outages as possible. The reasons for the DR Site include:

1) To provide for fast recovery for failed equipment and localized power outages at the Primary Site with 99.9 (99.9%) percent availability as a requirement. This includes provision of any and all necessary power conditioning and alternative power sourcing to maintain the availability requirement.

2) To provide the basis for recovery of services in the event of a catastrophic failure at the Primary Site (fire, explosion, radioactive contaminations, etc.).

D. System Maintenance Requirements

Offeror shall perform Preventive Maintenance and Corrective Maintenance in accordance with the proposed Service Level Agreement that will be part of the contract.

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[3]   Taken from State count extracted from VIPER.

Service Levels

In order for the Offer to be considered, the Offeror must respond with their ability to provide the Services at or above the defined minimum Service Levels standards set forth in this solicitation.

Service Level Credits

The State shall have the right to receive from Offeror service credits for any Failure to meet Service Levels. If more than one Failure occurs in a single Month, the sum of the corresponding Credits shall be credited to the State on the next invoice. Offeror shall verify its agreement to the state requirement for a Service Credits in the final contract.

Root Cause Analysis

Offeror shall develop and provide to the state its procedure for conducting root cause analyses of errors.

Service Level for System Availability [Up Time]

System Availability Service Level.
The System and all Services will be provided by Offeror at or above the following levels of System Availability in both production and non-production environments for a vendor-hosted environment:

Table 20 – System Availability

System Environment	Required System Availability Service Level	Measurement Interval
Non Production	85.00%	Month
Production	99.90%	Month

Service Level for Transaction Availability [Response Time]

Transaction Response Time Service Level.
The System and all Services will be provided by Offeror at or above the following levels of Transaction Response Time:

Table 21 – Transaction Response Time

Maximum Response Time	Required Transaction Response Time Service Level	Measurement Interval
<= 2 second	99% of transactions	Month

Excludes large reports, uploading files, document images and external interfaces

Service Level for System Database Management

Services Performed for Database Maintenance
The following minimum maintenance Services must be performed by Offeror for a vendor-hosted environment:

Check for database integrity issues (corruption, invalid data, etc.).

Reorganize and/or rebuild indexes based on impact of fragmentation.

Update all statistics.

Full backups of all user and system databases weekly.

Cleanup backups over 2 weeks old.

Requests for Support

The State may place requests for Support Services (each, a "**Request**") using the existing State help desk platform. Offeror will be required to capture, at a minimum, the following information in connection with each Request for Support Services:

1)   Name of End User or other person making the Request

2)   Any corresponding tracking number in use by the State

3)   Name of person to be contacted with respect to the Request (if different from above)

4)   Telephone number/extension of contact person

5)   System(s) affected by the Error

6)   Brief description of the applicable Error

7)   Initial Severity Level for the Incident

If Offeror's Support Services group is not immediately available to answer the telephone, Offeror will provide the State an opportunity to leave a voice message. For voice messages received after Support Business Hours, the voice message *shall* generate a page or other immediate electronic notification to the on-call member of Offeror's Support Services group.

Tickets

Upon becoming aware of an Error, whether through receipt of a Request or through any other means, Offeror's Support Services group should assign the Incident a unique tracking number in their tracking system.

Priority Level

Offeror must support an issue resolution process based on the following state descriptions for Severity Levels:

Table 22 – Issue Priority Levels

Severity Level	Incident Description
Level 1	The System, or any sub-System or function, is totally unusable or unavailable for multiple End Users.
Level 2	The ability to use the System, or a sub-System or Function, is severely limited.
Level 3	The System, or a sub-System or Function, is useable, but there is some degradation of a normally provided function. Impact on End Users is significant but not disabling or severe.

| Level 4 | The Error is apparent, but circumvention or alternative is available. |
| | Impact on End Users is minimal. |

Support Records

Offeror's tracking system should maintain a record of each reported Incident for a period of [12] months.

Service Level for First Contact Resolution Rate & Call Waiting Time

First Contact Resolution Rate Service Level.
Offeror will achieve a First Contact Resolution Rate of not less than 75% for all Incidents during each Month.

Call Waiting Time Service Level.
Offeror will achieve a Call Waiting Time of not more than 2 minutes on 95% of all calls during Support Business Hours in each Month.

Service Level for Response and Resolution Times

Response Time and Resolution Time Service Levels.
Offeror will:

1)   Respond to requests for Support Services within the minimum Response Time set forth below.

2)   Arrive at a Resolution for each Request for Support Services within the minimum Resolution Time set forth below.

Table 23 – Issue Resolution Times

Priority Levels	Response Time (During Support Business Hours)	Response Time (Outside of Support Business Hours)	Response Time (Holidays)	Resolution Time
Level 1	System not Available – 15 minutes	System not Available – 1 hour	System not Available – 2 hours	Defect/Fault Identified – 4 hours Solution Agreed – 12 hours Ticket Closed – 24 hours

Level 2	System Down – 1 hour	System Down – 2 hours	System Down – Next Business Day	Defect/Fault Identified – 8 hours Solution Agreed – 2 Days Ticket Closed – 3 Days
Level 3	System Down – 2 hours	System Down – Next Business Day	System Down – Next Business Day	Defect/Fault Identified – 5 Business Days Solution Agreed – 15 Business Days Ticket Closed – Mutually agreed upon date
Level 4	System Down – 2 hours	System Down – Next Business Day	System Down – Next Business Day	Defect/Fault Identified – 5 Business Days Solution Agreed – 15 Business Days Ticket Closed – Mutually agreed upon date

<u>Measurement and Reporting</u>

Performance Metrics.
Offeror will implement such systems, tools and procedures necessary to:

(1) Measure, monitor, and verify Offeror's performance of the provided Services against the applicable Service Levels

(2) Submit reports to the State at a level of detail sufficient to verify compliance with the Service Levels

(3) Upon request of the State, Offeror will provide the State with information and access to such measurement and monitoring systems, tools and procedures for inspection and verification purposes.

Periodic Reporting.
Offeror *shall* provide the State with the following reports regarding the provided Services:

(1) Monthly Status Report. Intended to allow the State to monitor and track performance of all Services. Within 7 business days after the end of each Month.

(2) Quarterly Service Level Report. *Shall* be made available to the State for regularly scheduled quarterly Service Level Agreement performance reviews.

**(3) Annual Service Level Report - ** *Shall* be made available to the State for regularly scheduled annual Service Level Agreement performance reviews.

Service Level Governance
Following the completion of each calendar quarter, Offeror agrees to meet with the State to:

(1) Review the previous period's service level results

(2) Review prior Monthly Status Reports

(3) Review the Service delivery process

(4) Discuss improvements in the Service delivery process

(5) Review the status of outstanding Failures, Errors, and System concerns

(6) Review commendable performance

(7) Discuss possible improvements or other revisions to the Service Levels

Maintenance and Support
The maintenance and support Services will include all such Services as are required to maintain and support the System, including, without limitation, any pre-existing software comprising the System, such that the System continues to perform in accordance with all documented Service Levels. Without limiting the foregoing, maintenance and support Services will include, without limitation for a vendor-hosted environment:

(1) Weekly maintenance

(2) Regular checks for database integrity issues (corruption, invalid data, etc.)

(3) Reorganization and/or rebuild of indexes based on state of fragmentation; updates of all database statistics information

(4) Full backups of all user and system databases

(5) Clean-up of backups over 2 weeks old

(6) Daily maintenance

(7) Updates of modified statistics

(8) Rebuilds of highly fragmented table indexes

(9) Backup of day-over-day changes since the last full backup

(10) Cleanup of daily backups over 3 days old

(11) Intra-day maintenance

(12) Backup of all transactions every 15 minutes

(13) Cleanup of transaction backups over 3 days old

Change Management
Offeror will be required to integrate with the State's established processes for communicating and managing System changes. Changes to the System will not be implemented into a production environment until Offeror has received formal written acceptance of proposed changes from the State.

> **Updates.** Offeror will notify the State at least [30 days in advance of each Update as it becomes available for release. At the request of the State, Offeror will provide the Update to the State in a test environment for testing, evaluation, and user acceptance.

> **Upgrades.** Offeror will notify the State at least [90] days in advance of each Upgrade as it become available for release. At the request of the State, Offeror will provide the Upgrade to the State in a test environment for testing, evaluation, and user acceptance.

Security Reports - Offeror **shall** *provide the State with reports on system patches and security related updates made to the System/Solution at the following intervals:*

(1) Monthly Status Report

(2) Quarterly Service Level Report

(3) Annual Service Level Report

Field Office Relocation
It is not uncommon for the DMV to need to relocate an office to a new physical location. These moves include moving all the hardware, systems and network connections for the Solution/System. The Offeror will need to respond within their proposal response with a plan, including time and cost requirements, to execute a physical move of the Solution/System.

Hardware Refresh
It is the expectation of the state that the Offeror will own the end user hardware necessary for the DRIVES System/Solution. The State will not lease or own any of the terminal hardware or any other supporting technology hardware required to enable full operation of the System/Solution. In addition the Offeror will be expected to propose a plan, with a time line and cost model built into final proposal for periodically refreshing this end user hardware

County Infrastructure Support
In the current DMV models for county offices; the desk top and office support services for hardware management are provided to DOR by a third-party vendor. It is conceivable that this support model will continue after the implementation of the new DRIVES Solution/System. The awarded Offeror will need to acknowledge that they accept the possibility that they will need to possibly cooperate with and interact with other 3rd parties in the execution of providing services as a System/Solution. In addition the Offeror should respond in regards to their ability to provide end user desk top services for the DRIVES hardware at the county offices with applicable time and cost information.

1. *Preventive Maintenance*
Unless agreed to otherwise in advance by Department and Offeror, Offeror shall provide all Preventive Maintenance Services during Scheduled Downtime, during late evening hours or early morning hours in order to avoid times

when users need to use the System, as agreed to by Department.

Offeror will perform a documented Preventive Maintenance procedure for all equipment and software they provide. Offeror shall periodically dispatch maintenance personnel to clean, inspect and adjust the equipment and replace defective or worn parts thereof at the manufacturer's recommended frequency in order to keep the equipment in good operating condition. Offeror shall carry out periodic maintenance tasks on all electronic components they provide to ensure they are operating at maximum capability. Such maintenance shall be scheduled to be performed, at a minimum, once a month during hours agreed to by Department.

2. Corrective Maintenance

Offeror shall provide corrective maintenance for any Deficiency in Offeror provided equipment or software that, when used as delivered, fails to perform in accordance with the Specifications specified in the Agreement, including System Requirements. The period for the provision of corrective Maintenance coverage for all hardware and software shall be defined as 24/7.

Offeror shall maintain an electronic report log (for a configurable period of time) that indicates the problem report number, problem description, the time that the problem call was received, the priority assigned, all actions taken and the time that the problem was corrected. The problem report log shall be maintained in a database that is remotely accessible by Department personnel.

Offeror shall offer one central point of contact for support of hardware and software. Offeror support personnel shall address all problems reported by Department's Help Desk staff. Offeror's support personnel shall acknowledge problems reported via telephone or by e-mail within one (1) hour and respond according to the protocols listed below.

Department of Corrections (DOC)
IT Offender Management System (OMS) Phase II Request, FY 2015-16
Quantifiable Cost and Efficiency Savings

In response to the Joint Technology Committee (JTC) request for quantifiable costs savings and performance standards for the OMS Phase II funding request, the Department of Corrections has identified quantifiable cost and efficiency savings. In the Phase II funding request, the Department will replace the current legacy system, Department of Corrections Information System (DCIS) with a fully-integrated commercial off-the-shelf (COTS) software that encompasses offender information management and tracking, an electronic health records (EHR) system (funding received in Phase I), and a platform to manage offenders who are under supervision in community corrections or on parole (Phase III request). Managing the DOC along with the responsibility of protecting the citizens of Colorado, staff, and offenders, with a computer system that is more than 25 years old is a continuing risk.

Until an OMS system is selected in the evaluation process, DOC can only estimate the impact of a fully integrated OMS and how it will streamline staff time currently spent on multiple computer programs. In each of the following areas: Case Management, Diagnostic Intake Programmers, Custody Control Staff, Clinical and Mental Health Providers, Education, Library and Transitional Services, and Parole Officers, the Department is estimating that staff utilizing a fully integrated OMS will reduce their time spent on multiple computer programs and systems by 15% to 25%. Currently, line staff is either viewing or entering repetitive offender information by accessing multiple systems and screens in the current stovepipe patchwork of IT systems. The future reduction in computer administrative time will increase staff's productivity for positive personal interaction, addressing offenders' needs, behaviors, and the monitoring of offenders and parolees.

Examples of current system inefficiencies:

- Case managers spend approximately 30 hours per week on the multiple programs managing offender caseload. Estimate reduced computer time per week per case manager by 6 hours. Based on average caseload this will allow a case manager an extra 5 minutes for each offender.
- Diagnostic intake programmers spend all of their hours gathering offender information and recording assessments of offenders at intake. Estimate reduced computer time per week per programmer by 8 hours. Based on average caseload this will allow approximately eight additional assessments per programmer per week.
- Medical providers access 4 programs/8 screens to enter orders and research medical information during routine appointments; lab, X-ray, and other specialty reports require accessing external web sites or a phone call to the provider. The extra 3 hours per week per medical provider staff will allow for additional time with offenders to address their critical medical needs.
- Correctional officers access 2 programs/11 screens to move an offender within the cell house. The additional 1.5 hours per correctional officer will increase both offender and staff safety and security and participation in value added programs (education, vocational, clinical, and behavior health).
- Parole officers use 4 systems/15 screens to process an arrest warrant. The additional 2 hours per week will provide parole officers additional time to focus on the successful reintegration of offenders and parolees by assisting them with resources for employment and job training, and integrating them with behavior health specialists.

Estimated Time Savings After Fully Completed Implementation of OMS			
Classification	Staffing Level	Reduced Computer Time Per Week	Total Reduced Hours Per Year
Case Management	160	6	49,920
Diagnostic Intake	20	8	8,320
Custody Control Staff	2,600	1.5	202,800
Education, Library, and Transitional Services	215	3	33,540
Clinical	155	3	24,180

| Parole | 260 | 2 | 27,040 |
| Productivity Hours Available for Offenders and Parolees | | | 345,800 |

The estimated time savings calculated above are for those 3,410 line staff throughout 20 state correctional facilities, the Division of Adult Parole locations, community corrections, and the headquarters office. **The projected hours per line staff will only be realized once all three phases of the project are complete and fully implemented.** The productivity efficiency hours calculated above are not viewed with the respect to the Department's ability to reduce current staffing but instead as additional time to devote to those offenders and parolees under the Department's supervision.

OMS/Electronic Health Record (EHR) system costs could be offset by receipt of a potential federal Medicaid incentive if DOC's providers can meet EHR meaningful use guidelines by 2016. The incentive is estimated at $3 million (47 current providers x $63,750).

The Department already had a risk analysis of the system completed when DCIS was identified in a 2012 IBM study as 1 of 10 state systems posing the greatest operational risk due to its age, size, small pool of IT staff able to maintain its antiquated technology (Informix 4GL programming), and limited availability of resources in the marketplace. The study indicated that the DCIS system was defined by the Continuity of Operations definition of Critical (application supporting life safety functions) and Essential (applications that support the agency's mission). DCIS serves as the "backbone" of prison operations, program monitoring, and all aspects of offender management, but is based on 30+ year old programming technology that is obsolete and difficult to maintain. In addition, out of the 10 "high risk" systems identified in 2012, DCIS still stands alone in 2015 without a funded modernization project.

A fully integrated OMS is an integral part of the Department's long-term strategy and supports a mobile workforce to allow for information to be accessible anywhere and anytime; one that easily allows information sharing with external constituents including law enforcement, community service providers, the courts, etc. This includes private prison direct access, eliminating the need to maintain the Citrix environment, which is problematic, and painfully slow for the private prisons. A fully integrated OMS will eliminate redundant work efforts and increase accuracy and completeness of the offender's health record. A fully integrated OMS will reduce or eliminate the extensive data movement and synchronization that is required between the disparate systems and will provide increased security with one platform instead of multiple systems and programs and will provide the ability to provide encryption of data for regulatory compliance of systems (Federal HIPAA requirements).

A standardized health record system can offer quicker access to reliable and comprehensive information on health needs and prior health system contact, improving the quality of treatment decisions, providing a reliable referral mechanism, and reducing the risk of erroneous treatment and or/prescribing decisions. Many correctional health EHRs are designed to interface with jail and prison management systems. By making detailed information on prior diagnosis and treatment accessible at offender booking, EHRs can help intake staff triage offenders to the appropriate health services and housing units and support continuity of care when the offender is released. Additionally, for those offenders with mental health and substance abuse issues, the continuity of care of behavioral health needs could significantly improve the offender's success in the community.

Performance Standards
The Request for Proposal (RFP) process was used to explain the Department's needs, explore the available options and select the best overall solution from the proposals submitted by the presumed technical experts in the marketplace.

Performance standards are expected to emerge through the process of evaluation of the proposals, and through defining certain contract deliverables, milestones, and payment provisions thereof in the State contract. The Department will be working with staff from the Office of Information Technology (OIT) to develop optimum terms of performance and deliverables for the OMS/EHR contract.

Project: Mental Health Institutes' Electronic Health Record and Pharmacy System Replacement

Request Summary
The Department requests $4,863,145 in Capital Construction Funds (CCF) in FY 2015-16 to complete Phase II in the acquisition of an Electronic Health Record (EHR) system. Phase II includes funding contract professional services, software acquisition, equipment, and contingency.

Quantified cost savings
Discontinuance of legacy system - The Department anticipates saving $377,787 per year between the Institutes due to the discontinuance of the current legacy (electronic) systems – see below table for detail. The savings of $377,787 was already captured as a reduction in the FY 2014-15 operating request for the Mental Health Institutes Electronic Health Records System.

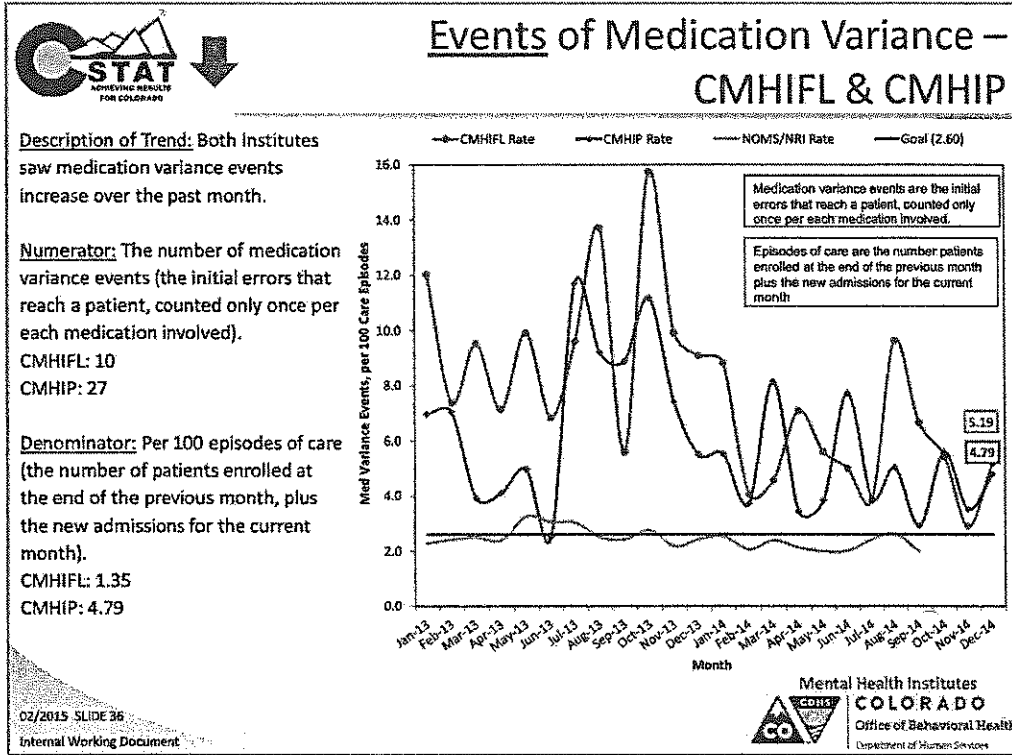| Annual Vendor Savings	Amount
Opus-ISM (Pharmacy)	($56,532)
Vision Carex (Dietary)	($64,651)
MultiData (Lab)	($64,476)
NetSmart (Avatar)	($174,639)
HP Server Support	($1,500)
VMWare Charges	($6,457)
Avatar Backups	($1,532)
2 Servers every 3 years	
Cost per server ($12,000)	
Cost per year	($8,000)
Total	**($377,787)**

Current staff impacts
The Mental Health Institutes currently utilize a legacy health information management system (Clinical, Lab, Pharmacy, and Dietary). As a result of a May 2011 audit, the Department accepted the Office of the State Auditor's recommendation that the Institutes pursue the implementation of an EHR and replace the legacy pharmacy system to address problems identified in medication prescribing and monitoring, as well as to improve clinical decision-making and reduce medical errors.

The legacy system requires approximately 3.0 FTE to maintain and audit paper medical records; these functions are not required for the EHR system. The 3.0 FTE are planned to be re-purposed to manage the enhanced functionality provided by the EHR with duties such as coding the increased detail of the patient billing and ensuring the integrity and regulatory compliance of the new, electronic record. The re-purposed 3.0 FTE will assist in providing accurate and more detailed information that can be accessed more timely when clinical decisions are being made.

Below is the Department's February C-STAT measurement for events of medication variance at the Mental Health Institutes.

Events of Medication Variance – CMHIFL & CMHIP

Description of Trend: Both Institutes saw medication variance events increase over the past month.

Numerator: The number of medication variance events (the initial errors that reach a patient, counted only once per each medication involved).
CMHIFL: 10
CMHIP: 27

Denominator: Per 100 episodes of care (the number of patients enrolled at the end of the previous month, plus the new admissions for the current month).
CMHIFL: 1.35
CMHIP: 4.79

Medication variance events are the initial errors that reach a patient, counted only once per each medication involved.

Episodes of care are the number patients enrolled at the end of the previous month plus the new admissions for the current month

Mental Health Institutes
COLORADO
Office of Behavioral Health
Department of Human Services

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The events of medication variance have been trending down but have not reached the Department's goal of fewer than 2.6 events of medication variance per 100 episodes of care. By refocusing staff efforts away from maintenance of paper records, to increasing electronic access and integration of patient information, the Department anticipates meeting or exceeding the events of medications variance goal thereby improving patient outcomes

Operational Efficiencies and Improving Patient Care
The Department has identified the following measured outcomes that are expected to be improved as a result of clinical efforts being supported by the increased functionality of the new EHR: Seclusion Hours per 1,000 patient hours; restraint hours per 1,000 patient hours; staff injuries related to seclusion and restraint; staff and patient injuries requiring medical intervention due to assault; and the length of stay of currently enrolled and discharged restoration and competency exam patients.

Requests for proposals (RFPs)
The Department is currently negotiating performance standards with Cerner (selected vendor) that stipulate the right to withhold payment for failing to meet key deliverable milestones during and after system implementation, including for: project startup; staffing and readiness; system-penetration testing; acceptance of plans and specifications; testing; training; roll-out; system achievement signoff; as well as the amount of unplanned system downtime and/or nonperformance of core features, on an ongoing, monthly basis.
Project: Modernizing the Child Welfare Case Management System

Request Summary
The Department of Human Services requests $6,824,567 Total Funds ($4,648,707 Capital Construction Funds and $2,175,860 federal funds) in FY 2015-16 to enhance and modernize Colorado's current Statewide Automated Child Welfare Information System (SACWIS) compliant case management system (Trails) and its underlying system.

Quantify savings or additional benefits
The modernization of Trails will provide savings in the form of development and maintenance costs for the Governor's Office of Information and Technology (OIT), as well as anticipated workload efficiencies for case workers across the State.

The technology and current system architecture of the Trails system is over 20 years old and much of the underlying hardware and software is outdated and no longer supported by the manufacturers of the systems. As the platform itself is outdated there are few experienced programming resources available for development and maintenance in Trails. Experienced Powerbuilder programming resources are difficult to find and require better compensation of more than $100 per hour for their services. In comparison, .NET programming resources are 30% less expensive to hire on average ($70/hour). There are currently 12 development FTE on the Trails team and on average 3 additional OIT contractor resources each year. This equates to a total of 31,200 hours of programming resources annually. At current compensation levels, a 30% decrease in salary for 15 FTE could amount to $936,000 in development savings annually. This is a three year project; these potential savings would be realized in future years, after the new system is fully operational.

In addition, modernizing the technology is expected to reduce costs in other areas. While these costs have not yet been quantified it is expected that by bringing Trails interfaces onto one common technology platform, known as Enterprise Service Bus (ESB), for all Trails interfacing systems will reduce costs related to maintaining separate software and hardware licenses that are required to assist the disparate systems from communicating effectively. This could effectively assist in OIT's vision of a statewide technology platform that is easier and cheaper to maintain and service.

In August 2014, the Office of the State Auditor (OSA) released a workload study of child welfare case workers. This study reported that 35% (16.1 hours each week) of a case worker's time was devoted to documentation and administration, which includes documentation of required information in Trails (*Colorado Child Welfare County Workload Study, ICF International Inc., 2014*). In October 2014, a work group of State and County members was formed to develop recommendations based on the OSA workload study. One of the recommendations is quoted here:

> **"TRAILS is Colorado Child Welfare's automated case management system** - Currently, TRAILS is outdated which makes it a difficult and cumbersome system for caseworkers to perform the data management element of their jobs. According to the study, TRAILS could be modernized to expand the system's capabilities. Modernizing the system would create workflow efficiencies for Colorado caseworkers through easier navigation and simplified reporting. This could include simplifying the capturing of data through document imaging technology, programming the system to automatically populate duplicative fields, and allowing remote access to the system through mobile devices. "

While the work group did not specifically quantify how much time could be saved through modernization of the system, it is anticipated that ease of navigation through different modules, reducing duplicative data entry, and improving mobile access alone would free up caseworker time to devote effort towards directly serving the children, youth, and families of Colorado. Additionally, the proposed modernization efforts are expected to improve the quality of information collected by improving integration with external systems, improving data integrity through the use of more efficient business rules, and more timely (less reliant on notes or memory) data entry from caseworkers in the field. Accurate, timely data collection and quality of the data entered is paramount to improving the quality of service provided to the children, youth, and families of Colorado.

One suggested gain in worker efficiency could be realized by creating a dashboard for case workers to find pertinent information on all open cases within Trails. Currently, the Trails system is difficult to navigate and finding that one relevant contact, treatment plan, or case note can take a worker an estimated 10 to 15 minutes of navigating through the system to find. Modernizing Trails would create the flexibility within the systems architecture to develop caseworker and supervisor dashboards. These dashboards would need to be designed with feedback from County and State users to maximize efficiency, but with the right information at caseworker's fingertips the search time for the most relevant information could be reduced to less than a minute or two. Even a conservative estimate (reduction of 5 minutes per day per each of the over 1100 caseworkers) equates to over 90 hours in productivity gain per day across the child welfare system.

Requests for Proposals (RFPs)
The RFP process identifies qualified vendors for a project. After a vendor is chosen, performance standards and associated penalties are made known when the contract process begins. The Department currently includes these as part of standard contract language, and will use this same process with the Modernizing the Child Welfare Case

Management System project.

Project: IT Systems Interoperability

Request Summary
The Department requests $14,139,300 total funds in FY 2015-16, $1,413,930 General Fund and $12,725,370 Federal Funds. There will be a continuation of spending in the out years using a 90/10 percent match funding model under the OMB Circular A-87 Cost Allocation Exception for implementing and maintaining an interoperable environment. The Department will utilize systems interoperability to view clients across data systems to align services for cost savings, fraud avoidance, and to reduce program administration costs.

Cost Savings and Improved Performance Outcomes
The interfaces are disbursed across the Department's core IT systems. Based on industry standards, the cost to develop a custom interface is estimated to be approximately $40,000, depending on complexity and type of protocol used for its development. This also includes the development of the infrastructure.

Industry standard development costs for batch service interfaces range from $15,000 to $30,000. Direct Access screen interfaces, with an estimated three to five screens per interface, is less expensive at $7,000 – $8,000 per interface. In addition, the expected costs of annual support and maintenance over a five year life cycle for each interface is estimated to be between $15,000 and $30,000 per year, per interface, or a total of $125,000 to $200,000 each, again over a five year life cycle. The existing Department interface protocols break out as follows:

Type of Protocols	*Number per Protocol*
FTP (Secure FTP, SFTP, FTP with PGP, FTP)	172
Broker	126
Infomover	70
Mainframe	35
Direct Access	24
Web Services	23
Cyber fusion	20
Manual	11
All Others	29
ADABAS/IEBGENER/3270/Batch	11
Total Interfaces	*520*

The proposed strategy to implement Interoperability is to begin to replace some of the existing protocols such as Infomover and manual interfaces (a total of 81). Once the foundational technology is in place (FY 2017-18), the Department will be able to sunset the interfaces at a potential savings of $2,430,000. The savings is already factored into the annual cost. The savings is calculated using the standard interface maintenance costs of $15,000 to $30,000 per year, and eliminating over 80 interfaces.

The Enterprise Service Bus (ESB) strategy would allow the Department to begin integrating its systems in a phased approach and allow for savings that would be re-invested in the overall enterprise architecture and interoperability plan. Over the five year implementation plan, the Department has projected a potential savings of $12,150,000 (81

interfaces X $30,000 X 5 years) just based on the replacement of the Infomover protocol and manual interfaces. As other interfaces are identified as ESB-ready additional savings will be realized that would allow for additional cost benefit and savings to the Department.

Requests for proposals
The Department has defined deliverables as a part of our planning efforts and we will require service levels specific to this project with our vendor partners and OIT. Performance based contracts will be used with appropriate penalties.

Project: Data Integration and Analysis System

Request Summary
The Department is requesting $1,636,949 total funds including $1,200,949 General Fund and $436,000 in federal funds to develop data systems that will meet the needs of each program within the Division of Community and Family Support (DCFS) to effectively track data at the child level, and allow for easy integration across all Office of Early Childhood (OEC) programs.

Quantify savings or additional benefits
The request to build an integrated data system is driven by the fact the current systems do not exist. What data is collected is done through a variety of Excel spreadsheets and Access databases. The systems are stand alone and do not interface with each other. Therefore, the new system is adding functionality that simply did not exist in the past. While it is difficult to quantify with any precision, the Department does believe there are areas that will generate savings/efficiencies as well as benefits.

- Eliminate Duplication: The Department currently supports standalone data systems; the proposed solution brings these systems into a single unified system. The proposed system would avoid duplication caused by transcribing data from the original source system into a format that can be manipulated for analysis purposes.

- Increase Accountability: The lack of even basic data collection systems impacts the accountability for resource allocation. There are programs where it is unknown how many clients actually receive services. The proposed system would add a great degree of transparency to how resources are distributed.

- Client Impact: The proposed system will allow data to be collected and analyzed relative the impact the programs have on clients the Department serves. This will in turn allow resources to be targeted to obtain the best possible outcomes.

- Data Redundancy: The proposed system will eliminate the need to enter data in multiple systems reducing workload for providers and caseworkers.

- Data Integrity/Data Security: Neither Excel spreadsheets or Access databases are equipped with the appropriate safeguards and tools to ensure security of the data within each system. The proposed integrated system will ensure that all data is stored with the appropriate safeguards against unauthorized access.

- Longitudinal Outcomes: The Integrated Data System will allow the Department to track outcomes over a longer period of time. This valuable information can be used to target and modify services to improve the outcomes for clients.

The numerous benefits of an integrated data system are largely qualitative; ultimately they will provide data to improve the outcomes for our clients. The Department believes that "good government" sometimes requires investment in qualitative as well as quantitative initiatives.

Requests for proposals
For contracted services, the Office of Early Childhood will create strict RFP guidelines to ensure timely and high quality work. While individual contracts will be negotiated separately, all contracts and contracted services will

ensure that vendors are held accountable. This will be done by setting firm timelines and milestones, and having each vendor agree to certified project management and independent validation and verification. Finally, damages and penalties will be imposed on vendors who fail to provide deliverables or fail to meet timelines. For example, the success of a project is often mobilizing and deploying the appropriate staff. Based on this, the Department will include strong requirements and related penalties to vendors who do not ramp up according to schedule.

Project: Enterprise Content Management

Request Summary
The Department requests $500,400 General Fund in 2015-16 and ongoing to cover software licensing and support to establish an enterprise content management system to manage electronic files, workflow and document retention.

Cost Savings and Improved Performance Outcomes
The request for an Enterprise Content Management solution was born out of employee surveys and several Lean events to improve the Department's method for routing documents for review and approval, better known as clearance, as a priority. Over 40 distinct documents and associated workflow processes have been identified for automation. The processes with the greatest negative impact or administrative burden include authorization of travel requests and personnel action forms. These are a few examples that demonstrate quantifiable cost savings. The savings would be spread over CDHS's multiple programs, and will be retained by the programs for other operational needs.

* *Lower costs for out-of-state travel* - The Department will be able to purchase airline tickets further in advance and save money. Current process for manually routing the document and proper authorization can take up to 3-6 weeks. The Department estimates savings of $50 per ticket by accomplishing the approval process in a few days instead of 3-6 weeks, and the savings could be $20,000 annually (400 tickets x $50 savings each).

* *Fill vacancies faster and reduce cost of turnover* - The Department fills roughly 300 positions per year. The personnel action form (HR-2) is manually routed through various parts of the organization: managers to approve the candidate, accounting to validate the funding availability, etc. If the HR2 approval process could be reduced by one week through automation, the Department could fill vacancies faster and reduce the need to pay overtime or hire temporary staff or make other concessions to cover workload. The projected savings can be calculated as 300 positions per year x one week of salary at $20/hour = $240,000.

* *Reduced time to perform administrative functions* - The Department estimates that program and administrative assistants spend 4 hours per week performing functions that could be automated within a content management system: resolving missing or improperly submitted data, determining the proper workflow, manually routing items for approvals, documenting the status of what was shared with whom and when, and, researching and reporting on the status of approvals. This amounts to over 8,300 hours (4 hours/week x 40 programs x 52 weeks/year = 8,320). Therefore a conservative rate is $26.50/hour x 8,320 hours/year resulting in initial savings of $220,480 worth of reclaimed productivity.

Savings from these three examples total $480,480, and the funding request is for $500,000 annually. There are over 40 other documents and processes the Department would like to automate, and those will most certainly add to the savings. Because these savings will be realized across many areas we are not proposing staff reductions. This request highlights an opportunity to increase staff productivity by refocusing human talent from tedious and mundane activities that should be automated to real work that adds value to the Department's services and constituents.

Requests for proposals
The Department proposes leveraging an existing OIT enterprise standard for content management, and as such we do not foresee engaging an RFP process or renegotiating the existing contract. We do anticipate defining deliverables and service levels specific to this project through an established vendor engagement process with our partners at OIT. The business requirements for this project will specify content priorities and associated availability requirements (i.e. service levels).

Project: Child Care Automated Tracking System (CHATS) Hybrid Enhancement Project

Request Summary
The Department requests $1,533,125 in federal Child Care Development Fund spending authority in FY 2015-16, and $1,458,125 in FY 2016-17 to implement a multiphase project to incrementally enhance and replace major components of the Child Care Automated Tracking System (CHATS). The total estimated 5-year development, operating, and maintenance costs for the project are estimated to be $8,916,250.

Quantify savings or additional benefits
CHATS is used for eligibility determination, attendance tracking, and provider payment reimbursement. The system serves 2,700 child care providers, over 1,100 county users, and approximately 30,000 children annually enrolled in the Colorado Child Care Assistance Program (CCCAP). The Department contracted with BerryDunn to conduct a needs assessment, which included an analysis of cost of ownership. The needs assessment identified four options for approaching CHATS modernization.

The solution recommended by BerryDunn to enhance and modernize CHATS is the Hybrid option. This option is the most cost effective solution, maintains the integrity of the current infrastructure, meets all user objectives, and allows work to begin immediately through a phased in approach. There are also benefits in terms of quantitative cost savings:

Cost Ranking of Enhancement Options	
	Estimated Cost
1) Enhancements to the Current System without Technology Upgrades	$3,000,000
2) Hybrid Enhancement (Recommended)	*$8,916,250*
3) Complete System Replacement	$20,000,000
4) Current Approach (Ad Hoc or "Band Aid Improvements)	$28,000,000

There are clear cost savings by using the recommended Hybrid option over Do Nothing and CHATS Replacement. The Enhancement option is the least expensive, but also one of the least viable, feasible, and financially responsible. This option does not replace system components in need of upgrades and modifications, and only meets some user objectives investing further financial resources to stabilize the system without addressing the need for new technology, is not an effective use of limited financial resources. Furthermore, issues in the current CHATS system will persist including the continued accumulation of technical debt, the future (approximately five years) need for a lifecycle refresh and complete system replacement, continued technical problems, and the potential loss of CCCAP providers who are unwilling to continue working within the current system environment.

Additional Benefits to the State
Furthermore, there are several additional benefits to the State by utilizing the Hybrid approach to CHATS modernization including:

- The projected annual savings from the CHATS hybrid enhancement will allow the CCCAP program to serve more children. Once the enhancement is complete, the savings can be deployed to counties allowing more eligible families to be served by CCCAP.

- An enhanced user interface and the addition of an Electronic Data Management System will benefit users (both providers and CCCAP parents) and the State. The system will allow for the State to collect data, provide accurate and efficient reports, and enhanced fraud prevention.

- BerryDunn developed and disseminated an online survey for CCCAP providers. Nearly 40 percent of respondents reported frustration with the current system. It was severe enough that providers considered the discontinuation of the CCCAP program. By enhancing the system and creating a more user friendly environment, the program expects to increase retention of current CCCAP users.

Anticipated Cost Saving

In the BerryDunn "Best Practices Report" recommends a combination of initiatives that have the potential for future cost savings. First, the "RFI for Attendance Tracking" recommendations notes that the ability to record attendance digitally and if real time greatly improves the accuracy of billings and also reduced fraud. Louisiana, Wisconsin, Texas, Mississippi, New York, and Iowa are among the states that have implemented technology that supports fraud reduction.

Additionally, the "Fraud, Recovery and Administrative Controls" analysis states that, "Robust reporting capabilities, Red Flag Fraud Alert Reports, automatic flags triggered by unusual activity, and open access to data, including data from other agencies that can be cross-referenced, are important for proactive fraud detection." The Department believes this added functionality within the reporting module will enhance fraud detection and improve fraud deterrence.

The Department conservatively estimates these two recommendations have the potential to reduce fraud by $477,854 in the first full year of operation (See table below). These savings mean more eligible families can be served by CCCAP.

CHATS Anticipated Cost Savings		
FY2013-14 CCCAP Expnditures		$63,713,812
POS Real-time Tracking Estimated Savings	0.25%	($159,285)
Robust Reporting and Red Flag Monitors Savings	0.50%	($318,569)
Total Estimated Annual Savings		($477,854)

Requests for proposals (RFPs)

For contracted services the Office of Early Childhood will create strict RFP guidelines to ensure timely and high quality work. While individual contracts will be negotiated separately, all contracts and contracted services will ensure that vendors are held accountable. This will be done by setting firm timelines and milestones, and having each vendor agree to certified project management and independent validation and verification. Finally, damages and penalties will be imposed on vendors who fail to provide deliverables or fail to meet timelines. For example, the success of a project is often dependent upon promptly mobilizing and deploying the appropriate staff. Based on this, the Department will include strong requirements and related penalties to vendors who do not ramp up according to schedule.

OTERO JUNIOR COLLEGE
PROJECT RANKING CRITERIA FOR FY 2015-16 FUNDING REQUESTS

Otero Junior College's technology infrastructure request is to replace outdated servers, laptop computers, PC desktop computers, IMAC desktop computers, peripheral equipment and internal switches and monitors. Equipment of this nature that is outdated will severely limit or possibly make it impossible for our instructional staff, administrative staff, maintenance crews, and, most of all, students to efficiently perform their required duties while in the employ or attending Otero Junior College. If the College utilized computers (laptops, desktops, etc.) that do not have current technology, we run the risk of students being unable to access Desire 2 Learn, the computer program used in the majority of course delivery and is paramount to communication between instructors and students for assignments, scheduling, and general management of student instructor relationships. Our entire staff relies on up to date technology to adequately perform their job assignments including interaction with Banner which is the Community College System program for student record tracking as well as financial reporting and accounting for the College's revenues, expenses, and asset/liability/fund balance process. Older machines reach "end of life" whereby new software updates and operating system upgrades will not function on equipment that does not have current technology and therefore renders the hardware useless. If our staff cannot access current software of even the simplest form such as Microsoft Word or Excel let alone complex systems such as Banner, we will be unable to provide required information at all levels.

The majority of technology equipment purchased by the Colorado Community College System Colleges is consistent throughout to ensure compatibility among all Colleges. We follow, whenever possible, Colorado State Purchasing negotiated price agreements for technology equipment and, in such cases where a competitive bid process is required, we will follow requirements for this process.

Colorado State University – Pueblo Information Technology Budget Request
(Cost and Efficiency Savings Analysis)

Colorado State University – Pueblo is currently requesting funding for the installation of a new prefabricated data center to be located on campus grounds. Quantifying the cost and efficiency savings associated with the installation of the new data center is completed by determining the different available project options and then analyzing the initial implementation cost and the yearly maintenance and utility costs. In this analysis, three different options are to be considered:

- Installation of a new prefabricated data center on campus
- Building a new facility on campus to house the data center
- Renovating the existing space to meet the current data center demands

Option #1 – Installation of new prefabricated data center on campus
Initial Installation Cost: $876,750
Yearly Maintenance Cost: $4,000
Yearly Utility Costs: $2,250

The current Colorado State University – Pueblo Information Technology Budget request includes the installation of a new prefabricated 40KW data center. The data center will include 10 racks with power distribution, UPS (Uninterruptible Power Supply), HVAC, lighting, automatic transfer switch connected to existing electrical generator, automatic fire extinguishing system, and environmental monitoring system to track internal temperature and humidity levels. The funding request is to purchase and provide complete installation of the data center of $876,750. The on-going maintenance cost include mechanical system filter replacement plus other necessary operating materials ($1,000), labor to install filters and exercise data center systems (100 hours x $30 per hour = $3,000). Utility savings are estimated to be 30% greater for a prefabricated data center. Average yearly utility costs are approximately $2.25 per square foot ($2.25 x 1,000 = $2,250)

Option #2 – Building a new facility on campus to house the data center.
Initial Installation Cost: $2,250,000 to $5,550,000 (based on Tier selection)
Yearly Maintenance Cost: $22,500
Yearly Utility Costs: $11,250

The second option is to build a completely new facility on campus to house the data center. Data center construction costs use a tiered system (Tier I, Tier II, Tier III, or Tier IV) based on allowable network downtime per year. Estimated construction costs range from a Tier I data center ($450 per square foot) to a Tier IV data center ($1,100 per square foot). Even for a small 5,000 square foot facility that would consist of a datacenter, office spaces, bathrooms, and mechanical rooms the cost could range from $2,250,000 to $5,500,000. Average yearly maintenance costs to include maintenance, custodial, grounds, etc., are approximately $4.50 per square foot ($4.50 x 5,000 = $22,500). Average yearly utility costs are $2.25 per square foot ($2.25 x 5,000 = $11,250).

Option #3 – Renovating the existing space to meet the current data center demands
Initial Installation Cost: $2,250,000 to $5,550,000 (based on Data Center Tier selection)
Yearly Maintenance Cost: $15,750
Yearly Utility Costs: $7,875

The third option is to renovate the existing data center in the Administration Building. The current data center is not large enough and expanding the space would be necessary. The adjacent area is an office suite with its own programmatic and space deficit issues. Due to current building mechanical system design, the walls around the data center do not go to structure creating a potential security issue. In addition, the building has asbestos requiring abatement prior to construction and there is a custodial closet located above the data center creating flooding concerns. The total square footage is approximately 3,500 square feet and using the data center construction range of $450 per square foot to $1,100 per square foot, the renovation cost would be $1,575,000 to $3,850,000. Average

yearly maintenance costs to include maintenance, custodial, grounds, etc., are approximately $4.50 per square foot ($4.50 x 3,500 = $15,750). Average yearly utility costs are $2.25 per square foot ($2.25 x 3,500 = $7,875).

IT equipment consumes electricity to operate and leaves behind heat as its "waste product". Because the data center is an enclosed facility, this heat – if not given an outlet – can build to the point that it damages servers and the other equipment in the data center. According to a study completed by Ponemon Institute, the average cost of data center downtime is approximately $7,900 per minute with the average incident length being 86 minutes resulting in an average cost per incident of approximately $690,200. Now, this is the average cost across all industries and Colorado State University – Pueblo does not come close to experiencing losses of this magnitude. But, by providing effective cooling to the data center equipment and providing effective back up power, the losses can be mitigated.

The prefabricated data center provides a very efficient, cost effective means by which Colorado State University – Pueblo can provide consistent IT support to campus.

Thank you in advance for your consideration.