

## Fiscal Year 2015-16 Information Technology Request

### Human Services

#### *Electronic Health Record and Pharmacy System Replacement*

#### PROGRAM PLAN STATUS and OIT BEST PRACTICES

2015-030

Approved Program Plan?  Yes  No      Date Approved:  February 22, 2013

The department says that it has coordinated with the Governor's Office of Information Technology (OIT) since the beginning of the project, which has been an integral part of the development of business requirements and the subsequent Request for Proposal (RFP). The department also notes that the vendor will be contracted to comply with OIT security, backup, and disaster recovery policies, as well as the federal Office of the National Coordinator for Health Information Technology and the Health Insurance Portability and Accountability Act security standards.

#### PRIORITY NUMBERS

Prioritized By	Priority	
DeptInst	1 of 6	
OSP	4 of 10	Prioritized and recommended for funding.

#### PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
CCF	\$9,849,610	\$0	\$0	\$0	\$9,849,610
GF	\$0	\$4,863,145	\$0	\$0	\$4,863,145
<b>Total</b>	<b>\$9,849,610</b>	<b>\$4,863,145</b>	<b>\$0</b>	<b>\$0</b>	<b>\$14,712,755</b>

#### ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$785,600	\$742,400	\$0	\$0	\$1,528,000
Construction	\$1,287,944	\$0	\$0	\$0	\$1,287,944
Equipment	\$42,691	\$42,691	\$0	\$0	\$85,382
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$469,029	\$231,578	\$0	\$0	\$700,607
Software Acquisition	\$7,264,296	\$3,846,476	\$0	\$0	\$11,110,772
<b>Total</b>	<b>\$9,849,560</b>	<b>\$4,863,145</b>	<b>\$0</b>	<b>\$0</b>	<b>\$14,712,705</b>

#### PROJECT STATUS

This project was previously funded in FY 2014-15 for \$9.8 million. This request for Phase II funding will allow the department to complete the project.

#### PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Human Services (DHS) is requesting state funds for Phase II of the implementation of an Electronic Health Record (EHR) at the state-operated, acute care, inpatient Mental Health Institutes at Pueblo and Fort Logan. Phase I of the project was previously funded in FY 2014-15.

The EHR system project will replace a number of separate health information and billing systems used by the institutes with a fully automated and comprehensive EHR system, with the goal of improving clinical decision making, reducing medical errors, and increasing efficiencies. The new EHR system will fully integrate with the necessary



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clinical, operations, and financial modules and systems used by the Mental Health Institutes.

Specifically, the project will replace the following existing information technology (IT) systems:

- a web-based dietary system;
- a locally hosted pharmacy system;
- a locally hosted lab system;
- a locally hosted admission/discharge/transfer system that also includes information about patient diagnoses, non-pharmacy billing, legal commitment records, scheduling, seclusion and restraint, and medication variances; and
- multiple Microsoft Access databases containing additional patient information.

The project includes the following components:

- a fully hosted, web-based EHR system that will replace the institutes' health information systems and paper-based patient charts;
- improvements to network infrastructure, including the development of a secure wireless network on both campuses; and
- EHR hardware including:
  - electronic tablets to be used by clinicians to allow real-time order entry, chart updating, and access to medical information while interacting with patients;
  - bar scanning and labeling equipment for pharmaceutical dispensing; and
  - vendor support, training, and software licenses.

The department will purchase a customizable, commercial off-the-shelf (COTS) EHR product, which includes installation, hosting, and process reengineering costs. The request assumes that the software vendor, not state FTE, will customize the product for the department's specific needs.

Phase I included \$9,849,610 of funding for contract professional services, construction, software acquisition, equipment, and contingency. Phase II is a continuation request for \$4,863,145 in funding for contract professional services, software acquisition, equipment, and contingency. An RFP for the EHR system was published in July 2014. As of November 2014, vendors had submitted responses to the RFP. Vendor selection is currently pending, and the EHR is set to be fully implemented by June 30, 2016.

***Division of Youth Corrections FY 2014-15 supplemental request.*** DHS submitted a FY 2014-15 supplemental request (\$935,000 GF) for funding to incorporate DYK medication management needs into the overall EHR system, which was approved by the Joint Technology Committee on December 30, 2014 and the Joint Budget Committee on January 26, 2015.

***EHR system integration opportunities.*** The department, in conjunction with the Governor's State Health Information Technology Officer, held discussions regarding the opportunity for systems integration with other DHS offices and state agencies. The conclusion was that the scope and needs of other departmental and agency EHR systems are too diverse to pursue an enterprise EHR solution. According to the department, state agencies are aligning their EHR efforts through coordination of departments and the two state health information exchanges (HIEs), the Colorado Regional Health Information Organization (CORHIO) and the Quality Health Network. These efforts include sharing: EHR business requirements, vendor evaluations, practice transformation, and staff training; and establishing secure HIE connections to other health providers.

## PROJECT JUSTIFICATION

A May 2011 state audit of the psychiatric medication practices for adult civil patients at the institutes contained a recommendation that the institutes pursue the implementation of an EHR. According to the audit, such a system would address problems identified in medication prescribing and monitoring, improve clinic decision making, reduce medical errors, and increase efficiencies. The DHS reports that the rate of medication errors at both institutes is typically more than twice that reported by other psychiatric facilities, and notes that other facilities that have implemented EHR systems have experienced a significant reduction in medication errors.



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The department further notes that an EHR will assist in clinical efforts to address patients' mental illnesses, and will potentially reduce patient behaviors that drive assaults, require seclusion and restraint, and lengthen hospitalizations. Further, as patients move from the institutes into the community, the institutes will be able to share patient information with community mental health centers and other providers in order to facilitate the transition.

**Project alternatives.** As an alternative to the implementation of an EHR, DHS says the institutes could continue to operate the current information technology systems. According to the department, operation of the current systems would likely result in continued high rates of medication errors and would not positively impact the clinical management of patients. Further, not implementing the EHR will cause the department to be out of compliance with the 2011 recommendation of the Office of the State Auditor (OSA) to implement an EHR.

#### PROGRAM INFORMATION AND IMPLEMENTATION PLAN

The mental health institutes provide residential services to individuals of all ages with complex, serious, and persistent mental illness. The Mental Health Institute at Pueblo currently has 451 beds and the Mental Health Institute at Fort Logan has 94 beds. The majority of the patients are referred to the facilities by community mental health centers when patients are deemed too unstable for community services to be effective.

#### COST SAVINGS / IMPROVED PERFORMANCE OUTCOMES

According to DHS, the retirement of legacy systems by the new system will have cost savings of \$377,787 per year, which have already been factored into the department's funding request.

The department states that the new EHR will not lead to other cost savings, but will instead improve services for patients and enhance patient care and safety. It will do this by addressing problems identified in medication prescribing and monitoring, which will improve clinical decision making, reduce medical errors, and increase clinical efficiencies. These operational efficiencies are expected to decrease prescription errors, seclusion and restraint hours, staff and patient injuries, and the patients' length of stay.

#### SECURITY AND BACKUP / DISASTER RECOVERY

The EHR system will be vendor-hosted and cloud-based with the responsibility for full data security testing with the vendor. The issued RFP requires the new system to meet or exceed OIT security and backup standards.

#### BUSINESS PROCESS ANALYSIS

Following the OSA's May 2011 audit, the department developed business requirements spanning 19 areas of EHR functionality from: cost estimates and information received from a request for information that it published; viewing live demonstrations of various EHR, lab, and pharmacy systems; researching EHR systems online; interviewing other states that use EHR systems; and numerous meetings with stakeholders such as clinical and operations staff.

#### PROJECT SCHEDULE

	Start Date	Completion Date
Vendor Selection	August 2014	August 2014
Contract Negotiation	August 2014	October 2014
Software Implementation and Initial Customization and Training	October 2014	April 2016
Final Customization and Training	March 2016	June 2016
Completion		July 2016

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#### OPERATING BUDGET

DHS anticipates ongoing costs for required vendor enhancement, which will vary from year to year, based upon the the solution implemented and the need for complex enhancements. It estimates these costs at 20 percent of the cost to purchase and install the EHR software and the wireless network. In FY 2015-16, this cost is \$728,000, and has been included in professional services rather than a separate operating request.

#### STAFF QUESTIONS AND ISSUES

1. Please further explain your request to waive the six-month encumbrance deadline.

*The six-month encumbrance waiver was requested in order to allow adequate time for any solicitations and procurements related to Phase II.*

2. Please elaborate on what was specifically funded in FY 2014-15 under Phase I of the project, versus what will be funded in FY 2015-16 for Phase II. In the budget request submittal, it is noted that:

- Phase I included funding for contract professional services, building construction, software acquisition, equipment and contingency.
- Phase II includes funding for contract professional services, software acquisition, equipment, and contingency.

Can you be more specific as to what the two phases separately fund?

*The Department expects the following milestones to be attained as outlined below.*

#### *Phase I:*

- *Initial Project start up*
- *Review of the vendor's project plan timeline*
- *Assemble required staff for the Mental Health Institute staff in order to review the proposed work flows and organizational effort*
- *Detailed customization planning*
- *Project designing*
- *Commencement of building*

#### *Phase II:*

- *System building*
- *System testing*
- *Staff training*
- *System implementation*

*Due to the fluid nature of the project, some phase I milestones may be achieved in Phase II requiring a shift of some funding from FY 2014-15 to FY 2015-16. The Department will monitor the milestones and submit a request to carry forward project funds into FY 2015-16, if necessary.*

3. Please provide an update on vendor selection and contract approval, if it is available. The implementation plan states that the "specific plans for action, engagement, communication, and training that are driven by the EHR selection will be decided shortly after the vendor selection," which was due to be completed October 2014. Is this information available yet?

*The Department has published an award letter naming Cerner as the vendor, and the protest period has passed with only one other vendor protesting. That protest was considered and denied by Procurement, and no appeal was filed. The Department has begun contract negotiations with Cerner and expects to sign a contract by the end of February 2015. The Department and Cerner will then develop in short order the specific plans for action, engagement,*



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*communication and training, as these will be largely driven by Cerner's experienced, strategic approach to implementation and hospital readiness.*

4. Does the department have any more concrete FY15-16 operating budget impact figures? The budget submittal says that OBH and OIT staff will be jointly determining how ongoing system development support will function after project completion. Please provide operating budget numbers if available.

*At this time, the Department does not have any more concrete FY 2015-16 operating budget impact figures. The Department submitted a funding request in November 2013, for operating funds that included \$1,091,930 for ongoing fees, system hosting and support and; \$1,436,872 for ongoing vendor costs for development and enhancement. The Department will continually assess how the system development support will function after completion during both phases.*

5. Under the "Assumptions for Calculations" section, training costs are given as \$14,400, which is based upon 14 days at \$1,200/day. This number should therefore equal \$16,800. Please explain this discrepancy.

*It appears this is a typographical error, and the correct number of training days is 12 instead of 14.*





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### Child Welfare Case Management System Replacement

#### PROGRAM PLAN STATUS and OIT BEST PRACTICES

2016-012

Approved Program Plan?  Date Approved:

According to DHS, it has worked with OIT to develop costs and plans for the system upgrade. OIT staff have reviewed the independent consultant report and have been in consultation with the department throughout the development of the request. DHS says all processes are in conformity with OIT best practices. The implementation will also align with OIT's enterprise health IT architecture model and allow DHS and OIT to connect with the data systems of other agencies and health information partners. DHS says the project will create a single, comprehensive view of clients, allowing for a more efficient and cost effective program delivery.

#### PRIORITY NUMBERS

Prioritized By	Priority	
Dept/Inst	2 of 6	
OSP/B	6 of 10	Prioritized and recommended for funding.

#### PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
FF	\$0	\$2,175,860	\$2,056,014	\$2,056,014	\$6,287,888
GF	\$0	\$4,648,707	\$4,372,192	\$4,372,192	\$13,393,091
<b>Total</b>	<b>\$0</b>	<b>\$6,824,567</b>	<b>\$6,428,206</b>	<b>\$6,428,206</b>	<b>\$19,680,979</b>

#### ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$3,148,588	\$3,057,601	\$3,057,601	\$9,263,790
Construction	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$2,800,000	\$2,800,000	\$2,800,000	\$8,400,000
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$0	\$324,979	\$306,105	\$306,105	\$937,189
Software Acquisition	\$0	\$551,000	\$264,500	\$264,500	\$1,080,000
<b>Total</b>	<b>\$0</b>	<b>\$6,824,567</b>	<b>\$6,428,206</b>	<b>\$6,428,206</b>	<b>\$19,680,979</b>

#### PROJECT STATUS

This is a new, never-before requested project.

#### PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Human Services (DHS) is requesting a combination of state funds and federal funds spending authority to enhance and modernize the Trails case management system, which is the state's Statewide Automated Child Welfare Information System (SACWIS), and associated infrastructure. The project will modernize Trails to allow for faster implementation of system modifications and to accommodate changing child welfare practices. Critical requirements identified by DHS include:



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- mobile device compatibility and support to provide secure systems that meet industry standards;
- data integration to help promote the effective use and availability of data across multiple systems that influence child welfare, including the ability to add unstructured or external data; and
- profile-driven capabilities for data administration and ease of use by providing user-appropriate interfaces (agency-specific and/or job function related).

The department says new development activities for Trails will be defined by a dedicated team of internal employees and contractors using an agile methodology. For example, the Intake Module will be converted and implemented. While the Intake Module is implemented, the next module will be developed and converted. A contract development team will be located in the Governor's Office of Information Technology (OIT), consisting of one project manager, one technical architect, one half-time engagement/integration manager, eight application developers, four business analysts, and four technical analysts. DHS states that these employees will be involved with the project for three years and that the modernization project requires contract staff to assist with design and build activities. The infrastructure will include 20 IIS8 servers each with 16-GB of RAM, a 250-GB hard drive, and 4+ cores.

### PROJECT JUSTIFICATION

According to the DHS, Trails is a critical component to the county child protection practices. The benefit of augmenting an existing system leverages the previous investment, workforce familiarity, and existing working relationships with OIT. Changes and extensions to the system have been supported with consensus from DHS, OIT, and users. The group agrees that a more concerted, focused effort is required to enable better interfaces, reporting, and service outcomes. The department also says understaffed county departments of human services will benefit from improved case management efficiencies. The county staffs are struggling to input information into the Trails system even with state-provided modifications and improvements. Updating the Trails system will allow greater flexibility and faster data input.

DHS says Trails is 13 years old and is in desperate need of a major overhaul. It was originally purchased from another state and tailored to fit Colorado's needs. The system is used for the Divisions of Child Welfare, Youth Corrections, Early Childhood, and Administrative Review. It is also used by the Office of Child Protection Ombudsman, 64 county departments of human and social services, and other contract providers. The Trails system has been compliant with SACWIS since 2011.

Additionally, Trails integrates with 11 other systems with 87 unique interfaces within DHS and other state agencies. Limitations of the Trails system, identified by both internal and external stakeholders, include: outdated system architecture, limited mobile system access, redundant data entry, missing data interfaces, data integrity risks, inability to augment case data with attachments, and ad hoc reporting capabilities. Users are required to enter duplicate information on multiple pages and have difficulty navigating the complex system interface. DHS also says the system response time is slow due to a client-server based technology. The project includes a complete overhaul of the 11 state agency systems and 87 data entry interfaces. According to the department, standardization of the unique interfaces will improve timeliness of data entry, increase mobile access, and increase maintainability. The system will be better able to report measurements related to federal safety and permanency goals.

The department hired a consultant in FY 2013-14 to do an independent analysis of the Trails system. The consultant recommended modernizing the system. The department says this will be achieved through technology upgrades and enhanced data interfaces. Benefits include: a modern, effective, and elegant solution that is easy to navigate and supports common data views; greater reporting flexibility and data analytic capabilities; and greater system interoperability to facilitate data sharing and overall case management outcomes. Furthermore, DHS says Trails is critical to the Governor's Child Welfare Plan 2.0 and that modernizing Trails will result in greater efficiencies that allow caseworkers to make faster and better informed responses, leading to the improved safety and well-being of Colorado children.

**Project Alternatives.** According to DHS, the proposed approach was compared to several other options, including leaving the existing system alone and doing nothing. The department says the do-nothing approach is not feasible given the current state of the Trails system. A full-scale replacement with a commercial off-the-shelf (COTS) solution was also considered, but the department deemed that the risks (cost, time, degree of organization change, customization, data conversion, and training) outweighed the benefits. According to vendor research, for other states that chose a full COTS replacement, costs ranged from \$26 to \$35 million, with annual operating costs between



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\$6 and \$7 million. Of the states that are currently enhancing an existing system, Wisconsin provided \$4.3 million annually for vendor services, and Washington, D.C. converted its system through a vendor contract for \$4.6 to \$5 million annually during its 18-month project.

#### PROGRAM INFORMATION AND IMPLEMENTATION PLAN

The department says it plans to use an agile/iterative continued improvement process to provide incremental system releases with maximum value to the organization. It also says that an "Improvements Wish List" will be prioritized after each iteration and that a new set of modifications will be updated into the project plan as needed. Iterations will be determined by considering both distinct and dependent business areas, and priorities will be documented within the project management plan. DHS says the project team will work in conjunction with program business partners and stakeholders to define the order of operations for design, development, and implementation.

#### COST SAVINGS / IMPROVED PERFORMANCE OUTCOMES

The department did not quantify any associated cost savings. According to DHS, the system upgrade will provide easier use, adaptation, and maintenance. Improved performance outcomes will be designed to: allow faster implementation of system modifications to better reflect changing child welfare practices; allow users a more comprehensive view of children served across programs; enable caseworkers to be more effective and responsive; provide improved reporting capabilities; and improve caseworker time management and workload by being accessible through the Internet and mobile devices.

#### SECURITY AND BACKUP / DISASTER RECOVERY

According to the department, the infrastructure for the Trails application is housed in a CenturyLink Federated Cloud environment. The department says that there are defined protocols for security and backup that have been amended to ensure adherence to SACWIS requirements. The Chief Information Security Officer will review and approve the Backup and Recovery Plan for the project.

#### BUSINESS PROCESS ANALYSIS

The department says that an independent report included analysis of methods used to conduct a thorough and comprehensive view of the current Trails system and potential replacement alternatives, including:

- developing questionnaires for stakeholder interviews and vendor responses;
- conducting stakeholder and state interviews;
- soliciting vendor information;
- establishing a repository of reference materials;
- analyzing relevant information; and
- developing evaluation tools.

#### PROJECT SCHEDULE

	Start Date	Completion Date
Contracting	N/A	N/A
Implementation	July 2015	January 2018
Equipment	July 2015	March 2018
Completion		June 2018



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### Child Welfare Case Management System Replacement

#### OPERATING BUDGET

The department has submitted an accompanying operating budget request to the Joint Budget Committee for \$181,240 (including \$150,429 in General Fund and \$30,811 in federal funds spending authority) and 2.7 FTEs in FY 2015-16. The department also expects an operating budget increase of \$167,131 and 3.0 FTE in FY 2016-17. The department says the on-going cost for leased server capacity associated with the 20 new servers is unknown at this time.

#### STAFF QUESTIONS AND ISSUES

1. This request calls for hardware including twenty servers that will consist of 16 GB of RAM, 250 GB Disk, IIS8, and 4+ Core(s). Please explain how the quantity and sizing for the servers was derived?

*The Office of Information Technology and Trails in work sessions with the Division of Child Welfare Services and other entities derived the estimate given the requirements indicated in the Istonish report. Trails currently has 28 Citrix servers to support the Production environment. The 28 existing servers have limited capacity to support Trails on a modernized platform. 20 new servers have been requested to accommodate the proposed platform and are necessary to support Trails modernization. This number was estimated based on anticipated requirements to use the most up to date, newest technologies. Moving forward utilizing a phased approach, the 28 existing servers will be partially migrated along with the 20 new servers.*

2. Does the department anticipate any costs savings from the system upgrade?

*Upgrading will improve efficiency for child welfare case managers and field staff for service delivery to children and families. Modernizing Trails creates 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. Tablets and other mobile technology was previously distributed to counties, and the Trails application was accessible on those devices, however, there is not a mobile application, or a mobile friendly version of Trails. Cost savings will be realized in the form of effective service delivery, response time and usability. The workload study work group has made the recommendations to improve efficiencies in the system, such as, better mobile access and functionality.*

3. How many caseworkers/users within the state are currently accessing Trails?

*Currently, there are approximately 6,000 active Trails users including Division of Child Welfare, Counties and Division of Youth Correction users.*

4. What are the 11 other systems that Trails integrates with and under which agency does each system fall?

*11 Systems, including Federal and State, integrates with Trails:*

- CFMS (County Financial Management System) - CDHS
- NCANDS (National Child Abuse and Neglect Data System) - Federal Administration for Children and Families (ACF)
- AFCARS (Adoption and Foster Care Analysis and Reporting System) - Federal Administration for Children and Families (ACF)
- CHATS (Child Care Automated Tracking System) - CDHS
- CCCLS (Colorado Child Care Licensing System) - CDHS
- CBMS (Colorado Benefits Management System) - CDHS
- ACSES (Colorado Automated Child Support Enforcement System) - CDHS
- SIDMOD (State Identification Module) - CDHS
- ICON/IPON (Colorado Integrated Criminal Justice Information System) – State Judicial Department
- NYTD (National Youth in Transition Database) – Federal Administration for Children and Families (ACF)



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- CICJIS (Colorado Integrated Criminal Justice Information System) – various State Departments

5. How will reporting capabilities be improved by the system upgrade, and for what purposes are reports most often required?

*Reports are required for multiple purposes ranging from court documentation, treatment planning, and fiscal transactions. Improvements realized from the new platform include: server based report processing; platform independent processing; and greater flexibility on adapting to report requirement changes. The proposed system upgrade also allows for the addition of BI (Business Intelligence) and predictive analytics, which has the potential to considerably advance the nature of reporting.*

6. Explain in more detail how the upgrade will allow greater access to the system with mobile technology.

*The current Trails technological platform makes developing mobile solutions cumbersome and time consuming, which in turn, is ineffective and costly. The proposed solution/platform allows mobile application development to more securely and efficiently sync with Trails. Additionally, users who access Trails using mobile devices will experience a smoother user interface that is more compatible with smartphones and tablets resulting in efficient access. These modified applications and mobile versions are optimized for a smaller screen, and devices that have slower, lower powered processing chips.*

7. Explain how the new system will have increased interoperability with other systems.

*The new proposed concept will allow standardizing interfaces by enabling service oriented architecture which in turn will allow Trails interfaces to be easily configured, maintained and shared across agencies.*

8. Where are federal funds coming from for the upgrade and have they been secured?

*Federal Title IV-E dollars will be applied at a 50% match. After factoring in penetration rates, the federal funds will approximate 34% of General Fund expenses. Trails is a SACWIS (State Automated Child Welfare Integrated System) compliant system. Currently, only 11 states qualify for this Federal match. Modernizing Trails allows Colorado to protect our current SACWIS compliance status including the federal match for system upgrades and maintenance. Funding would be secured once the General Fund match is approved.*

*About Trails SACWIS compliance –*

*The term SACWIS came from Federal legislation through ACF (Administration for Children and Families). This 1993 legislation (and subsequent legislation as well), provided states with the opportunity to obtain enhanced funding through the Title IV-E program of the Social Security Act to plan, design, develop, and implement a Statewide Automated Child Welfare Information System (SACWIS).*

*In order to justify and continue the ongoing federal funding for the development and maintenance of the system, states must demonstrate that they have implemented, or are in the process of implementing over 80 separate requirements that ACF has outlined. Those requirements define what a SACWIS compliant system must do. For years Colorado has been working on many of the different requirements. Some were relatively easy or already in place, but some took months or even years to implement.*





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## Human Services

### IT Systems Interoperability

#### PROGRAM PLAN STATUS and OIT BEST PRACTICES

2016-013

Approved Program Plan?  Date Approved:

The Governor's Office of Information Technology (OIT) was an active participant in the planning grant. The implementation of interoperability will be accomplished in cooperation with OIT and will align with their enterprise health IT architecture model.

#### PRIORITY NUMBERS

Prioritized By	Priority	
Dept/Inst	3 of 6	
OSP/B	7 of 10	Prioritized and recommended for funding.

#### PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
FF	\$0	\$12,725,370	\$7,958,910	\$23,859,585	\$44,543,865
GF	\$0	\$1,413,930	\$2,652,970	\$7,953,135	\$12,020,035
<b>Total</b>	<b>\$0</b>	<b>\$14,139,300</b>	<b>\$10,611,880</b>	<b>\$31,812,720</b>	<b>\$56,563,900</b>

#### ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$4,015,440	\$3,703,520	\$11,137,700	\$18,856,660
Construction	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$6,000,000	\$3,300,000	\$9,850,000	\$19,150,000
Miscellaneous	\$0	\$1,323,360	\$1,323,360	\$3,970,080	\$6,616,800
Contingency	\$0	\$0	\$0	\$0	\$0
Software Acquisition	\$0	\$2,800,500	\$2,285,000	\$6,855,000	\$11,940,500
<b>Total</b>	<b>\$0</b>	<b>\$14,139,300</b>	<b>\$10,611,880</b>	<b>\$31,812,780</b>	<b>\$56,563,960</b>

#### PROJECT STATUS

This is a new never before requested project.

#### PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Human Services (DHS) is requesting a combination of state funds and federal funds spending authority for FY 2015-16 to create a new system that will standardize all existing IT systems under this interoperability environment project, while leaving the core systems in place.

The department expects a continuation of spending in the out years on a 75/25 percent match funding model under a time-limited, specific exception to the cost allocation requirements set forth in the federal Office of Management and Budget Circular A-87 (Section C.3) that requires benefitting programs to pay their share of the costs associated with building state-based information technology systems. The exception allows federally-funded human services programs to benefit from investments in the design and development of state eligibility determination systems for state-operated exchanges, Medicaid and the Children's Health Insurance Program (CHIP). DHS says that this



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### *IT Systems Interoperability*

exception will apply for implementing and maintaining an interoperability environment. The federal funds will be secured through the submission of an Advance Planning Document (APD) to the Centers for Medicare and Medicaid Services (CMS). A requirement for federal approval is demonstrating that the state has committed the 10 percent funding.

Without removing data from the core system, DHS says it will add necessary technology, security, and governance components, while allowing data to be available to users. As the new components come online, the old interfaces will be retired. This will reduce the need to build and maintain unique interfaces among IT systems, where over 500 unique interfaces now exist. DHS says the interoperability environment will also allow for transparency and improved accountability with the added bonus of increased service delivery to clients. This will be possible as two or more systems or applications will be able to share data for better decision-making capabilities.

### PROJECT JUSTIFICATION

According to DHS, the department has no standard policy, procedure, or practice addressing interoperability. The department's IT systems are diverse, requiring hundreds of unique interfaces that move programs, services, clients, and financial data to 95 federal, state, and county IT systems using 28 different methodologies. The department has no ability to view or analyze data in its entirety without significant manual intervention. One of the projected outcomes of interoperability is to automate performance management reports and to look at performance across various data systems.

The department believes that its IT future lies with a new connected approach that provides a roadmap for improved business processes and program performance resulting from:

- the use of a Service-oriented Architecture (SOA), allowing faster access to services, case simplification, safety, and outcome measures;
- the creation of an Enterprise Service Bus (ESB);
- development of shared services that will enhance and extend existing applications for use by multiple agencies and business processes; and
- using the new enterprise architecture as an opportunity to improve processes and procedures.

**Project alternatives.** The department says that it can continue to build custom interfaces at costs ranging from \$10,000 to \$80,000 each, depending on the complexity. Industry standard annual maintenance costs for interfaces, for which the department has over 500, are between \$10,000 and \$30,000 per year. The department says it is not funded to maintain its interfaces at this level.

### PROGRAM INFORMATION AND IMPLEMENTATION PLAN

According to DHS, the interoperability roadmap provides multiple work streams of initiatives. The project will develop an interoperability environment for the entire department over the first two years, and then in the next three years, individual data systems will be brought into the environment. The two-year plan can be considered as Phase I, and the three-year plan can be considered Phase II.

### COST SAVINGS / IMPROVED PERFORMANCE OUTCOMES

According to DHS, cost savings will be achieved through interoperability. Using interoperability to view clients across all data systems to align services will result in cost savings, fraud avoidance, and reduced program administrative costs. A proposed strategy for the Colorado Client Information Sharing System (CCISS) is to replace some existing protocols such as Infomover and 81 manual interfaces. Interface maintenance costs run \$15,000 to \$30,000 per interface per year. By eliminating over 80 interfaces, the cost savings the first year would be \$2,430,000. Staff counts 520 interfaces that can be eliminated. The department estimates that over the five-year implementation, \$12,150,000 could be saved on just the first 80 interfaces being eliminated. Additionally, cost savings will be realized as each interface becomes ESB-ready. These cost benefits and savings will be verified during the first year of implementation and will be balanced with potential cost allocation that is currently under exploration with the Department of Health Care Policy and Financing (HCPF) and CMS.



# Fiscal Year 2015-16 Information Technology Request

## Human Services

### IT Systems Interoperability

#### SECURITY AND BACKUP / DISASTER RECOVERY

According to the department, the infrastructure will be designed to meet federal and state IT architecture, security, and business continuity requirements. Interoperability and the associated systems will follow the state cybersecurity policies set forth by the Office of Information Security. Interoperability will follow the National Institute of Standards and Technology (NIST) 800-53 requirements. The CCISS Interoperability Roadmap will follow established security protocols.

#### BUSINESS PROCESS ANALYSIS

The department's Office of Children, Youth, and Families was the recipient of a planning grant from the federal Administration for Children, and Families, Office of Child Support Enforcement, and used it to implement a sustainable, strategic pathway to connect all the internal systems, to make data and human services records available without removing the data from the source systems. The department will use the interoperability roadmap in a phased approach that will feed into a larger and more fully developed strategy.

Stakeholders were extensively engaged in the interoperability planning and will be very involved in implementation. Stakeholders include the Governor's Health IT Coordinator and representatives from HCPF, the Colorado Department of Public Health and Environment, and OIT, who meet regularly as the Health Information Technology (HIT) workgroup; the Colorado Department of Education through ongoing data sharing work; and the Department of Public Safety.

#### PROJECT SCHEDULE

	Start Date	Completion Date
Contracting	N/A	N/A
Implementation	July 2015	June 2020
Equipment	N/A	N/A
Completion		June 2020

#### OPERATING BUDGET

DHS is requesting \$1,323,360 in operating expenses, 5.0 FTE for OIT, and 15.0 FTE for DHS, as part of this IT budget request. The department says the five-year implementation plan will utilize a 90/10 federal funds split for design development and implementation. Beyond the five-year implementation, the \$1,323,360 will be included in the department's maintenance and operating budget, which the department says will receive a 75/25 federal funds match.

#### STAFF QUESTIONS AND ISSUES

1. Will there be any increases or decreases in FTE requirements to support interoperability?

*The project plan was designed for the work to be accomplished by contract vendors and not to require an increase in FTE. Existing FTE supporting our interfaces will be utilized in ongoing operations of the new environment and therefore there is no planned decrease in FTE.*

2. Who will be the participants performing the analysis for business process improvement?

*The participants will vary by process but will include all appropriate stakeholders to include the program area, external partners, IT subject matter experts, and other agency representatives as needed.*

# Fiscal Year 2015-16 Information Technology Request

## Human Services

### IT Systems Interoperability

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3. Who are the members of the Interoperability Council?

*The Interoperability Advisory Council is chaired by the CDHS Business Technology Director, has a representative from each Office within CDHS, the Governor's Health IT Coordinator, OIT Data Governance representative, OIT Architecture representative, and State IT Security representative. The Council will have specialty work groups to address technology issues related to Privacy, Security, Compliance and Health IT. The Council will be advised by CDHS Data Governance, the Governor's Data Advisory Board (GDAB) and by stakeholders through outreach conducted by the Council.*

4. This project is projected to save \$2.4 million per year and \$12.1 million over 5 years. How are these savings being reinvested in the overall enterprise architecture?

*These are projected savings based on industry averages and any savings will be reinvested in the system that was the origin of the data or interface. For example if the Automated Child Support Enforcement System interface was eliminated then the savings would be reinvested in the Automated Child Support Enforcement System.*

5. The savings listed above are related just to the replacement of the Infomover protocol and the manual interfaces. What are the projected savings on the rest of the protocols with the understanding that a validated analysis will be performed during the first year of implementation?

*The projected cost savings are \$30,000 per interface that is eliminated is based on industry averages.*

6. Why are there no contingency costs included for the project?

*The costs identified in the Interoperability plan don't have a specific line item identified as contingency costs. The consulting services line can be adjusted as needed to procure the appropriate services to meet unplanned needs.*



# Fiscal Year 2015-16 Information Technology Request

## Human Services

*Data Integration and Analysis Systems, Division of Community and Family Support*

### PROGRAM PLAN STATUS and OIT BEST PRACTICES

2016-014

Approved Program Plan?  Date Approved:

The department says it has engaged with the Governor's Office of Information Technology (OIT) since the project's inception. OIT staff have participated in the development of the conceptual framework, architecture, and budget development for the project. OIT has identified the project as a Major Information Technology Initiative. The department says the project will be overseen by OIT's Executive Governance Committee to ensure the project aligns with industry best practice and is consistent with OIT strategic direction. DHS says the project will align with OIT's enterprise health IT architecture model, which will allow OIT and DHS to create a single, comprehensive view of clients and to connect with other agencies and health information partners.

### PRIORITY NUMBERS

Prioritized By	Priority	
Dept/Inst	4 of 6	
OSP/B	8 of 10	Prioritized and recommended for funding.

### PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
FF	\$0	\$436,000	\$0	\$0	\$436,000
GF	\$0	\$1,200,949	\$0	\$0	\$1,200,949
<b>Total</b>	<b>\$0</b>	<b>\$1,636,949</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,636,949</b>

### ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$1,500,452	\$0	\$0	\$1,500,452
Construction	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$0	\$0	\$0	\$0	\$0
Software Acquisition	\$0	\$136,497	\$0	\$0	\$136,497
<b>Total</b>	<b>\$0</b>	<b>\$1,636,949</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,636,949</b>

### PROJECT STATUS

This is a new, never-before requested project.

### PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Human Services (DHS) is requesting a combination of state funds and federal funds spending authority to develop data systems for the Division of Community and Family Support (DCFS). The department says the project will allow for the effective tracking of data at the child level and will integrate data across all Office of Early Childhood (OEC) programs. The project will provide an integrated system for seven programs within OEC, replace some existing systems, and complement the Trails system and the Child Care Automated Tracking System (CHATS). The project will also build upon the Early Intervention Database that is currently under construction and



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## Human Services

### *Data Integration and Analysis Systems, Division of Community and Family Support*

integrate the Trails and CHATS systems, while eliminating the use of excel spreadsheets and access databases.

The department says the system integration project will allow DHS' data to be more easily accessed and analyzed while reducing the redundancy and time lost collecting the data from existing diverse systems. The new system would allow the data to be tracked at the child level rather than in an aggregated form, as is the current systems methodology. DHS says the project will allow it to more effectively identify positive outcomes for children, perform analyses with more reliable data, and measure progress on desired outcomes.

#### PROJECT JUSTIFICATION

According to the DHS, the department uses a data-driven approach to support decision making and to allocate resources. The department says the project will allow the existing diverse systems to be integrated into one system using a single database. The development of a new data and case management system by the Early Intervention Unit provides an opportunity for other programs within DCFS to be designed and built on the same platform. DHS says that the OEC was formed to foster unity between offices within DHS and to improve integration and delivery of early childhood services. The department says that OEC currently lacks the tools to collect and analyze data across the disparate programs and systems. Each program currently maintains their own data with no integration points from a technical or governance perspective. Many programs only have aggregate data or no data at all, as opposed to child level data, making it difficult for programs to effectively manage desired outcomes and performance-based contracts.

The department says the project will allow systems to be aligned with the needs assessment for seven DCFS programs. It will also integrate: Trails; CHATS; the Colorado Childcare Licensing System (CCCLS); and other systems being developed through the Race to the Top Grant, including the Quality Rating and Improvement System (QRIS) and the Professional Development Information System (PDIS). Furthermore, the department says an integrated data system will help bridge programmatic silos and improve efficiency within the department. DHS also says the project will allow the department to better understand the relative efficacy of each intervention, as analyses will be more apparent on both a program and department level. Such data will help provide better services to clients, develop policy, and direct resources to the mix of services most likely to achieve the desired outcomes.

**Project Alternatives.** The department says the only alternative is to continue operating the existing systems separately. The department also considered building the project incrementally as modules. However, the department says economies of scale due to licensing, independent verification and validation, and project management do not support an incremental approach.

#### PROGRAM INFORMATION AND IMPLEMENTATION PLAN

According to DHS, change management, training, and stakeholder involvement are included in the proposed project plan. System users and software licenses have been identified by the department. Users will be trained on external-facing interfaces as part of the overall implementation plan.

#### COST SAVINGS / IMPROVED PERFORMANCE OUTCOMES

According to the department, improved system performance is achieved in three ways. First, the new system will allow the production of more robust data for OEC to determine the degree of achievement as it relates to desired intervention outcomes, to identify the relative efficacy, and to estimate the relative return on investment of various programs. Second, the data will allow decision makers to make quicker, more informed decisions and react to changing circumstances. Third, the data will allow OEC to more effectively use C-Stat, the department's performance management system, to develop more meaningful performance metrics, track them, and rapidly respond to emerging trends.

#### SECURITY AND BACKUP / DISASTER RECOVERY

According to the department, this IT project will be subject to the onboarding and gating process established by OIT. The gating process includes a structured review of requirements, specifications, and deliverables. Part of the gating



# Fiscal Year 2015-16 Information Technology Request

## Human Services

*Data Integration and Analysis Systems, Division of Community and Family Support*

process requires that projects meet a certain set of criteria before being allowed to move forward to the next stage, or "gate". Gate 4 includes security and recovery review, and the project will be required to meet all security and backup requirements before proceeding.

### BUSINESS PROCESS ANALYSIS

According to the department, this project will build upon the platform for the Early Intervention Case Management System, currently in development. OIT and DHS have worked together to identify requirements and integration points with other departmental systems, including the Adult Protective Services Case Management System. The department says a common platform has been identified that has the capability to support shared data resources across the department. DHS believes that this data sharing may further integrate business processes.

### PROJECT SCHEDULE

	Start Date	Completion Date
Contracting/RFP	July 2015	August 2015
Implementation	August 2015	May 2016
Equipment	NA	NA
Completion		May 2016

### OPERATING BUDGET

The project has no projected impact on state operating costs in FY 2015-16. However, the department anticipates annual ongoing operating costs of \$294,891 beginning in FY 2016-17 for software licences, e-signature licenses, and on-going maintenance and development. Of this amount, \$78,000 is anticipated to be requested as federal funds spending authority and \$216,891 from General Fund.

### STAFF QUESTIONS AND ISSUES

1. Has federal funding for this project been secured?

*Yes, the funding indicated has been determined to be allowable for the requested purpose, and available within the budget of the federal program.*





# Fiscal Year 2015-16 Information Technology Request

## Human Services

### Enterprise Content Management System

#### PROGRAM PLAN STATUS and OIT BEST PRACTICES

2016-015

Approved Program Plan?  Date Approved:

The department says it has followed the Governor's Office of Information Technology (OIT) project gating process, supports OIT's project governance methodology, and will employ best practices to achieve accurate reporting of the status and risks throughout implementation. The department will work with OIT to develop a system security and disaster recovery plan.

#### PRIORITY NUMBERS

Prioritized By	Priority	
DeptInst	5 of 6	
OSPB	9 of 10	Prioritized and recommended for funding.

#### PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
GF	\$0	\$500,400	\$502,332	\$1,517,601	\$2,520,333
<b>Total</b>	<b>\$0</b>	<b>\$500,400</b>	<b>\$502,332</b>	<b>\$1,517,601</b>	<b>\$2,520,333</b>

#### ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$269,400	\$197,832	\$604,101	\$1,071,333
Construction	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$0	\$0	\$0	\$0	\$0
Software Acquisition	\$0	\$231,000	\$304,500	\$913,500	\$1,449,000
<b>Total</b>	<b>\$0</b>	<b>\$500,400</b>	<b>\$502,332</b>	<b>\$1,517,601</b>	<b>\$2,520,333</b>

#### PROJECT STATUS

This is a new, never before requested project.

#### PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Human Services (DHS) is requesting funding to implement an enterprise strategy for managing electronic documents across the department. The project will expand licensing for an enterprise content management system already in use in the state and supported by OIT. DHS says that leveraging this software will allow it to efficiently manage electronic documents and files and formally capture business rules and processes that are currently undocumented and ad hoc.

DHS says that this project will align the department with the content management system (CMS) underlying the Colorado Operations Resource Engine (CORE), Colorado Benefits Management System (CBMS), and the Colorado Program Eligibility and Application Kit (PEAK).



# Fiscal Year 2015-16 Information Technology Request

## Human Services

### *Enterprise Content Management System*

Specifically, implementing the system will:

- create a highly efficient library of files across the department;
- automate common tasks, such as file naming, permission sharing, and retention policy management; and
- allow the department to collect and analyze data about stored documents and document processes.

#### PROJECT JUSTIFICATION

According to DHS, the department does not have a comprehensive system or governance strategy in place to manage documents and files across the agency. Many business rules and processes for content management are currently undocumented and ad hoc, and manual management of documentation requires a significant number of hours of employee time each week. The department says that it has over 30 directors who have program assistants that perform administrative processes and respond to various client concerns. These repetitive administrative functions account for 20 hours of a program assistant's weekly work. DHS says that these functions can be automated by the proposed CMS, and that it has identified over 40 specific documents and their respective workflow processes that are ready for automation. By redirecting staff time away from manual documentation management processes, DHS says that these employees will be able to focus more fully on personal interaction with clients, which will improve DHS customer service.

#### PROGRAM INFORMATION AND IMPLEMENTATION PLAN

DHS does not currently have a unified policy or strategy in place for content management. By leveraging existing content management software that is in use by the state and supported by OIT, it will be able to implement an enterprise strategy for managing electronic documents across the department.

According to DHS, during implementation the department will solicit the specific needs of agency stakeholders, including those related to file naming conventions, access rights, and document retention policies. DHS has also identified communication and training plans and will perform user acceptance testing across the department. DHS says that it has followed the OIT project gating process, supports OIT's project governance methodology, and will employ best practices to achieve accurate reporting of the status and risks throughout implementation. The department says that the implementation of the enterprise CMS will be in cooperation with OIT and will align with their enterprise health IT architecture model. It will also allow the department and OIT to connect data systems and create a single, comprehensive view of clients.

#### COST SAVINGS / IMPROVED PERFORMANCE OUTCOMES

The department says that significant efficiency gains will be achieved by automating task requirements. The department says that while this project will not result in a reduction in FTE, it will allow the department to utilize existing staff in a more efficient manner. For example, it estimates that program assistants each spend 20 hours per week performing functions that will be automated by the new system. The department believes that over 8,300 employee hours spent annually across 8 administrative offices performing manual processes will be automated and therefore available for other tasks.

#### SECURITY AND BACKUP / DISASTER RECOVERY

According to DHS, the proposed solution is cloud-hosted and vendor-provided and will be in accordance with state information technology security standards. The department will work with OIT to develop a system security plan, disaster recovery plan, sustainability plan, and other efforts to support long term success of the project.

#### BUSINESS PROCESS ANALYSIS

According to the department, many solutions were explored to improve essential business processes for routing and sharing documents. An employee engagement survey conducted in 2011 by the department of Personnel and Administration (DPA) allowed employees to voice their concerns over communication and lengthy approval



# Fiscal Year 2015-16 Information Technology Request

## Human Services

### Enterprise Content Management System

processes. DHS says that it formed an employee council to address these concerns. The council established priorities for improving the department, finding the top priority to be increasing the ease and speed of obtaining authorizations through a process known as "clearance." The council also sent a report to executive management in December 2013 detailing the significant amount of lengthy forms, steps, and approvals that cause barriers to efficiency. As a result, 18 separate clearance processes were identified and prioritized. A number of lean events were held to identify areas for process improvement that are directly related to how information is collected and shared. One such lean event was held in April 2013, which sought to improve new employee onboarding and workstation setup. Department executives and OIT management participated in the process analysis. A rapid improvement event was also held in July 2013 that resulted in an improved access request form, which provided the groundwork for a web-based form that OIT developed in 2014. In January 2014 a workgroup was established to implement the lean findings and was tasked with improving forms, reducing the amount of approvals, and automating processes. The workgroup evaluated existing tools and contrasted them with state and private sector options. Several products were evaluated, including Salesforce, DocuSign, CabinetNG, and a CMS from Perspective Solutions. This final product, which is used by the state already, proved to be the preferred solution. According to DHS it is an OIT-supported product that is user friendly and easy to configure, which will be able to incorporate and automate numerous manual processes within the department. The department estimates that there are over 40 specific documents and respective workflow processes that are ready for automation.

#### PROJECT SCHEDULE

	Start Date	Completion Date
Contracting	July 2015	August 2015
Implementation	September 2015	March 2016
Equipment	N/A	N/A
Completion		March 2016

#### OPERATING BUDGET

The project has no projected impact on state operating costs in FY 2015-16. However, the department anticipates annual ongoing operating costs of \$502,332 in FY 2016-17 and \$505,867 beginning in FY 2017-18 for system administration, licenses, and ongoing maintenance and development.

#### STAFF QUESTIONS AND ISSUES

1. How will user access to sensitive documents be controlled/managed?

*An Enterprise Content Management system is capable of defining user access to information in a very granular way. Rights and roles are established as the system and business rules are configured to support the needs of different groups. For example, facilities staff may need access to architectural and electrical schematics, while human resources staff require access to personnel records. The system makes visible only the information a user has rights to view.*

*The Department requests funding to expand licensing for the enterprise content management system already in use in the state, in part because the solution has proven to integrate with Active Directory for user authentication. When OIT Access Control creates an account for an employee granting access to email and network resources (e.g. file shares, printers, etc.), the user is also established in the Active Directory service as part of a particular business unit with rights to resources and information specified for that group. When a user logs in to the enterprise content management system it will authenticate against Active Directory, confirming the user's identity. This supports single*

# Fiscal Year 2015-16 Information Technology Request

## Human Services

### *Enterprise Content Management System*

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*sign-on so users access email, network and content with the same credentials.*

*The Department's request includes funding for a system administrator who will work with the business units and implementer to further define user roles and access to sensitive information. For example, based on user rights and document type, staff may or may not be permitted to view, export, email or print information. Every action is auditable so there is a record of who accessed what information and what they did with it. This functionality will ensure that the right people have access to the right information.*

2. It seems like this project could have been rolled into the Interoperability budget request, which has a similar scope and goal of consolidating department systems and data. Could you speak to why this was or wasn't considered?

*Both interoperability and enterprise content management will bring together the Department's information in new ways to make it more valuable.*

*Interoperability creates an environment where existing data can be viewed and analyzed across data systems. The Enterprise Content Management request is a different concept that will improve administrative work by establishing a platform to manage content and business process where none exists today.*

*Through several lean projects and rapid improvement events the Department identified these challenges:*

- *outdated paper processes makes tracking difficult;*
- *there is duplicative data entry;*
- *unclear timelines lead to last-minute emergency actions;*
- *instructions are confusing leading to (sometimes lengthy) delays;*
- *people don't know who needs to approve what;*
- *the process is inconsistent across Divisions;*
- *various versions of forms are located various places across the Department.*

*The recommendations to solve these problems include simplifying forms, reducing approvals, developing a tool to store and share forms in a common location, implementing electronic signatures, and automating document routing. An enterprise content management system will support all of these things, enabling the Department to operationalize all of the business process improvements recommended by the lean teams.*

*Both interoperability and the enterprise content management solution will advance the Department's effectiveness in unprecedented ways, but they are two distinct efforts.*



# Fiscal Year 2015-16 Information Technology Request

## Human Services

### *Child Care Automated Tracking System Enhancement*

#### PROGRAM PLAN STATUS and OIT BEST PRACTICES

2016-039

Approved Program Plan?  Date Approved:

The department says it is developing a five-year technology vision and roadmap to help the Office of Early Childhood (OEC) achieve its mission and business goals, support decision-making and prioritization of resources from the Governor's Office of Information Technology (OIT), establish OIT standards, set OIT budgets, and drive future OIT initiatives.

#### PRIORITY NUMBERS

Prioritized By	Priority	
DeptInst	6 of 6	
OSPB	10 of 10	Prioritized and recommended for funding.

#### PRIOR APPROPRIATION AND REQUEST INFORMATION

Fund Source	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
FF	\$0	\$1,533,125	\$1,458,125	\$270,000	\$3,261,250
<b>Total</b>	<b>\$0</b>	<b>\$1,533,125</b>	<b>\$1,458,125</b>	<b>\$270,000</b>	<b>\$3,261,250</b>

#### ITEMIZED COST INFORMATION

Cost Item	Prior Approp.	FY 2015-16	FY 2016-17	Future Requests	Total Cost
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$1,188,125	\$1,113,125	\$0	\$2,301,250
Construction	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$0	\$0	\$0	\$0	\$0
Software Acquisition	\$0	\$345,000	\$345,000	\$270,000	\$960,000
<b>Total</b>	<b>\$0</b>	<b>\$1,533,125</b>	<b>\$1,458,125</b>	<b>\$270,000</b>	<b>\$3,261,250</b>

#### PROJECT STATUS

This is a new, never-before requested project. DHS says this project will replace the original CHATS system, initially deployed in 2010 at a cost of \$14.7 million.

#### PROJECT DESCRIPTION / SCOPE OF WORK

The Department of Human Services (DHS) is requesting federal funds spending authority to enhance and replace major components of the Child Care Automated Tracking System (CHATS) in OEC. This project is planned for a five-year deployment using a hybrid approach that retains and enhances certain CHATS functionality and allows for replacement of selected functionality with new or current state-leveraged systems. The department says that the new system will leverage existing technologies, enhance functionality while utilizing new technology, and make needed updates to both hardware and software. This includes replacing the point-of-sale (POS) system for attendance tracking, providing easy-to-read and concise reports, and building a user-friendly environment for both providers and families.



# Fiscal Year 2015-16 Information Technology Request

## Human Services

### *Child Care Automated Tracking System Enhancement*

The hybrid solution enhances and replaces CHATS modules in a phased approach, consisting of a set of thirteen technical and non-technical initiatives to address the gaps and system requirements identified by CHATS users, providers, OIT, and OEC. These initiatives are discussed in more detail in the Program Information section.

**Source of federal funds.** The department is requesting to fund this project using the uncommitted Child Care Development Fund (CCDF) balance. The department says it receives annual grant awards from the federal Administration for Children and Families. The majority of the funding is allocated to counties and is used to fund and administer subsidized childcare assistance throughout the state. The remaining money is used for quality initiatives and administration by the state. Historically, the annual allocation is not fully spent, and the department rolls forward the unspent monies to future fiscal years. Based on the consistent roll-forward of CCDF appropriations, the department requests to use a portion of those funds for the project.

### PROJECT JUSTIFICATION

According to the DHS, the CHATS system was deployed in 2010 to update technology and address business needs related to tracking attendance, improving financial management, improving access to data, and preventing fraud. However, poor requirements gathering and development along with budget request constraints resulted in significant CHATS shortcomings that failed to meet user expectations. Some of these shortcomings include no robust reporting capability, no provider portal, and no operations and maintenance support team.

DHS says CHATS high-impact challenges include:

- functionality that does not support statewide policies, such as assessing the correct parent fees, managing unpaid parent fees, preventing manual claims, and recovering payments;
- existing functionality that does not effectively support complaints, investigations, or fraud prevention;
- many users disliking the POS system, citing technical problems, user issues with POS cards, and a burden on parents and providers;
- some providers choosing to no longer be Colorado Child Care Assistance Program (CCCAP) providers, or becoming reluctant to become providers, due to the challenges and administrative burdens of the current tracking and attendance system; and
- limited standard reports and a lack of ad hoc reporting or querying capabilities, which severely hinder state and county staff at all levels. Counties and the state have very limited access to program data to conduct program planning, monitoring, analysis, budgeting, needs assessments, and auditing.

In 2013, Deloitte Consulting was hired by the department to complete a Rapid Risk Assessment for CHATS. The assessment identified significant deficiencies, including:

- insufficient technical and policy resources;
- significant backlog of work;
- increasing system instability;
- complex system technology;
- a lack of web-based training, video-based training, or learning management systems for all users and groups;
- no capacity to add environments for troubleshooting, evaluating, and testing; and
- environmental constraints that limit the ability to develop and test new functionality.

In 2014, BerryDunn was hired by the department to perform a comprehensive needs assessment of CHATS, including an interface with other OEC systems. After extensive analysis, including stakeholder meetings, interviews with county staff and providers, an evaluation of best practices, and identifying current and future interdependences with other OEC systems, BerryDunn recommended a hybrid approach to incrementally enhance and replace current CHATS modules in a phased approach.

**Project alternatives.** According to the department, alternative projects were evaluated, including a “do nothing” approach to a full system replacement. The department says the hybrid solution of enhancing and replacing modules was determined to be the most cost-effective, most time-efficient, and least risky. Furthermore, the benefits of the hybrid approach include the ability to reuse current CHATS coding, while leveraging infrastructure and shared resources with other data systems within the department. DHS says the other alternatives failed to achieve the



# Fiscal Year 2015-16 Information Technology Request

## Human Services

### *Child Care Automated Tracking System Enhancement*

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department's desired outcomes.

If the project is not funded, the department says critical impacts include:

- persistence of gaps, affecting user support systems, maintenance activities, and governance structure with OIT;
- accumulation of "technical debt", which will eventually overwhelm the system;
- vulnerability of the POS system to ongoing maintenance and support;
- exposing the system to security vulnerabilities as most Windows-based operating systems will be at the end of their support life;
- retaining the current inefficient notice printing environment;
- the lack of decision support analytics and ad hoc reporting;
- the absence of an interface with QRIS, resulting in time-consuming manual processes;
- the absence of a more user-friendly interface;
- reduced assistance to counties to investigate complaints against providers and to manage corrective actions;
- an unimproved financial module, continuing the need for manual payments and recovering overpayments; and
- the continued failure of the system to meet the needs of families served by the department.

### PROGRAM INFORMATION AND IMPLEMENTATION PLAN

DHS says non-technical initiatives addressed by the project include:

- a comprehensive strategic technology plan to define technical priorities through active consultant engagement;
- increased staffing efficiencies that apply to the CHATS modernization plan identified through a lean process;
- additional user training, activities, and materials, as part of the business function of CCCAP; and
- planning for and implementation of attendance and benefit tracking replacement.

A non-functional technical initiative of the project is to research CHATS hardware and software, in cooperation with OIT. Functional technical initiatives include:

- designing and incorporating an electronic document management system (DMS) into CCCAP workflow;
- redesigning batch notice printing to better meet the needs of CCCAP providers and families;
- providing agile data management to better meet the needs of CCCAP providers and families; and
- improving business intelligence and predictive analytics from the current static and inflexible reporting environment.

Business initiatives include:

- providing a more robust CHATS interface with the Quality Rating and Improvement System (QRIS) and other state systems;
- developing a more friendly CHATS user interface and user experience (UI/UX) for CCCAP providers and families, in cooperation with stakeholders;
- increasing capacity to manage complaints and investigations; and
- enhancing the financial module to allow for better tracking of attendance, reconcile attendance and payments, collect overpayments, and process manual claims.

### COST SAVINGS / IMPROVED PERFORMANCE OUTCOMES

According to DHS, the BerryDunn analysis identified the hybrid solution as the most cost effective solution. If the project is not funded, DHS says the current system will be due for a lifecycle refresh in five years. Furthermore, a complete system replacement may be necessary due to the accumulation of help desk tickets and continued deterioration in system performance. As technology costs have gone up in recent years, a full system replacement in five years has the potential to be very costly to the state. A full replacement is estimated to cost \$20 to \$25 million, not including ongoing maintenance and operation. However, DHS says full replacement is deemed unnecessary at the current time, as components of the CHATS system are still able to function efficiently, making the hybrid solution



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the most cost effective, and potentially saving the state \$10 million.

The department says the project will result in several improved performance outcomes, including: an enhanced POS system for providers and CCCAP families; improved child care attendance tracking and payment reconciliation; increased access to child care-related information by end users, customers, research entities and other interested parties; increased ability for real time attendance tracking; and reduced inefficiencies and maintenance costs of the current technological environment.

#### SECURITY AND BACKUP / DISASTER RECOVERY

According to the department, OIT's Information Security Office will review the security of the modernized components of CHATS before being put into production. The backup and disaster recovery specifications will be designed in cooperation with OIT and will be built to minimize risk and ensure business continuity.

#### BUSINESS PROCESS ANALYSIS

According to the department, BerryDunn conducted an extensive business process analysis as part of the first deliverable of their engagement. The analysis included outreach with county staff, state staff, providers, information technology staff, and subject matter experts. The analysis looked at the current state as well as future technology, business process changes, and legislative initiatives. BerryDunn identified over 110 business and technology gaps that are impacted by the current CHATS system. The hybrid recommendation is tailored to address the current and evolving business process needs. Specifically, BerryDunn included a series of four "nontechnical" initiatives designed to ensure business processes are in sync with technology changes.

#### PROJECT SCHEDULE

	Start Date	Completion Date
Contracting	July 2015	August 2015
Implementation	September 2015	March 2017
Equipment	September 2015	March 2017
Completion		March 2017

#### OPERATING BUDGET

The department says there may be a need to seek additional operating funds in the future. The department has submitted an associated operating budget request, not part of this request, to the Joint Budget Committee for \$900,000 in FY 2015-16 and anticipates \$1,200,000 in on-going annual operating expenses beginning in FY 2016-17.

#### STAFF QUESTIONS AND ISSUES

1. CHATS was originally built to DHS specifications and deployed in 2010 at a cost \$14.7 million. Does the new system have the required functionality that was missing from the first CHATS deployment?

*Yes, the new system does have elements of the required functionality that was missing from the original CHATS deployment. This functionality will now support state monitoring of county adherence to plans, capture county detail plans, provide real-time electronic notifications when updated plans are ready for review, and several other critical enhancements.*



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Furthermore, the new system improves upon existing functionality in the current CHATS environment, as well as utilizing more modern technology. For example, the original system provided point-of-sale thermal paper reconciliations for providers. The functionality was delivered, however the thermal paper reports proved extremely difficult to interpret, reconcile, and store.

2. The Deloitte Consulting report called out several deficiencies including “complex system technology” and “lack of training”. What planning processes have changed that would affect this project for the better?

The BerryDunn assessment also confirms the deficiencies related to complexity and lack of training identified in the Deloitte Consulting report. Their recommendation calls for two specific initiatives to address these concerns. First, NT#1- Office of Early Childhood Strategic Technology Plan is the cornerstone of the projects' success. The consultants recommended, and the Office is developing a “5-year technology vision and roadmap to help Office of Early Childhood achieve its mission and business goals, support decision-making and prioritization of OIT resources, establish Office of Information Technology standards, set Office of Information Technology budgets, and drive future Office of Information Technology initiatives”. This strong governance will ensure that the appropriate technology is in alignment with the Office's strategic priorities. Additionally, the Department has built Independent Validation and Verification (IV&V) and certified project management into the project budget. These resources serve as an additional layer of project control to ensure the project meets specifications and deliverables.

The second initiative, NT#3 CHATS User Training, “establishes training as a core Colorado Child Care Assistance Program business function supported through training planning, revision of training materials and user documentation, and ongoing assessment of training needs and activities”. This initiative addresses the need for immediate training for the existing system, as well as a robust, user-friendly training module in the new system.

3. The previous deployment of CHATS was allocated only 3.5 of the requested 18 FTEs (reduced by 14.5 FTEs) due to budget restrictions, “which proved to be a critical defect in implementation, and the system was never fully able to recover.” This new project does not contain any request for new FTEs for the ongoing maintenance and support of the system. Had the originally shorted 14.5 FTEs been funded would this new CHATS enhancement and replacement project still have been needed?

It is difficult to speculate as to whether proper maintenance would have avoided system replacement. By the time the new system is fully operational, the original CHATS will be close to 10 years old, and ready for a lifecycle refresh from the technology platform standpoint. The lack of adequate staffing to perform ongoing maintenance and operation support prevented the Department from making ongoing enhancements.

To avoid similar defects with the new system, the Department is following the BerryDunn recommendation to utilize contract staff to significantly increase ongoing operation and maintenance support with the current system during the hybrid transition, as well as when the hybrid system is fully operational.