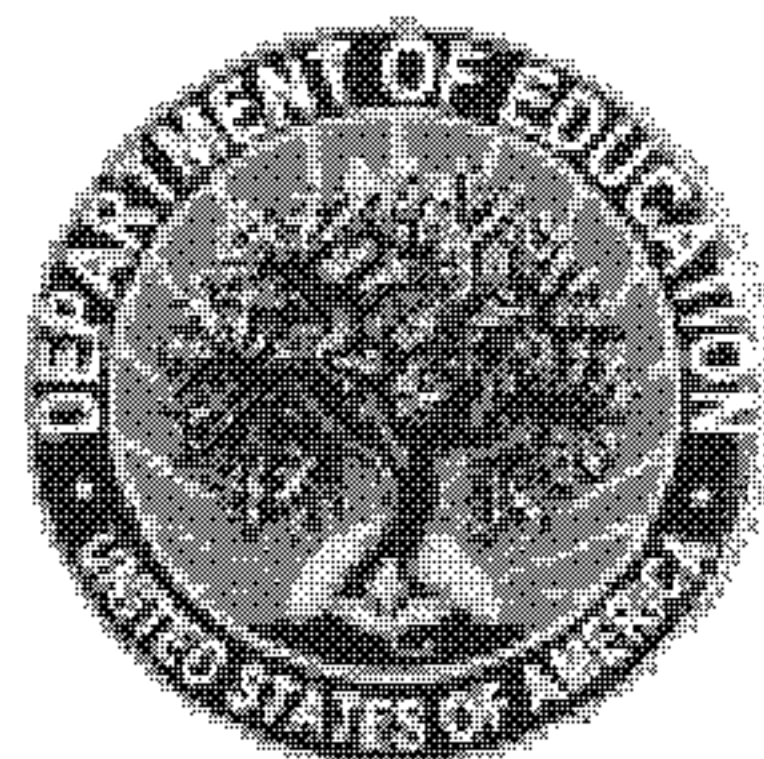


# **U.S. Department of Education**

Washington, D.C. 20202-5335



## **APPLICATION FOR GRANTS UNDER THE**

**STATEWIDE LONGITUDINAL DATA SYSTEM RECOVERY ACT GRANTS  
CFDA # 84.384A  
PR/Award # R384A100029**

Closing Date: NOV 19, 2009

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**Application for Federal Assistance SF-424**

Version 02

* 1. Type of Submission	* 2. Type of Application:* If Revision, select appropriate letter(s):	
<input type="checkbox"/> Preapplication	<input checked="" type="checkbox"/> New	
<input checked="" type="checkbox"/> Application	<input type="checkbox"/> Continuation	* Other (Specify)
<input type="checkbox"/> Changed/Corrected Application	<input type="checkbox"/> Revision	

* 3. Date Received:	4. Applicant Identifier:
12/3/2009	Colorado Department of Education - NCES ID #008

5a. Federal Entity Identifier:	* 5b. Federal Award Identifier:
	NA

**State Use Only:**

6. Date Received by State:	7. State Application Identifier:

**8. APPLICANT INFORMATION:**

\* a. Legal Name: Colorado Department of Education

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
840644739	187406538

**d. Address:**

* Street1:	201 E. Colfax Ave.
Street2:	
* City:	Denver
County:	Denver
State:	CO
Province:	
* Country:	USA
* Zip / Postal Code:	80203

**e. Organizational Unit:**

Department Name:	Division Name:
Administration and Operations	Information Management Services

**f. Name and contact information of person to be contacted on matters involving this application:**

Prefix:	Mr.	* First Name:	Daniel
Middle Name:	E		

\* Last Name: Domagala

Suffix:

Title: Chief Information Officer

Organizational Affiliation:

\* Telephone Number: (303)866-6961 Fax Number: (303)866-6888

\* Email: DOMAGALA\_D@CDE.STATE.CO.US

**Application for Federal Assistance SF-424**

Version 02

**9. Type of Applicant 1: Select Applicant Type:**

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**10. Name of Federal Agency:**

U.S. Department of Education

**11. Catalog of Federal Domestic Assistance Number:**

84.384A

CFDA Title:

Statewide Longitudinal Data System Recovery Act Grants

**\* 12. Funding Opportunity Number:**

ED-GRANTS-072909-001

Title:

Institute of Education Sciences;(IES) Grant Program for Statewide Longitudinal Data Systems Recovery Act Program (ARRA) CFDA 84.384A

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

**\* 15. Descriptive Title of Applicant's Project:**

Project SchoolView envisions a flexible enterprise P-20 information and knowledge management system that will equip users to manage and use information for informed decision-making

Attach supporting documents as specified in agency instructions.

**Attachment:**

Title :

File :

**Attachment:**

Title :

File :

**Attachment:**

Title :

File :

**Application for Federal Assistance SF-424**

Version 02

**16. Congressional Districts Of:**

\* a. Applicant: State of Colorado

\* b. Program/Project: State of Colorado

Attach an additional list of Program/Project Congressional Districts if needed.

**Attachment:**

Title :

File :

**17. Proposed Project:**

\* a. Start Date: 7/1/2010

\* b. End Date: 6/30/2013

**18. Estimated Funding (\$):**

a. Federal	\$ 17886993
b. Applicant	\$ 0
c. State	\$ 0
d. Local	\$
e. Other	\$ 0
f. Program Income	\$ 0
g. TOTAL	\$ 17886993

**\* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

a. This application was made available to the State under the Executive Order 12372 Process for review on .

b. Program is subject to E.O. 12372 but has not been selected by the State for review.

c. Program is not covered by E.O. 12372.

**\* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

Yes  No

**21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

\*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**

Prefix: Mr. \* First Name: Robert

Middle Name:

\* Last Name: Hammond

Suffix:

Title: Deputy Commissioner, Colorado Department of Education

\* Telephone Number: (303)866-6822 Fax Number: (303)866-6888

\* Email: HAMMOND\_R@CDE.STATE.CO.US

\* Signature of Authorized Representative:

\* Date Signed:

**Application for Federal Assistance SF-424**

Version 02

**\* Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.



**U.S. DEPARTMENT OF EDUCATION**

**BUDGET INFORMATION**

**NON-CONSTRUCTION PROGRAMS**

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:  
Colorado Department of Education

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

**SECTION A - BUDGET SUMMARY**  
**U.S. DEPARTMENT OF EDUCATION FUNDS**

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2. Fringe Benefits	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
3. Travel	\$ 10,000	\$ 10,000	\$ 10,000	\$ 0	\$ 0	\$ 30,000
4. Equipment	\$ 337,500	\$ 337,500	\$ 0	\$ 0	\$ 0	\$ 675,000
5. Supplies	\$ 48,000	\$ 48,000	\$ 48,000	\$ 0	\$ 0	\$ 144,000
6. Contractual	\$ 5,600,983	\$ 6,820,983	\$ 3,318,735	\$ 0	\$ 0	\$ 15,740,701
7. Construction	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
8. Other	\$ 378,583	\$ 378,583	\$ 378,583	\$ 0	\$ 0	\$ 1,135,749
9. Total Direct Costs (lines 1-8)	\$ 6,375,066	\$ 7,595,066	\$ 3,755,318	\$ 0	\$ 0	\$ 17,725,450
10. Indirect Costs*	\$ 57,414	\$ 57,414	\$ 46,715	\$ 0	\$ 0	\$ 161,543
11. Training Stipends	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
12. Total Costs (lines 9-11)	\$ 6,432,480	\$ 7,652,480	\$ 3,802,033	\$ 0	\$ 0	\$ 17,886,993

**\*Indirect Cost Information (To Be Completed by Your Business Office):**

If you are requesting reimbursement for indirect costs on line 10, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal government?  Yes  No

(2) If yes, please provide the following information:

Period Covered by the Indirect Cost Rate Agreement: From: 7/1/2009 To: 6/30/2010 (mm/dd/yyyy)

Approving Federal agency:  ED  Other (please specify): \_\_\_\_\_ The Indirect Cost Rate is 10.5%

(3) For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:

Is included in your approved Indirect Cost Rate Agreement? or,  Complies with 34 CFR 76.564(c)(2)? The Restricted Indirect Cost Rate is 0%



**U.S. DEPARTMENT OF EDUCATION**  
**BUDGET INFORMATION**  
**NON-CONSTRUCTION PROGRAMS**

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:  
Colorado Department of Education

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

**SECTION B - BUDGET SUMMARY**  
**NON-FEDERAL FUNDS**

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2. Fringe Benefits	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
3. Travel	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
4. Equipment	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
5. Supplies	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
6. Contractual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
7. Construction	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
8. Other	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
9. Total Direct Costs (lines 1-8)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
10. Indirect Costs	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
11. Training Stipends	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
12. Total Costs (lines 9-11)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0



## ASSURANCES - NON-CONSTRUCTION PROGRAMS

Standard Form 424B (Rev.7-97)

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management, and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. "4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. "1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. '794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. "276a to 276a-7), the Copeland Act (40 U.S.C. '276c and 18 U.S.C. "874) and the Contract Work Hours and Safety Standards Act (40 U.S.C. " 327-333), regarding labor standards for federally assisted construction sub-agreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. "1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. "7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. "1721 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance

of 1975, as amended (42 U.S.C. " 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) " 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. " 290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. ' 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with the provisions of the Hatch Act (5 U.S.C. "1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. '470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. "469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. "2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. "4801 et seq.) which prohibits the use of lead- based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

**Signature of Authorized Certifying Representative:**

**Name of Authorized Certifying Representative:** Robert K. Hammond

**Title:** Deputy Commissioner

**Date Submitted:** 12/02/2009

### Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

<b>1. Type of Federal Action:</b> <input type="checkbox"/> Contract <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Loan <input type="checkbox"/> Loan Guarantee <input type="checkbox"/> Loan Insurance	<b>2. Status of Federal Action:</b> <input checked="" type="checkbox"/> Bid/Offer/Application <input type="checkbox"/> Initial Award <input type="checkbox"/> Post-Award	<b>3. Report Type:</b> <input checked="" type="checkbox"/> Initial Filing <input type="checkbox"/> Material Change <b>For Material Change only:</b> Year: 0 Quarter: 0 Date of Last Report:
<b>4. Name and Address of Reporting Entity:</b> <input checked="" type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier, if known: 0 Name: Colorado Department of Education Address: 201 E. Colfax Ave. City: Denver State: CO Zip Code + 4: 80203-1799  Congressional District, if known: 01	<b>5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:</b>  Name: Address: City: State: Zip Code + 4: -  Congressional District, if known:	
<b>6. Federal Department/Agency:</b> U.S. Department of Education	<b>7. Federal Program Name/Description:</b> Statewide Longitudinal Data Systems Gran  CFDA Number, if applicable: 84.384	
<b>8. Federal Action Number, if known:</b> ED-GRANTS-072909-001	<b>9. Award Amount, if known:</b> \$0	
<b>10. a. Name of Lobbying Registrant</b> (if individual, last name, first name, MI): Address: City: State: Zip Code + 4: -	<b>b. Individuals Performing Services</b> (including address if different from No. 10a) (last name, first name, MI): Address: City: State: Zip Code + 4: -	
<b>11.</b> Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.	Name: Robert K. Hammond Title: Deputy Commissioner Applicant: Colorado Department of Education Date: 12/02/2009	
<b>Federal Use Only:</b>		Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

## CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal Loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance.

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee or any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

**APPLICANT'S ORGANIZATION**

Colorado Department of Education

**PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE**

Prefix: Mr.      First Name: Robert      Middle Name: K  
Last Name: Hammond      Suffix:  
Title: Deputy Commissioner

Signature: \_\_\_\_\_      Date: 12/02/2009

**SUPPLEMENTAL INFORMATION  
REQUIRED FOR  
DEPARTMENT OF EDUCATION GRANTS**

**1. Project Director:**

Prefix:      \* First Name:              Middle Name:              \* Last Name:              Suffix:  
Mr.          Daniel                              E                              Domagala

Address:

\* Street1:              201 E. Colfax Ave.  
Street2:  
\* City:                      Denver  
County:  
\* State:                      CO\* Zip / Postal Code: 80203 \* Country: USA

\* Phone Number (give area      Fax Number (give area  
code)                              code)  
(303)866-6961                      (303)866-6888

Email Address:

DOMAGALA\_D@CDE.STATE.CO.US

**2. Applicant Experience**

Novice Applicant                       Yes                       No                       Not applicable

**3. Human Subjects Research**

Are any research activities involving human subjects planned at any time during the proposed project period?

Yes                       No

Are ALL the research activities proposed designated to be exempt from the regulations?

Yes      Provide Exemption(s) #:

No      Provide Assurance #, if available:

**Please attach an explanation Narrative:**

**Attachment:**

Title :  
File :

# **Project Narrative**

## **Project Narrative - Project Abstract**

Attachment 1:

Title: **Project Narrative - Project Abstract** Pages: **1** Uploaded File: **SLDS abstract-FINAL.doc**

## ABSTRACT

The Colorado Department of Education (CDE), working in collaboration with the Governor's Office of Information Technology (OIT), the Governor's Office of Policy and Initiatives, and the Colorado Departments of Higher Education, Human Services and Labor End employment, proposes to build a state longitudinal data system that meets the required system elements and capabilities set out in the Request for Applications and the demands of its ground-breaking P-20 education reform agenda. This agenda, which has been underway for several years, implements true P-20 education alignment across the state's education systems and is anchored by a common definition of postsecondary and workforce readiness to ensure students exit prepared for postsecondary education and workforce success. Moreover, the Colorado General Assembly and the Office of Governor Ritter have made inter-departmental data sharing a state priority by way of legislation that authorizes the development of interdepartmental data sharing and the creation of a state-level data sharing advisory council. The Colorado approach to educational alignment seeks to produce meaningful information on educator and principal effectiveness through the development of the state's first educator identifier system, which will be used to link all Colorado educators, students, and educator preparation programs for the purposes of individual and program evaluation. Colorado also seeks to expand its breakthrough analytical and data visualization tools to support meaningful accountability, transparency and strategic investment. In short, Colorado is among the national leaders in education reform and cross-system alignment. However, in spite of its impressive reform-oriented agenda, in the absence of SLDS grant funds to implement proposed data capture and interoperability solutions, the potential of the state's agenda will not be fully realized.

Project SchoolView™ envisions a flexible enterprise P-20 information and knowledge management system that will equip users to manage and use information for informed decision-making ensuring all students in Colorado are ready for postsecondary or workforce success. It addresses the following strategic priorities:

- **CAPTURE:** P-20 student-focused data are effectively and efficiently collected across multiple data sources including student information, programmatic classifications and educator quality.
- **LINK:** Data is effectively shared and exchanged across multiple agencies (human services, K-12, higher education, labor, corrections) and levels (district, state, federal) to promote accountability, inform policy and ensure a holistic view of student success.
- **PROVIDE:** Stakeholders (parents/guardians, students, educators, policymakers and researchers) have access via interactive portals to understandable, timely and reliable information, online content and collaboration tools to inform and improve student performance.

Colorado's Race to the Top application will build on this foundation by focusing on building the performance capacity of stakeholders to leverage information to inform development, policy, programs and practice to drive increased student performance through professional development, innovative programs and improved instructional practices. Project SchoolView™ holds the potential to transform the delivery and evaluation of education in Colorado, offering a national model that advances the use of more robust and timely performance data throughout the P-20 education system and capitalizes on the state's impressive student-centered education reforms.

# Project Narrative

## Project Narrative - Project Narrative

Attachment 1:

Title: **Project Narrative** Pages: **30** Uploaded File: **SLDSProjectNarrative-FINAL.doc**





**Application of the Colorado Department of Education  
for**

**Project SchoolView™**

CFDA 84.384

Submitted to the U.S. Department of Education  
Institute for Educational Sciences  
December 4, 2009

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## I. NEED FOR THE PROJECT

### A. INTRODUCTION: CONTEXT AND VISION

*“With a collaborative spirit, with a **collaborative platform** where people can **upload data, explore data, compare solutions, discuss the results, build consensus**, we can engage passionate people, local communities, media and this will raise - incredibly - the amount of people who can understand what is going on. And this would have fantastic outcomes: the **engagement of people**, especially new generations; it would **increase knowledge, unlock statistics, improve transparency and accountability of public policies, change culture, increase numeracy, and in the end, improve democracy and welfare.**”*

Enrico Giovannini, Chief Statistician, Organisation for  
Economic Co-Operation and Development

Educators and policymakers in Colorado agree that data sharing holds one of the keys to unlocking the state’s great potential to dramatically improve student outcomes. Collectively, they challenge the state to imagine an education system in which educators use analytic tools and collaborative platforms available at their desktops to tailor instruction that meets the needs of individual students. They imagine decision-makers using data to identify the most critical areas for strategic investment, and to diagnose specific issues associated with student success, such as educator preparation, instruction and curricula. They imagine policymakers using data across human services, education and labor and employment agencies to understand students’ readiness for key transitions from preschool through high school and into college and careers and to provide appropriate interventions. They imagine parents/guardians and community members using data to define student, school, district and state success with transparent and broadly accepted performance measures. And they imagine a holistic approach to education from pre-K through the labor force that continually diagnoses and then responds to barriers to student success and improves the development of the state’s human capital and economic development. This is the future Colorado’s educators and policymakers demand, and it can be created with an investment of SLDS grant funds.

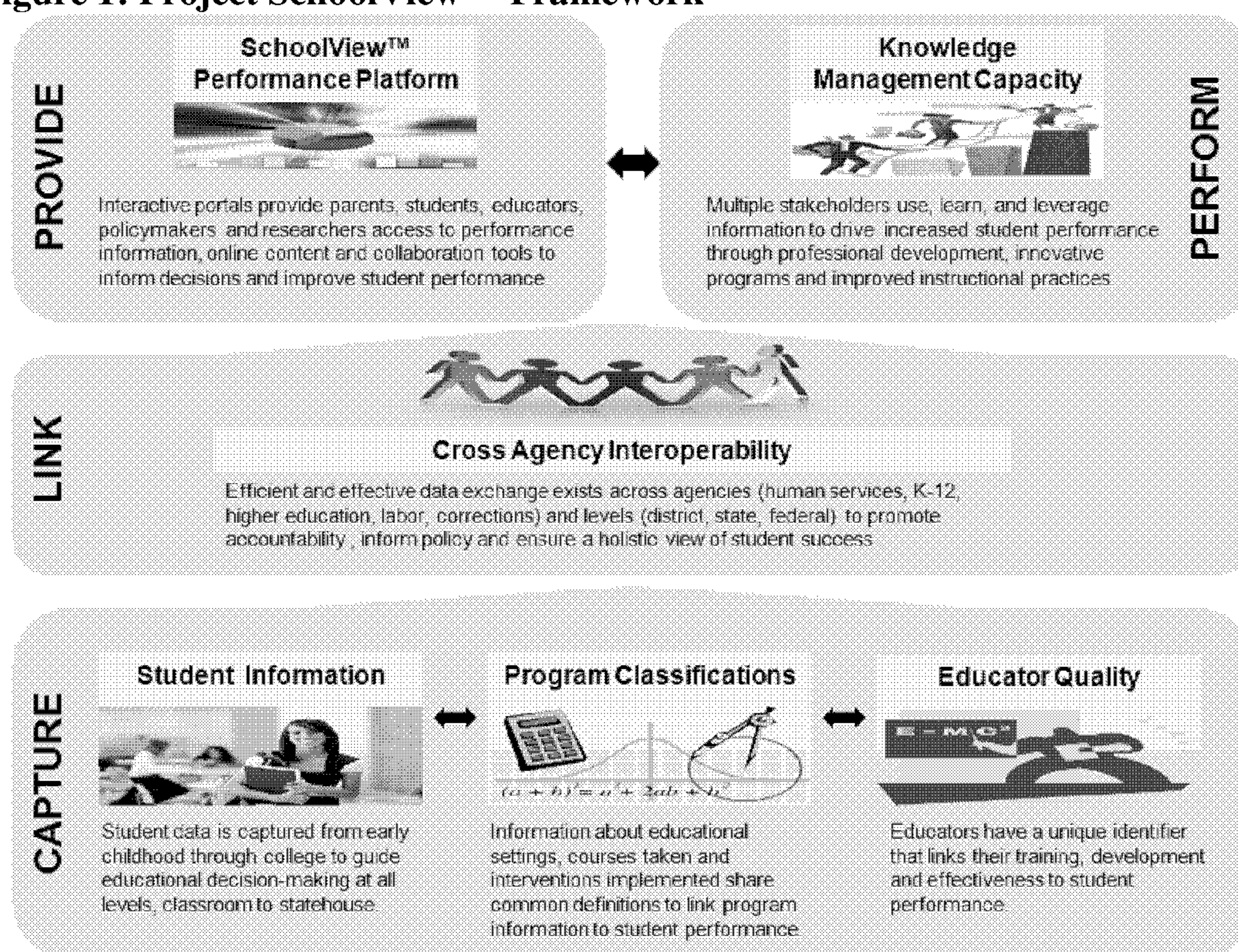
**The Colorado Context.** Colorado currently serves more than 820,000 increasingly diverse public school students in grades P-12, and nearly 220,000 in public higher education. Consistent with its tradition of local control, Colorado’s 178 school districts vary dramatically in size, demographics, capacity, reform history and technological sophistication. District enrollment, for example, ranges from a low of 54 students to a high of 86,000 students; more than half of all students are served in the 10 largest districts. In the state’s early childhood education system, infants, toddlers and preschoolers are served in a range of publicly funded school- and community-based settings primarily by three state agencies. The Colorado Department of Higher Education (CDHE) coordinates policy and state resources for the state’s 27 public institutions as well as several hundred private and proprietary schools, seeking to ensure that higher education is accessible and affordable to all Coloradoans. Nearly 86 percent of students enrolled in the state’s twelve four-year and fifteen two-year institutions are Colorado residents.

Student achievement trends in Colorado have remained relatively flat over time and are characterized by persistent achievement and participation gaps based on race/ethnicity and socioeconomic status. The “Colorado Paradox” describes the challenging scenario in which Colorado has one of the most educated citizenries in the nation, but also one of the lowest college completion rates among native born citizens. Because of the state’s quickly changing demographics, a large influx of educated adults has created wide disparities in educational attainment. In fact, according to the National Center for Higher Education Management Systems, Colorado has the widest gap in educational attainment between white and non-white adults of any state in the nation. Colorado educators, policymakers, and business leaders unanimously agree that these disparities are unconscionable and must be addressed.

In response, the state has enacted a ground-breaking reform agenda focused on P-20 education alignment, with a commitment to prepare students to be ready at exit for the next stage of their education and ultimately for postsecondary and workforce participation. Students demonstrating postsecondary and workforce readiness (PWR) on the state’s soon to be adopted PWR assessment will be entitled to enroll in Colorado’s higher education system. Implementation of these reforms requires (and state law now authorizes) an expanded state longitudinal data system that comprehensively meets the required elements and capabilities set out in the RFA; expansions that will not just support but *drive* improved student performance through knowledge management at all levels, from the classroom to the statehouse.

Here, Colorado confronts a gap of a different sort: the gap between the architecture and capabilities of Colorado’s current data system and the ones required to support robust knowledge management in an aligned P-20 education system. Before stakeholders can apply information in educational decision making (identifying opportunities for continuous improvement, effective interventions, return on investment), the SLDS needs to capture, link and provide P-20 data in forms that are actionable, credible and timely. As shown in the figure below, Project SchoolView™ is designed to develop the infrastructure to do just that, positioning Colorado to implement P-20 reforms that focus on preparing the youngest learners for success in school, improving K-12 outcomes through innovation and quality teaching, and graduating more students from college who are prepared for 21<sup>st</sup> Century jobs. Colorado’s Race to the Top application will build upon this foundational work with its focus on providing outstanding digital content to support performance and knowledge management, education capacity, school input and blended learning models.

**Figure 1: Project SchoolView™ Framework**



**B. NEED: THE GAP BETWEEN CURRENT CAPACITY AND REQUIRED SLDS CAPABILITIES**

Appendix C describes the current status of the seven required capabilities and twelve essential elements of Colorado’s data system by item. Need is the distance between the current capacity and functionality of this system and the future system that both meets the required elements/capabilities in the RFA and is robust enough to support the state’s ambitious P-20 reform agenda; an agenda that demands cross-agency collaboration, facilitates continuous improvement, and is fueled by the application and generation of knowledge by multiple stakeholders to advance student performance. Table 1 below defines Colorado’s great need in terms of this distance.

Colorado is at a crossroads. Implementation of a cutting-edge longitudinal data system, technology infrastructure, and highly engaging and value-added data visualization tools will drive innovation and improved student performance through performance management at all levels, from the classroom to the statehouse. Authorizing legislation and a progressive policy framework is in place (refer to Appendix A for an overview). Preliminary study and planning related to system needs and design have been completed. The SLDS grant will provide the financial resources to dramatically accelerate the pace of progress and propel the state’s forward momentum. The converse is also true: without the investment of outside resources, Colorado will be unable to adequately capture, manage and act upon available information to make dramatic improvements in student outcomes.

**Table 1. Colorado’s SLDS Needs**

	<b>Moving From</b>	<b>Moving To</b>
<b>CAPTURE</b>	<ul style="list-style-type: none"> <li>• Program-focused data</li> <li>• Manual data submissions</li> <li>• Single-point-in-time data exchanges</li> <li>• Collection silos</li> <li>• Multiple collection points for same data</li> <li>• Data push from local education agencies (LEAs)</li> <li>• K-12 longitudinal data</li> <li>• Non-standardized file formats</li> <li>• Inconsistent data element definitions across data submissions</li> <li>• Educator data limited to licensure information and not linked to student data</li> <li>• Cumbersome and time-consuming process for federal data submission</li> <li>• Lack of common course codes</li> </ul>	<ul style="list-style-type: none"> <li>• Student/Educator-focused data</li> <li>• Web-automated services</li> <li>• Transactional system; data updated continuously</li> <li>• Enterprise view of data</li> <li>• Single collection of data for multiple uses</li> <li>• Data pull from state</li> <li>• P-20 longitudinal data</li> <li>• Standardized file formats</li> <li>• Consistent data element definitions, anchored in national standards</li> <li>• Educator identifier and educator-student link support range of data related to educator-student cycle</li> <li>• Automation of federal data submission</li> <li>• Common course codes link program information to student performance</li> </ul>
<b>LINK</b>	<ul style="list-style-type: none"> <li>• File-based system</li> <li>• Lack of standards/trust is a barrier to interagency data exchange</li> <li>• Lack of consensus among stakeholders regarding meaning and use of data</li> <li>• Data related to P-20 education siloed in various state agencies</li> <li>• Relevant data fractionated due to different collection points; state agencies acting in isolation</li> <li>• Colorado’s K-12 data system does not link to other state systems</li> </ul>	<ul style="list-style-type: none"> <li>• System interoperability</li> <li>• Governed by standards; high level of trust in data among stakeholders</li> <li>• Transparency regarding data definitions, usage and flow</li> <li>• Cross-agency data sharing through application of common standards</li> <li>• Holistic view of human capital development</li> <li>• Cross-state linkages enable multistate collaboration</li> </ul>
<b>PROVIDE</b>	<ul style="list-style-type: none"> <li>• Assessment data limited to results of annual state assessment (CSAP)</li> <li>• Aggregate (state-level) data focus</li> <li>• State assessment results have six-month time lag</li> <li>• Researchers and CDE staff have limited access to student-level data</li> </ul>	<ul style="list-style-type: none"> <li>• System includes formative/interim assessment data as well</li> <li>• Student-level data focus</li> <li>• Timely reporting of results to inform instruction</li> <li>• Researchers and CDE staff have access to student-level data (with appropriate privacy protections) to support school/district improvement</li> </ul>

	<ul style="list-style-type: none"> <li>• Limited ability to benchmark state or LEA performance to other states/LEAs</li> <li>• SchoolView™ provides information portal for various groups of users</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-state performance benchmarking enhances accountability</li> <li>• Project SchoolView™ is a collaboration platform as well as one-stop shop for data</li> </ul>
<b>PERFORM</b>	<ul style="list-style-type: none"> <li>• Mostly static annually-updated data available on CDE website</li> <li>• Difficult for users to interpret and act upon</li> <li>• Compliance-oriented focus</li> <li>• Looking back – post mortem</li> <li>• Uneven capacity across and within LEAs regarding the use of data in decision-making</li> <li>• Accreditation of educator preparation programs based on inputs and processes</li> <li>• State data system does what it was built to do</li> </ul>	<ul style="list-style-type: none"> <li>• Data updated regularly offering more timely information based on current enrollment</li> <li>• Interactive, analytic tools bring data alive for action by users</li> <li>• Performance management focus</li> <li>• Looking forward – using data proactively and for diagnostic and predictive purposes</li> <li>• Users have the knowledge and commitment to analyze data, apply information to education decisions and to create and advance knowledge through collaboration</li> <li>• Accreditation of educator preparation program based on outcomes, including student learning results</li> <li>• State data system is nimble, dynamic and able to respond to emerging needs and opportunities</li> </ul>

**How SLDS Needs Were Identified.** The Colorado General Assembly commissioned a major study of the state’s education data infrastructure in 2006; the final report was released in December 2007. Conducted by an independent entity, the North Highland Company, this comprehensive review of Colorado's educational data systems included information on the requirements and methods with which existing data are collected, the hardware and software being used at the local and state levels, and the capability of school districts to share data with each other and to improve access to appropriate state-level data. The study also examined skill gaps and the appropriateness of staffing levels at CDE. The study highlighted the substantial resources demanded of LEAs to satisfy reporting requirements using the existing data system and the need to involve local leaders in conversations about the future evolution of the state data system.

The road map produced in this report has facilitated and focused discussion among branches of state government, state agencies, and education stakeholders about data system needs and possible next steps in the system’s evolution. Building on this study, the Information Technology Capacity Analysis was completed earlier this year by the regional education research and service agency,

WestEd. This study focused on the capacity of CDE staff to meet the current and anticipated future demands related to enterprise data collection and management. In response, CDE made major organizational changes to its Information Management Services unit (described in Section IV) which position the department to effectively implement Project SchoolView™.

In preparation for the current SLDS award cycle, CDE retained industry-recognized experts in data architecture and costing strategies to assist in identifying ambitious but realistic objectives for enhancing the existing data system, framing specific strategies for their attainment, and developing cost-effective budgets. Finally, CDE sought input from a diverse group of stakeholders throughout the grant development process, including a day-long summit on October 14, 2009. Summit participants reviewed a draft of the application and weighed in on its key themes and proposed outcomes. In addition to producing input that enhanced the application, the summit strengthened the political will required to realize the Project SchoolView™ vision.

### C. MOVING FROM: COLORADO'S CURRENT DATA SYSTEM

This section provides a narrative of the current programs and efforts within Colorado to improve student performance management. Refer to Appendix A for a pictorial representation.

**Collection.** CDE has developed and deployed a multi-layered data collection and reporting system. This system is “collection driven,” developed to fulfill legislative and regulatory requirements to report specific data sets to given stakeholders. Its major components include:

- **The Automated Data Exchange (ADE)**, through which school districts submit data electronically via a secure Web interface or Web-based forms.
- **The State Education database** and other legacy systems that stores collected school and student level data.
- **The Education Data Warehouse**, extracted from the State Education database, through which accountability reports and other information are generated. Data is loaded into the Warehouse and data marts using Extract, Translate and Load (ETL) processes. Initially developed to support school accountability reporting, the warehouse is now a comprehensive repository of state education data.
- **Records Integration Tracking System**, a system that generates unique student IDs. Any student included in a data collection must have a state-assigned student ID.

Colorado LEAs comply with over 125 collections annually at various times throughout the year, often using different file formats. To prepare for submission, LEAs validate and extract required data into collection specific file formats that often change yearly based on new rules or criteria from the state, and manage vendors to ensure the extracts work from their different student information systems. To submit the data to the state, LEAs log into the ADE system and load the file. If there is a problem with the data or file, LEAs must fix the issue and then prepare and reload the entire file again (and sometimes repeatedly) until the file is accepted.

The data collection processes currently employed by LEAs range broadly in sophistication. At one end are highly automated districts that can extract collection data from their own systems of record such as Student Information Systems, translate that data into the format required by the



CDE and upload the data to the CDE. At the other end are districts that extract from small Access or Excel systems or that use downloaded Excel.

***Student Identifier.*** In November 2002, CDE implemented a unique student identifier (the State Assigned Student ID, or SASID) for all public P-12 school students. This system provides schools the ability to validate and/or generate student IDs when a student enrolls in a district. The SASID is attached and encrypted, and personal information is removed for student level data reported to CDE. Legislation enacted in 2006 required the higher education system to adopt the use of the student identifier for the purpose of sharing student data across the state's data systems. Legislation enacted in 2008 expanded the use of IDs by requiring the assignment of unique identifiers to students enrolled in publicly funded early childhood education programs.

***Federal Reporting.*** CDE, through its operational data store and Education Data Warehouse, provides the US Department of Education with the information to meet current state and federal reporting requirements, including EDFacts, accountability reporting, and dropout reporting. The current process for gathering and correlating the appropriate data is time consuming and often difficult. At this time, only 50% of the data required for federal reporting exists in the warehouse. The remainder is located in manual reports and must be associated and validated prior to submission.

***Interoperability.*** CDE and CDHE currently do not have access to shared data between their respective systems. Instead, the agencies agree to provide data to the other through a memorandum of understanding and share data through the exchange of CDs. Similarly, the current system architecture does not allow CDE and other state agencies that maintain data related to the P-20 education system (Departments of Labor and Employment, Public Health and Environment, Human Services, Corrections, Revenue) to share data between their respective systems. In the absence of data sharing, educators serving a student who moves through public schools, the juvenile justice system and community college cannot access the student's complete educational records. In the absence of data sharing, the data system cannot provide information to inform complex policy questions that cut across education, workforce, and economic development contents. Significantly, Colorado's legislative framework now demands the collaboration required to produce these types of information and to promote accountability, inform policy and ensure a holistic view of student success.

**Higher Education.** CDHE's student unit record data system was first implemented in the mid-1980s as a part of the accountability movement in public higher education. The system was mandated by state legislation and tracks students from application at any public institution to graduation on a semester by semester basis. Reports are continuously designed, refined, and updated in collaboration with representatives from the higher education institutions. The data collections are stored by CDHE in a data warehouse and static reports on important higher education indicators are produced and made accessible on the CDHE website. CDHE also makes available simple online querying capability for basic aggregate higher education statistics.

CDHE is responsible for collecting institutional data from Colorado institutions of higher education including information on admissions, enrollment, credit hours, remediation, educator

preparation programs, degrees and credentials earned and other indicators. Through an agreement with CDE beginning in 2008, CDHE receives the state assigned K-12 student IDs (SASIDs) which allows CDHE staff to match records for students from a Colorado public high school. These records are used in processing applications to the Colorado Opportunity Fund, a postsecondary stipend for Colorado students, and in Career and Technical Education reporting.

**Early Childhood Education.** Increasing the quality and availability of early childhood education is a key focus in the state's P-20 education agenda, toward the end of ensuring that children are ready to learn when they enter kindergarten. Data on children who receive publicly-funded early childhood education services are decentralized, currently collected and maintained by three different state agencies. The Colorado Department of Human Services (DHS) maintains the largest data set. An individual child may have records in more than one of the systems, none of which are capable of being correlated to the other so as to identify all services provided to the child. A unique identifier is required to collect information about the early childhood services young children receive, to link to information about other programs in which they and their families are enrolled, and to identify early childhood programs that are associated with strong school readiness outcomes. DHS comes to this collaboration in the early stages of an initiative to integrate multiple data sets across its data systems. Using business intelligence and performance management software, DHS will have access to real-time information that will support better business decisions and greater efficiency, while easing compliance reporting.

***Data Analysis and Reporting.*** CDE uses two COGNOS software applications, ReportNet and PowerPlay, to analyze and report on data contained in the Education Data Warehouse. Both tools are accessible via a Web interface and analyze and aggregate large amounts of data into summarized, comprehensible forms, including reports, charts, tables and graphs.

CDHE uses web applications and an SQL server database to collect data from the state institutions of higher education and then house, analyze, and report on higher education issues. Interactive aggregated data on enrollment, approved degrees, and degrees awarded are available to the public on the agency website. CDHE is currently employing new visualization tools which show institutional progress longitudinally on a number of key indicators. Additionally, data reports and analyses created by in-house research staff for the Colorado Commission on Higher Education and for the Colorado General Assembly are posted to the CDHE website.

***Governance.*** The Education Data Advisory Committee was established in 2002 (and codified in 2005) to review data demands placed on K-12 public education and charged to recommend the most efficient ways of collecting data and to determine if recommendations for "new" data collections are redundant and propose alternatives. In 2009, the Colorado legislature established the Government Data Advisory Board (GDAB) and a fifteen-member Education Data Subcommittee to implement the state's interdepartmental data sharing protocol, which is focused on improving data sharing among state agencies and between the state and school districts, postsecondary institutions, non-profit organizations, and professional researchers.

***Privacy Protection and Data Accessibility.*** The CDE data collection system and the data warehouse secure data in Oracle® databases. All authorized users are required to sign

confidentiality agreements. School districts are able to perform statewide student searches using state assigned IDs, but otherwise have access only to their own students' data. Outside persons, groups and research centers must submit a request for data to CDE's Institutional Review Board and receive approval prior to accessing data. This limited access constrains the ability of districts and schools to obtain information needed to guide individual student instruction, as well as the ability of researchers and CDE staff to support district/school improvement efforts by providing timely information to policymakers related to analyzing and advancing student achievement.

***SLDS Grant.*** In 2007, CDE received a three-year (\$4.2M) SLDS grant focused on three work strands: (1) Expansion of the CDE Data Warehouse, which has allowed CDE to extend its centralized repository of historical data; (2) Electronic exchange of student transcripts between LEAs and with higher education institutions; and (3) Expansion of local data analysis tools and access to student-level interactive data displays. That work is on track in meeting project outcomes and positions the state to undertake the work described in this proposal. Going forward, both SLDS efforts will be coordinated to avoid duplication and attain identified outcomes.

***Colorado Growth Model.*** The Colorado General Assembly enacted legislation in 2004 (refined in 2007) that required CDE to report individual growth rates for each student in the state and to combine those growth rates to measure school performance. The resulting Colorado Growth Model compares a student's performance on the Colorado Student Assessment Program over the years to other Colorado students in the same grade who had similar scores in past years, creating an academic growth metric. In compliance with legislation enacted earlier this year, the Growth Model will be expanded to indicate how much improvement is needed for each student to reach postsecondary readiness,—that is, the ability to matriculate to the postsecondary system of education without need for remediation—and provide meaningful diagnostic information to students, parents/guardians and educators on the progress of each student over time. Colorado Governor Bill Ritter Jr. invested \$2.5 million of the Government Services Fund, created as a result of the American Recovery and Reinvestment Act (ARRA), to advance the development of this promising model. This reflects the single largest investment using these funds. As described in Section IV, Colorado is working with the Council of Chief State School Officers to build a multi-state collaborative to share in and advance the Colorado Growth Model and its visualization tools.

SchoolView™ was launched in August 2009 as a web portal that provides student, school, school district, and state performance reports and supporting data using the Colorado Growth Model. Building on this brand, Project SchoolView™ expands this work to higher levels of impact and effectiveness by providing a platform through which stakeholders can access and collaboratively analyze and apply relational and longitudinal P-20 data on student, school, district, and educator performance.

***Educator ID System.*** The Governor's discretionary ARRA funds and private grants totaling \$1.1 million have been garnered to support the development and implementation of a system that will associate educators to student data across time and across databases. This initial investment will help initiate an Educator ID assignment system, but additional investment is required to fully implement and activate a student-linked performance management system for Colorado educators.

***IEP Management System.*** This initiative (estimated at \$1.5M) is being funded from CDE’s Exceptional Student Learning Unit’s annual budget. The Individual Education Plan (IEP) management system will assist in the documentation and reporting of special education student information through the use of an integrated database management system. The system will manage student and staff information, streamline the process of referring students for comprehensive educational evaluation, document decisions made during Child Study Team meetings, develop and maintain individual education plans, provide documentation for students receiving special education and/or related services, and allow for a well-defined, efficient method of exchange of data between the application and state and federal entities.

#### **D. MOVING TO: ADDRESSING REQUIREMENTS OF THE STATE FISCAL STABILIZATION FUND**

The State Fiscal Stabilization Fund requires states to advance essential education reforms to benefit students from early learning through postsecondary education, including college- and career- ready standards and high-quality, valid and reliable assessments for all students; development and use of pre-K through postsecondary and career data systems; increased educator effectiveness and an equitable distribution of qualified educators; and turning around the lowest-performing schools. Colorado is implementing a true P-20 education alignment strategy across the state’s education systems, anchored by a common definition of postsecondary and workforce readiness. To support this alignment, the General Assembly and the Governor’s Office have made inter-departmental data sharing a state priority. Colorado’s approach to educational alignment also seeks to produce meaningful information on educator and principal effectiveness by mandating the development of the state’s first educator identifier system, which will be used to link educators, students, and educator preparation programs for the purposes of individual and program evaluation.

Project SchoolView™ will enable these reforms by ensuring that timely and reliable P-20 data reach local and state education policymakers and researchers in forms that support continuous improvement, especially in instruction, and informed decision making from the classroom to the statehouse. Specially, Project SchoolView™ builds Colorado’s capacity to address State Fiscal Stabilization Fund requirements in ways that include the following:

- **Expand Colorado Growth Model.** Colorado will expand its breakthrough analytical and data visualization tools that make education data transparent through public reporting and that support accountability and strategic investment. The model will broaden its current K-12 focus to include relational student-education-program information that traces students’ movement from preschool through K-12 and into postsecondary education and the 21st century workforce, including employment, wage and earnings data. This information will guide educational decision making at all levels, including instructional improvement. Colorado will share this model with other states in a non-proprietary manner.
- **Improved LEA-to-State Reporting.** A more efficient, less burdensome reporting framework will enable LEAs to refocus leadership, staff and resources from compliance to knowledge management and the provision of direct student services.
- **Predicting Risk.** The ability to conduct longitudinal studies using a breadth of individual student information will support the identification of specific factors that are predictors of a student’s risk of falling behind or dropping out. Early warning systems will engage

timely and appropriate interventions to ensure individual students are on track to be college and career ready.

- **Match Student Records.** The ability to match student records between P-12 and higher education systems will provide information regarding high school graduates who need remediation in college, the relationship between high school courses and college enrollment and persistence, the alignment between graduation standards and college and workplace expectations, and the percentage of each district's high school graduates who enroll in college within a specified time window after graduation. The ability to access workforce data from other state agencies will provide information to enable policymakers to align and coordinate workforce preparation efforts.
- **Educator Data.** Educator data will enable policymakers and educators to analyze gaps and mobility and retention issues, explore the distribution of effective educators throughout the state and within individual schools and districts, and describe the number and percent of educators and principals rated at various performance levels in each LEA's evaluation system.
- **Student/Educator Link.** Linking educator and student data will enable policymakers to explore which forms of educator preparation and certification correlate most closely with students' academic growth in the classroom; to evaluate the effectiveness of educator preparation programs, pre- and in-service professional development, and of educators themselves; and to identify promising models and practices in educator preparation.
- **Improved Support for Low-Performing Schools.** CDE staff charged with supporting persistently low-performing schools will have access to rich, relational data regarding school, educator and student performance that will inform the type of interventions and investments required to drive improved student outcomes in these schools.

## E. COLORADO DISTINGUISHERS

In addition to great need, Colorado brings a unique collection of attributes and strengths to Project SchoolView™.

- **Ambitious Reform Vision.** Colorado is a national leader in its work correlating high school exit rates with college and workforce readiness via a program jointly developed by CDE and CDHE. This definition roots the readiness trajectory in early childhood education by adopting a school readiness assessment and sets the bar high with internationally benchmarked standards. The state vision for reform is ambitious; its leadership is capable and is aligned with required federal data standards and elements (See Appendix A for more detail).
- **Colorado Growth Model.** The state has one of the most advanced systems for tracking, reporting and visualizing the changes in K-12 student academic performance over time. Colorado is leading a multi-state collaboration to build upon the functionality and non-proprietary qualities of this model (refer to Section III.C.).
- **Early Childhood Assessment.** Groundbreaking work in Early Childhood Education assessment includes the adoption of readiness indicators, ongoing use of formative assessments, automated online platforms, and the use of technology in classrooms to support data-driven instruction, all of which will be integrated into Project SchoolView™.

- **Collaboration with Other States.** Colorado demonstrates the willingness to share knowledge, technology and strategy with other states, including record level-data and reporting tools, and to leverage and build on the expertise of other states. Project SchoolView™ positions Colorado to provide national leadership and models regarding the linking of data across institutions, agencies and states to track student progress and inform policy and practice.
- **Diversity of LEAs.** Local school districts vary broadly in size, setting and technological capacity. In addition, Colorado is home to a robust charter school community, with steady increases in the number of schools and enrollment in diverse settings across the state. Colorado’s data system solutions must therefore address the needs of rural, suburban and urban users at a variety of stages of capacity.
- **Variety of Educator Preparation Programs.** Colorado is home to a broad group of higher education and alternative providers of educator preparation programs that vary markedly with regard to size, setting and delivery mechanisms.
- **LEA Collaboration.** Denver-metro area school districts bring leadership, expertise, technological sophistication and a history of collaboration to this work. The Chief Information Officers of the 18 largest metro districts have been meeting regularly for ten years to problem solve, share resources and attain economies of scale in connection with the development of their local data systems. In addition, local education leaders established and operate the Colorado Student Information System Users Group.
- **CDHE Expertise with Longitudinal Data.** CDHE can provide guidance on issues regarding relevant indicators and research with longitudinal data based on its experience in developing a high quality longitudinal data system over the last three decades.
- **State OIT (Office of Information Technology) Leadership.** OIT provides the leadership to develop a shared statewide vision for the state’s human capital development system, interagency collaboration, and a strategic plan for developing new data governance and management systems. Colorado demonstrates the ability to implement complex statewide technology solutions through OIT consolidation efforts. The Colorado Integrated Criminal Justice Information System, for example, has received national attention for information sharing across the boundaries of organizations and jurisdictions among the state criminal justice agencies to enhance public safety, improve decision making, increase productivity and improve access to information.
- **Stakeholder Communication and Outreach.** State leaders have established communication and outreach mechanisms to effectively engage LEAs, higher education institutions, state agencies and other stakeholders in discussions about the creation of a P-20 education data infrastructure and issues related to data governance and integrity.

The SLDS grant opportunity arrives at an ideal time to fulfill immediate and great needs while capitalizing on these strengths. In short, Colorado is “shovel ready,” poised to translate the investment of SLDS funds into a next generation information and knowledge management system.

## II. PROJECT OUTCOMES RELATED TO SYSTEM REQUIREMENTS AND IMPLEMENTATION

### A. HIGH LEVEL VIEWS

Figures 2 and 3 show high-level business and technical overviews of Project SchoolView™. The ambition of the state’s vision for its longitudinal data system is commensurate with the dramatic scale of improvement in student outcomes being pursued. As a result, the work scope for the project spans both this application and Colorado’s Race to the Top application. This application includes initiatives related to improving data capture, linking data across state and local agencies, and providing the right data to the right audience at the right time for use in continuous improvement. The Race to the Top application focuses on building a culture of and tools for knowledge management in P-20 education to improve student academic achievement and close achievement gaps.

**Figure 2: Project SchoolView™ Strategic Articulation**

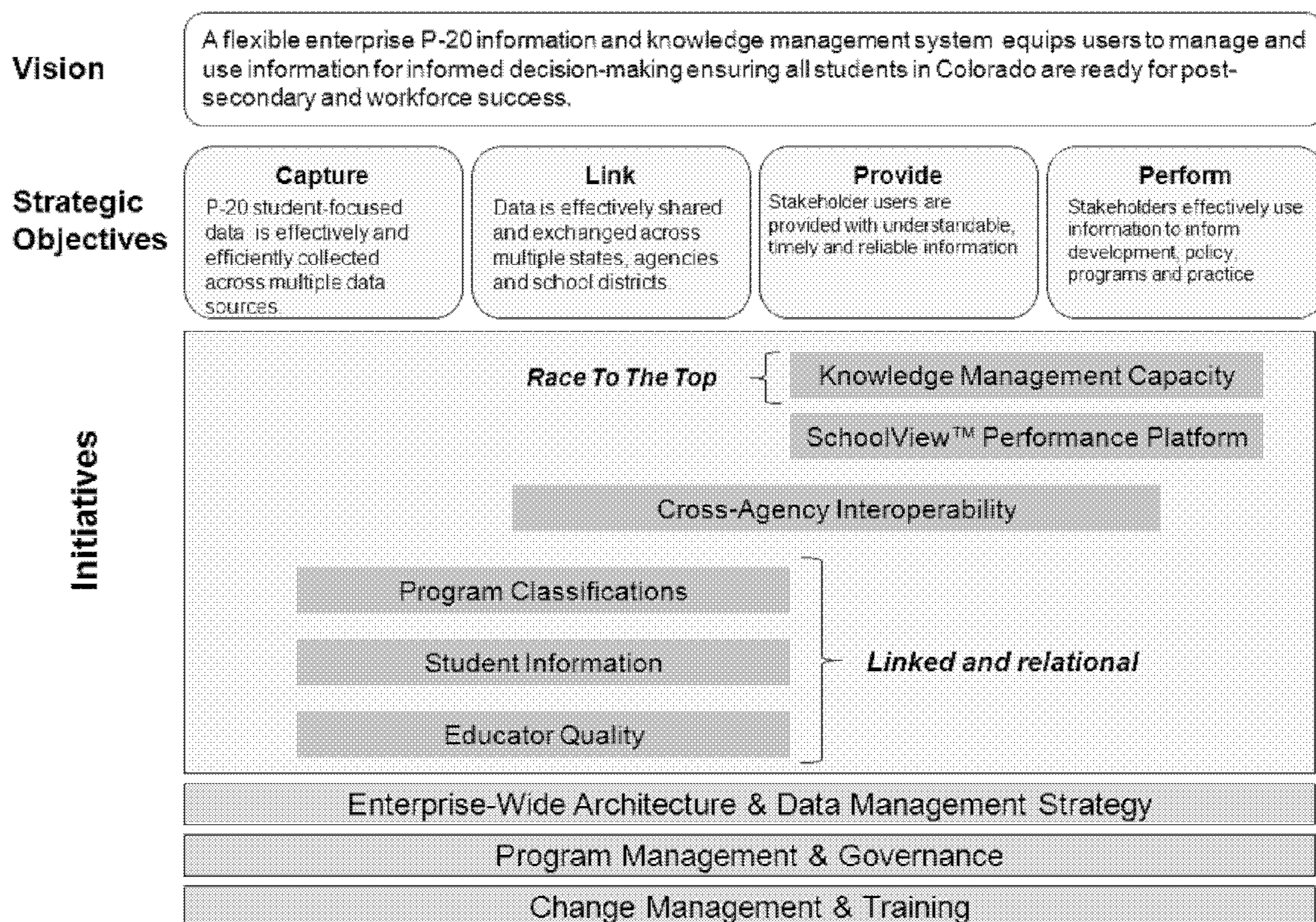
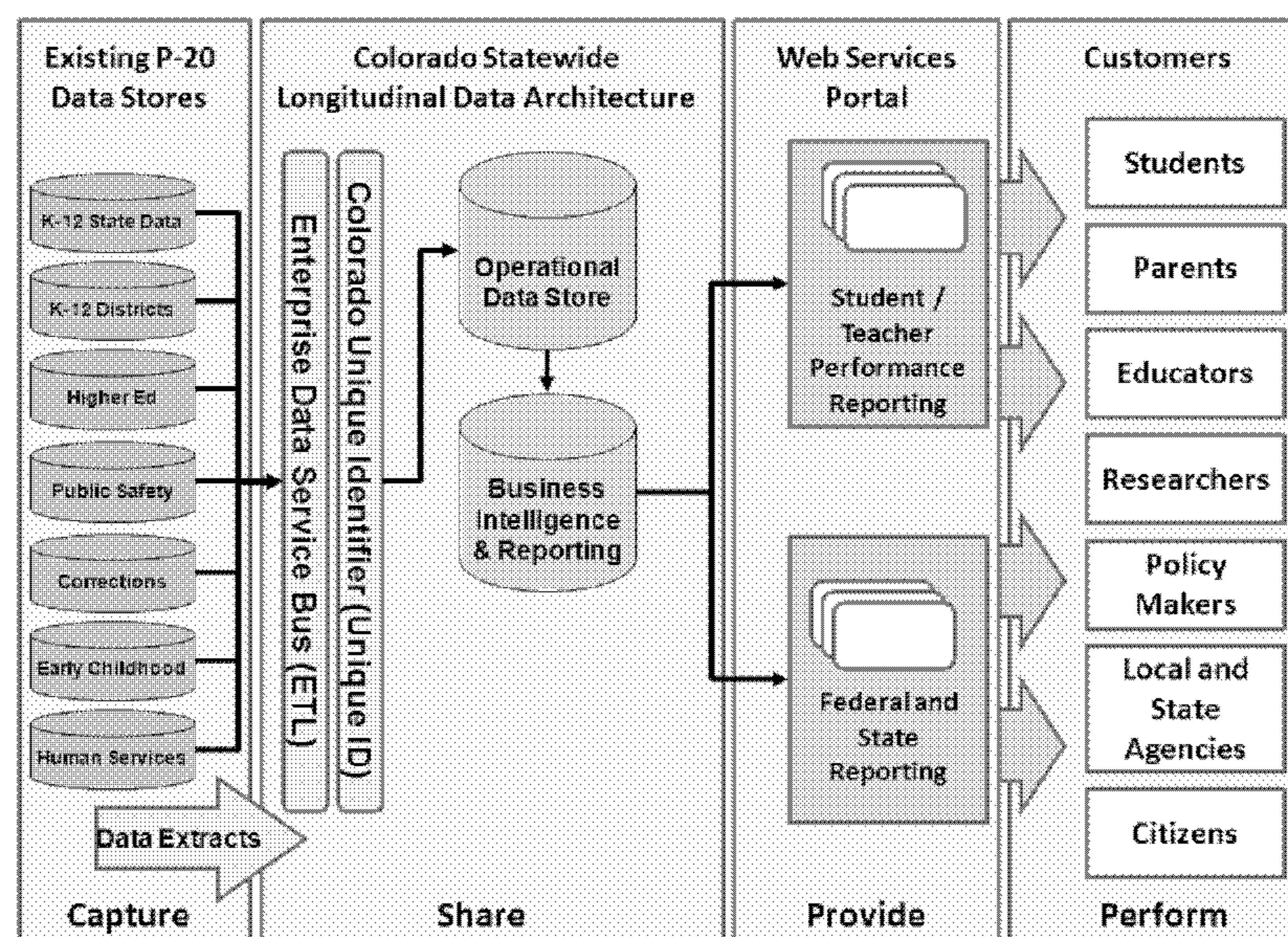


Figure 3 below illustrates a high level architectural view of the proposed state longitudinal data system.

**Figure 3: Project SchoolView™ Enterprise Architecture**



## B. GOALS AND MEASURABLE OUTCOMES

### 1. SchoolView™ CAPTURE: Data Gathering and Collections

**Goal:** P-20 student-focused data is effectively and efficiently collected across multiple sources.

This solution will facilitate the efficient capture of timely and reliable data that can then be linked for purposes of making P-20 educational decisions. Relating student performance data to educator, financial and program level data will enhance accountability, transparency and performance management capacity at all levels of the system. Policymakers will be able to determine the relative effectiveness and return on investment of various interventions and improvement strategies.

#### Measurable Outcomes:

- 1.1 System-level: Establish and publish statewide data standards and definitions for all collections and data elements (i.e., student enrollment, courses, teacher preparation, assessments) to be used by LEAs and state agencies.
- 1.2 System-level: Streamline data demands on LEAs and capture more real-time information through a state data pull rather than an LEA data push.
- 1.3 System-level: Expand data collections to address all federal EdFacts reporting requirements.
- 1.4 System-level: Integrate financial information with student, educator and program level data.
- 1.5 Student-level: Capture student demographic information reported by LEAs once rather than with each program for which LEAs report data, shifting the data focus to students rather than programs.
- 1.6 Student-level: Investigate early childhood data needs and map current preschool data collections and reporting points.
- 1.7 Program-level: Establish common course and program codes.
- 1.8 Educator-level: Accelerate the development and implementation of the unique educator ID.



1.9 Educator-level: Capture information regarding educator preparation and professional development.

## **2. SchoolView™ LINK: Cross Agency Interoperability**

**Goal:** Data are effectively shared and exchanged across multiple state agencies and LEAs.

This solution involves the creation of a new unique, statewide identifier to be hosted at OIT to which agency-specific identifiers will map through master data management and data hub technologies. This unique ID serves as the requisite foundation for cross-agency longitudinal analysis including the significant transitions from early childhood to K-12, K-12 to postsecondary education, and postsecondary education into the workforce. This system will allow policymakers to tie student performance to educator preparation programs, linked to student academic growth and support educator evaluations.

### **Measurable Outcomes:**

- 2.1 Build a unique state ID to cross reference unique identifiers established by various state agencies and systems.
- 2.2 Establish linkages between CDE and other state agencies (Higher Education, Human Services, Labor and Employment, Public Safety, Corrections) that collect data relevant to P-20 student performance.
- 2.3 Link educator characteristics, evaluations, preparation, and development to individual student performance.

## **3. SchoolView™ PROVIDE: Performance Platform**

**Goal:** Stakeholder users are provided with understandable, timely and reliable information.

This solution will combine linked longitudinal data and engaging business intelligence reporting tools to enable stakeholders to analyze the correlations between services and programs conducted by different agencies for groups of students, or for a single student over time. Platforms will be created for distinct user groups that address different information needs and uses. Educators, for example, will be able to use interim/benchmark assessment results to support instructional planning, and to access (and contribute to) effective practices identified for specific categories of students or instructional situations.

### **Measurable Outcomes:**

- 3.1 Provide an enhanced set of standardized aggregate reports and interactive displays through which the public and school personnel can track the performance of students, schools and districts over time.
- 3.2 Provide information portals for:
  - Students, with access to personal real-time and historical achievement information, enabling self-awareness of their own performance and motivating effort.
  - Educators, with access to class and student information, and instructional management tools that foster exchange of best practices and collaboration with other educators.

- Administrators, with access to educator, class, school and district performance measures.
- Parents/guardians, with access to historical and current information on their students.
- Researchers, with access to student-level data and analytics needed to conduct research on the effectiveness and return on investment of interventions, methods, programs, and policies with appropriate confidentiality safeguards.
- CDE staff, with access to student-level information and analytic tools needed to implement the state's system of accountability and support to low-performing schools and districts.

3.3 Provide for open source application development to drive innovation in data visualization and encourage sharing of both information and technology among all interested education stakeholders.

3.4 Train internal and external stakeholders/users to use the SLDS.

3.5 Provide ongoing and cost-effective technical assistance (user support) to internal and external stakeholders in modifying their systems to meet new reporting and interoperability requirements.

#### **4. SchoolView™ PERFORM: Knowledge Management**

**Goal:** Stakeholders effectively use information to guide development, policy, programs and practice.

The Project SchoolView™ infrastructure developed with SLDS and other funds will provide timely, actionable and credible P-20 longitudinal information to stakeholders. Colorado's Race to the Top application will seek funding to build on this foundation by investing in the development of knowledge management tools and capacity. Through this emphasis multiple stakeholders will use and leverage information to drive increased student, educator and school performance leading to postsecondary workforce readiness through professional development, innovative programs, strategic investments, and improved instructional practices.

#### **5. FOUNDATIONAL: Enterprise Data Management Strategy**

**Goal:** Stakeholders are provided with data of the highest quality, reliability and integrity in a timely manner to promote trust in the system and use of the system.

The process of linking data systems across state agencies demands attention to data governance issues. Project SchoolView™ will adhere to the standards, policies, and processes defined by OIT related to data quality, validity, and reliability and described in Section III.D.

##### **Measurable Outcomes:**

5.1 Data governance policies, processes and standards are established to manage the flow of data from capture to use.

5.2 Master data management (MDM) technology is implemented to ensure the quality, reliability and integrity of the data.

5.3 Data stewards provide data quality audits as part of the ongoing monitoring of data quality on a daily basis via a user interface in the MDM application.

5.4 Robust, sophisticated access and authentication technology and processes ensure the privacy and security of data.

## 6. FOUNDATIONAL: Leading and Managing Change

**Goal:** Ensure there is appropriate focus on preparing for, managing and reinforcing change at both the enterprise and individual level.

Project SchoolView™ will generate transformational process and cultural change over the three-year grant term and also over the next decade as stakeholders apply data and manage knowledge to advance student performance in innovative ways. Further, the SLDS system impacts a large and diverse group of stakeholders. A robust change management process, coordinated and aligned with Colorado’s Race to the Top initiative, is essential to success and sustainability.

### Measurable Outcomes:

- 6.1 Dedicated change management leader is in place to ensure change processes are instituted throughout the entire implementation process.
- 6.2 Program reporting measures readiness and effectiveness of change mechanisms.

## III. HIGH-QUALITY, LOGICAL, AND FEASIBLE ACTIVITIES AND TIMELINE

### A. Planned Activities and Timeline

Project SchoolView™ proposes three sets of technology solutions to address Colorado’s data system needs: *SchoolView™ – Capture, Link and Provide*. As stated above, the *SchoolView™ – Perform* solution will be incorporated into the state’s Race to the Top application. The table below provides a roadmap to Project SchoolView™. A high level project plan, organized by the *Capture, Link and Provide* solutions, follows.

	Task	Outcomes	2010		2011				2012				2013			
			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Capture	Define & Publish Statewide Data Collection Standards	1.1, 1.8														
	Define & Publish Unique ID Strategy (Student, Educator, Program)	2.1														
	Expand and Streamline Data Collection Applications	1.2														
	Overall Infrastructure & Student	1.3, 1.5, 1.1, 2.3														
	Educator	1.3, 1.8, 1.9, 2.3														
	Program	1.3, 1.7														
	Finance	1.3, 1.4														
Link	Finalize and Publish CUPID Architecture & Cross Agency Requirements	2.1														
	Implement Centralized CUPID Architecture & Application	2.1, 5.1-5.4														
	Implement CUPID Interfaces at Initial State Agencies (CDHS, CDHE, CDLE)	2.2, 5.1-5.4														
	Cross Identifier Reporting (Student x Educator x Course x Agency)	2.3, 5.1-5.4														
Provide	Longitudinal Platform Application (SchoolView Enhancements)	3.1														
	Identify Architecture Enhancements	3.1														
	Acquire & Configure Additional Infrastructure	3.1														
	Student-Based Information (All Audiences)	3.2														
	Educator-Based Information (All Audiences)	3.2														
	Program-Based Information (All Audiences)	3.2														
	Finance-Based Information (All Audiences)	3.2														
	Longitudinal Application Exchange	3.3														
	Define, Design, Develop, Test, Pilot															
	Implement Centralized Exchange Architecture															
Post Implementation Observation & Support	3.5															
Program Management																
Change Management	6.1, 6.2															
Training	3.4, 3.5															

As shown in the project plan below, tasks within the *Capture* and *Provide* solutions will be implemented in a coordinated manner, first for student data, and then for educator, program, and finance data. Completion of the *Capture* and *Provide* tasks for student data will implement the overall infrastructure and most of the application logic required to capture data for educators, programs, and finance. *Link*, the unique ID application that will be housed at OIT, will be implemented for CDE before the rollout of the *Capture* solution for student data. Data from the Colorado Department of Human Services, the Colorado Department of Higher Education and the Colorado Department of Labor and Employment then will be captured as these agencies cleanse and match their data for the unique ID. *Provide* includes a line item for the development of powerful new reporting enabled by crossing student, educator, course, and agency information. The primary delivery mechanism for *Provide* will be performance platforms tailored for each audience: students, parents/guardians, educators, state and local agencies and researchers. Training and technical assistance, change management, and enterprise data management are foundational to the data system as a whole, and are integrated into each solution.

**Table 3: High Level Project Plan (Capture and Link)**

ID	Task Name	Duration	Start	Finish
1	<b>Project Planning and Management</b>	<b>720 days</b>	<b>Thu 7/1/10</b>	<b>Wed 4/3/13</b>
2	Project Planning / Issue & Risk Management / Status Reporting	36 mons	Thu 7/1/10	Wed 4/3/13
3	Staff Training and Travel	36 mons	Thu 7/1/10	Wed 4/3/13
4	Procure Contractor Workspace	36 mons	Thu 7/1/10	Wed 4/3/13
5	<b>Capture</b>	<b>720 days</b>	<b>Thu 7/1/10</b>	<b>Wed 4/3/13</b>
6	Define and Publish Statewide Data Collection Standards	3 mons	Thu 7/1/10	Wed 9/22/10
7	<b>Expand and Streamline Data Collection Applications</b>	<b>580 days</b>	<b>Thu 9/23/10</b>	<b>Wed 12/12/12</b>
8	<b>Define and Implement Expanded Architectural Framework</b>	<b>580 days</b>	<b>Thu 9/23/10</b>	<b>Wed 12/12/12</b>
9	<b>Implement Standardized Operational Data Store and Capture Student Data</b>	<b>260 days</b>	<b>Thu 9/23/10</b>	<b>Wed 10/19/11</b>
10	Define, Acquire and Configure Infrastructure	3 mons	Thu 9/23/10	Wed 12/15/10
11	Requirements & Design incl. Controls	4 mons	Thu 9/23/10	Wed 1/12/11
12	Agents, Alerts, ID/Security, Correspondence and Interface Development	7 mons	Thu 12/16/10	Wed 6/29/11
13	Data Conversion	11 mons	Thu 12/16/10	Wed 10/19/11
14	Develop	3 mons	Thu 1/13/11	Wed 4/6/11
15	Test	3 mons	Thu 4/7/11	Wed 6/29/11
16	Pilot	2 mons	Thu 6/30/11	Wed 8/24/11
17	Full Rollout	2 mons	Thu 8/25/11	Wed 10/19/11
18	<b>Implement and Capture Educator Data</b>	<b>160 days</b>	<b>Thu 7/28/11</b>	<b>Wed 3/7/12</b>
19	Requirements & Design incl. Controls	2 mons	Thu 7/28/11	Wed 9/21/11
20	Data Conversion	3 mons	Thu 7/28/11	Wed 10/19/11
21	Develop	2 mons	Thu 9/22/11	Wed 11/16/11
22	Test	1 mon	Thu 11/17/11	Wed 12/14/11
23	Pilot	1 mon	Thu 12/15/11	Wed 1/11/12
24	Full Rollout	2 mons	Thu 1/12/12	Wed 3/7/12
25	<b>Implement and Capture Program Data</b>	<b>160 days</b>	<b>Thu 12/16/11</b>	<b>Wed 7/25/12</b>
26	Requirements & Design incl. Controls	2 mons	Thu 12/16/11	Wed 2/8/12
27	Data Conversion	3 mons	Thu 2/9/12	Wed 5/2/12
28	Develop	2 mons	Thu 2/9/12	Wed 4/4/12
29	Test	1 mon	Thu 4/5/12	Wed 5/2/12
30	Pilot	1 mon	Thu 5/3/12	Wed 5/30/12
31	Full Rollout	2 mons	Thu 5/31/12	Wed 7/25/12
32	<b>Implement and Capture Finance Data</b>	<b>160 days</b>	<b>Thu 5/3/12</b>	<b>Wed 12/12/12</b>
33	Requirements & Design incl. Controls	2 mons	Thu 5/3/12	Wed 6/27/12
34	Data Conversion	3 mons	Thu 6/28/12	Wed 9/19/12
35	Develop	2 mons	Thu 6/28/12	Wed 8/22/12
36	Test	1 mon	Thu 8/23/12	Wed 9/19/12
37	Pilot	1 mon	Thu 9/20/12	Wed 10/17/12
38	Full Rollout	2 mons	Thu 10/18/12	Wed 12/12/12
39	Change Management	36 mons	Thu 7/1/10	Wed 4/3/13
40	Training	24 mons	Thu 6/2/11	Wed 4/3/13
41	<b>Link</b>	<b>720 days</b>	<b>Thu 7/1/10</b>	<b>Wed 4/3/13</b>
42	Finalize and Publish CUPID Architecture and Cross Agency Requirements	3 mons	Thu 7/1/10	Wed 9/22/10
43	<b>Implement CUPID Architecture and Application</b>	<b>260 days</b>	<b>Thu 9/23/10</b>	<b>Wed 9/21/11</b>
44	Acquire and Configure Infrastructure	3 mons	Thu 9/23/10	Wed 12/15/10
45	Requirements & Design incl. Controls	3 mons	Thu 9/23/10	Wed 12/15/10
46	Data Cleansing of SASIDs	4 mons	Thu 12/16/10	Wed 4/6/11
47	Develop	4 mons	Thu 12/16/10	Wed 4/6/11
48	Test	3 mons	Thu 4/7/11	Wed 6/29/11
49	Data Verification	2 mons	Thu 6/30/11	Wed 8/24/11
50	Full Rollout	1 mon	Thu 6/25/11	Wed 9/21/11
51	<b>Implement CUPID Interfaces at Initial State Agencies</b>	<b>360 days</b>	<b>Thu 6/30/11</b>	<b>Wed 11/14/12</b>
52	CDE Master Data Management (Assign CUPID ID)	12 mons	Thu 6/30/11	Wed 5/30/12
53	CDHE Master Data Management (Match, Verify, Assign Unique ID)	6 mons	Thu 3/8/12	Wed 6/22/12
54	CDHS Master Data Management (Match, Verify, Assign Unique ID)	6 mons	Thu 5/31/12	Wed 11/14/12
55	Change Management	36 mons	Thu 7/1/10	Wed 4/3/13
56	Training	24 mons	Thu 6/2/11	Wed 4/3/13

## High Level Project Plan Continued (Provide):

ID	Task Name	Duration	Start	Finish
1	Project Planning and Management	720 days	Thu 7/1/10	Wed 4/3/13
5	Capture	720 days	Thu 7/1/10	Wed 4/3/13
41	Link	720 days	Thu 7/1/10	Wed 4/3/13
57	Provide	720 days	Thu 7/1/10	Wed 4/3/13
58	School View Portal Expansion	700 days	Thu 7/1/10	Wed 3/6/13
59	Identify Additional Architectural Enhancements	2 mons	Thu 7/1/10	Wed 8/25/10
60	Acquire and Configure Additional Infrastructure	2 mons	Thu 8/26/10	Wed 10/20/10
61	Enhanced School View Implementation	520 days	Thu 3/10/11	Wed 3/6/13
62	Student-Based Information (All Audiences: ... Principals, Administrators, Researche	200 days	Thu 3/10/11	Wed 12/14/11
63	Requirements and Design	3 mons	Thu 3/10/11	Wed 6/1/11
64	Develop	2 mons	Thu 6/2/11	Wed 7/27/11
65	Test	2 mons	Thu 7/28/11	Wed 9/2/11
66	Pilot	2 mons	Thu 9/22/11	Wed 11/16/11
67	Full Rollout	1 mon	Thu 11/17/11	Wed 12/14/11
68	Educator-Based Information (All Audiences...)	180 days	Thu 9/22/11	Wed 5/30/12
69	Requirements and Design	3 mons	Thu 9/22/11	Wed 12/14/11
70	Develop	2 mons	Thu 12/15/11	Wed 2/8/12
71	Test	2 mons	Thu 2/9/12	Wed 4/4/12
72	Pilot	1 mon	Thu 4/5/12	Wed 5/2/12
73	Full Rollout	1 mon	Thu 5/3/12	Wed 5/30/12
74	Program-Based Information (All Audiences)	120 days	Thu 2/9/12	Wed 7/25/12
75	Requirements and Design	2 mons	Thu 2/9/12	Wed 4/4/12
76	Develop	1 mon	Thu 4/5/12	Wed 5/2/12
77	Test	1 mon	Thu 5/3/12	Wed 5/30/12
78	Pilot	1 mon	Thu 5/31/12	Wed 8/27/12
79	Full Rollout	1 mon	Thu 8/28/12	Wed 7/25/12
80	Finance-Based Information (All Audiences)	180 days	Thu 7/26/12	Wed 3/6/13
81	Requirements and Design	1 mon	Thu 7/26/12	Wed 8/22/12
82	Develop	2 mons	Thu 8/23/12	Wed 10/17/12
83	Test	2 mons	Thu 10/18/12	Wed 12/12/12
84	Pilot	2 mons	Thu 12/13/12	Wed 2/6/13
85	Full Rollout	1 mon	Thu 2/7/13	Wed 3/6/13
86	Longitudinal Application Exchange (Apps for Democracy)	700 days	Thu 7/1/10	Wed 3/6/13
87	Define Architecture	1 mon	Thu 7/1/10	Wed 7/28/10
88	Acquire and Configure Infrastructure	2 mons	Thu 7/29/10	Wed 9/22/10
89	Requirements and Design incl. Controls	2 mons	Thu 9/23/10	Wed 11/17/10
90	Develop	2 mons	Thu 11/18/10	Wed 1/12/11
91	Test	2 mons	Thu 1/13/11	Wed 3/9/11
92	Pilot	2 mons	Thu 3/10/11	Wed 5/4/11
93	Implement Centralized Exchange Architecture	360 days	Thu 10/20/11	Wed 3/6/13
94	Student	3 mons	Thu 10/20/11	Wed 1/11/12
95	Educator	3 mons	Thu 3/8/12	Wed 5/30/12
96	Program	3 mons	Thu 7/26/12	Wed 10/17/12
97	Finance	3 mons	Thu 12/13/12	Wed 3/6/13
98	Change Management	36 mons	Thu 7/1/10	Wed 4/3/13
99	Training	24 mons	Thu 6/2/11	Wed 4/3/13

## B. COORDINATION WITH EXISTING SLDS GRANT

As described more fully in the next section, the Project Management Office within CDE's Information Management Systems unit will coordinate activities supported by this grant with the state's existing SLDS grant (2007-2010) and with other data system initiatives to assure a common vision, avoid duplication of effort, and leverage expertise and resources to their full potential. Staff, project management strategies, and leadership overlap both SLDS efforts. Applicant acknowledges that funds under this Recovery Act grant must be separately tracked from funds under other grants, including its 2007 SLDS grant. This program qualifies for OIT's Enterprise Governance Committee oversight (explained in Section IV), providing additional governance across the state enterprise and facilitating cross agency enterprise cooperation.

## C. MULTI-STATE COLLABORATION

Colorado supports CCSSO's LEARN initiative, which will promote unprecedented cross-state knowledge about educational performance and access to educational content. As an initial step in this collaborative effort, CDE has led multi-state adoption of a common student longitudinal growth measure and data visualization platform as used by the Colorado Growth Model. In addition to Colorado, several other states such as Massachusetts, Indiana and Arizona now use

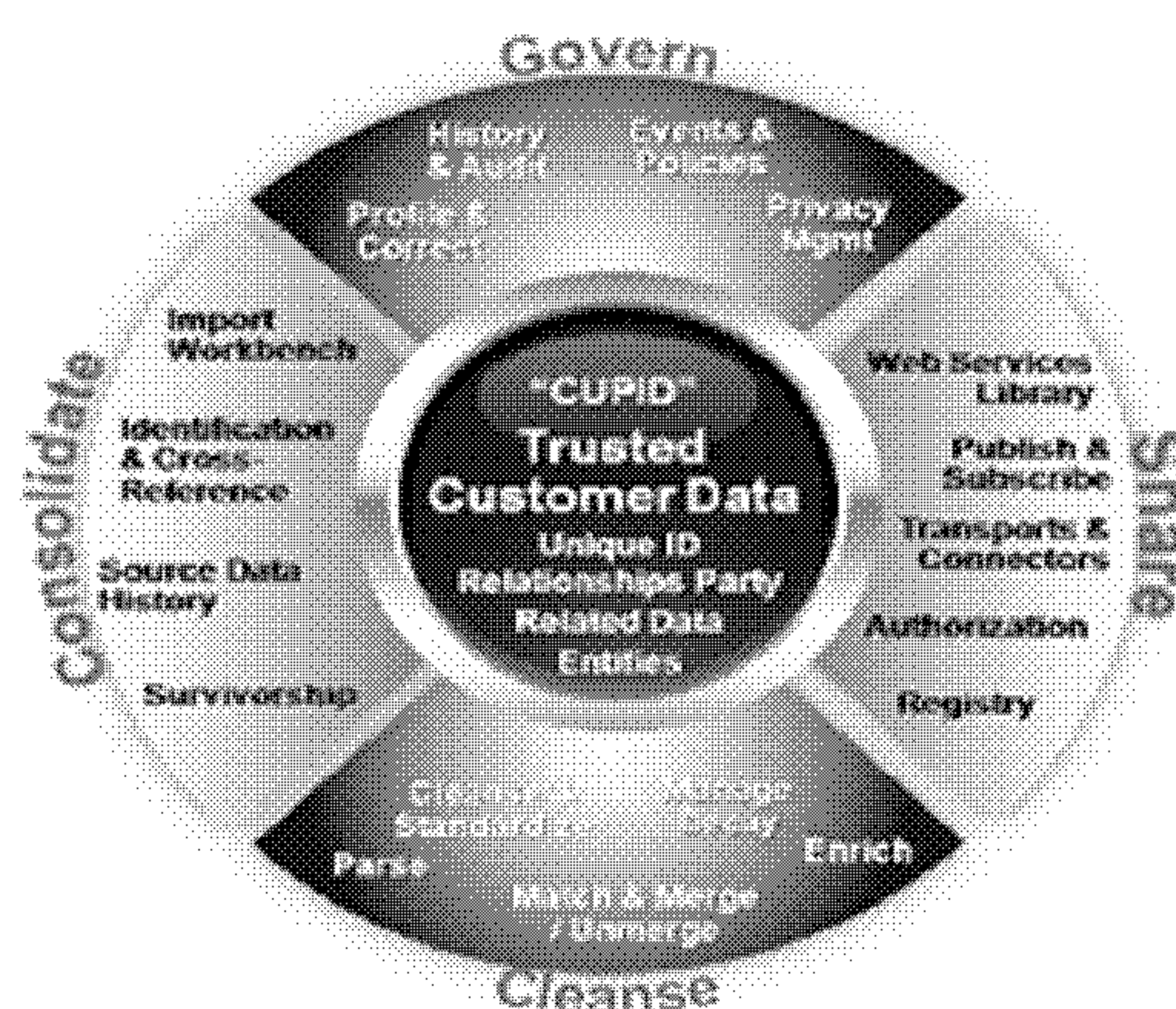
the growth percentile methodology developed for the Colorado Growth Model. Indiana and Arizona recently signed an agreement to adopt the data visualization tools employed by the Colorado Growth Model and will begin co-development of the Growth Model displays. Several other states are expected to join the co-development effort soon.

This collaboration makes it possible, for example, to evaluate the relative productivity of educational systems, (i.e., groupings of schools undergoing turnaround) in Colorado, Massachusetts, Indiana and Arizona as measured by student growth rates toward state standards. With the advent of common core standards and common assessments, such collaboration holds tremendous promise for building a breakthrough national awareness and improved discourse about education reform. Refer to Appendix A for the agreement that defines the outcomes of this collaboration. No SLDS grant funds are requested to directly implement this work.

#### D. MEETING TECHNICAL REQUIREMENTS

**Data Quality.** One of the most crucial components of a successful SLDS is a governance program that addresses data quality and integrity. Using data for analysis and application in instructional practice, decision-making and policy-making inherently requires trust of the data that are being studied, measured and analyzed. Characteristics of data quality include data specifications, duplication, accuracy, consistency and synchronization, timeliness and availability, ease of use and maintainability, data coverage and relevance. The master data management application shown in Figure 4 will provide the services to carry out the state’s already established data quality management program (refer to Section II.B.5).

**Figure 4. Master Data Management Application**



Additionally, an enterprise metadata registry will be implemented as part of the data management program. The purpose of an enterprise metadata registry is to establish a central point for data identification, standardization, and sharing. This ensures consistent use of the data assets and data resources across the state, facilitates easy mapping of data between computer systems, and lowers the costs of migrating to new systems, including service-oriented architecture. OIT will coordinate the agency data stewards and the input to the data dictionary to insure that at a minimum the following is accomplished:

- Each data element has a clear and unambiguous data element definition that is supported by the state agencies involved with the data.
- The origin of the data, i.e., the system of record, is identified for each element as well as the designated system for history, such as a data mart or data warehouse.
- The data stewards are identified for each data element.
- Each data element does not conflict with other data elements in the metadata registry.
- Each element defined as a code has clearly enumerated value definitions.
- The data element defined is still being used.
- The data element is being used consistently in various computer systems.
- Version control of the data elements is in use.
- Adequate documentation on appropriate usage and notes for the data elements.
- The usage of the data element in each data sharing effort is documented.

Data quality will improve because all departments will use the same definitions and standards.

The state's framework for data quality includes defining the requirements, inspection policies, measures, and monitors that reflect changes in data quality and performance. In addition to these steps, a data governance framework for data quality will be established. The governance tasks include:

- Engaging business partners from all stakeholder agencies to work with the data stewards and data quality teams.
- Identifying data ownership roles and responsibilities, including data governance board members and data stewards.
- Assigning accountability and responsibility for critical data elements and data quality management.
- Identifying key data quality areas to address and directives around these key areas.
- Synchronizing data elements across the lines of business and providing clear, unambiguous definitions, use of value domains and data quality rules.
- Developing metrics and continuously reporting on the measured level of data quality.

This framework will ensure that data quality becomes operationalized as part of agencies' business processes, and day-to-day operations of the SLDS. Most importantly, it will build the trust necessary for stakeholders to utilize the data and information in knowledge management.

**Privacy.** A fundamental tenet of both data sharing and privacy protection is ensuring that the data reported about an individual as part of a data or information sharing request is actually data about the individual being requested. The unique ID is designed to map agency identities to a master identifier that incorporates data cleansing and data quality functionality to guarantee an individual's identity against all other potential matches in the state. The unique ID is strictly architected to use the minimal set of attributes necessary to make de-duplication and uniqueness determinations on identities. Sensitive agency data (everything from HIPAA-sensitive to educational and individual benefits data) is retained at the agency level in agency repositories. Additionally, the state will be able to provide de-identified record-level P-20 data to research organizations for evaluations of policies and programs within the State.

The unique ID and the SLDS will be protected behind strong firewalls, and the state will implement a strong access and authentication and authorization model to provide security and protect privacy by ensuring that access to data in the SLDS is on a need-to-know basis. The provisioning system will leverage the unique ID directly, and use a roles-based method to control access to state systems. The provisioning systems will offer multiple authentication schemes depending on the level of protection required by the system and data. The model is flexible and can accommodate low (username/password) to high (certificate-based) assurance levels. A provisioning tool will assign the corresponding authentication and authorization capabilities to users according to their role and the value of the information that is being protected. This process will address compliance with FERPA, HIPAA and other federal and state regulatory requirements.

#### **E. ALIGNMENT OF TECHNOLOGY SOLUTIONS TO REQUIRED CAPABILITIES AND ELEMENTS**

As shown in the following table, the Project SchoolView™ solutions map directly to the required SLDS capabilities/elements contained in the RFA. They also meet the mandate of Colorado state law regarding cross department data interoperability.

**Table 3. Mapping of Project SchoolView™ Solutions to RFA Requirements**

<b>Required Capability</b>	<b>Solution Mapping</b>
P20 linkages	MDM and data hub functionality allow the mapping of agency specific IDs to a central data link across agencies that provides service to the P20 population.
Interoperability	The unique ID and/or its mappings can be extended to any number of state and federal agencies.
Educator-Student Link	Both educators and students have a unique ID and relationship can be made in a data model to conduct correlation analysis, including to program and financial data.
Educator certification, preparation details	Information about educator preparation and other HR data can be tracked by associating data with a unique ID at the agency and institution level.
Information for educator and parent decisions	Real time dashboards and other decision tools will be created to report on P-20 longitudinal data.
Data quality audits	MDM technology provides accurate and complete data associated with a unique ID. Auditing of agency specific data through the business intelligence layer is made easier by having a strong baseline identity of students and educators.
<b>Required Elements</b>	<b>Solution Mapping</b>
Unique statewide student identifier	A unique statewide identifier is used for all persons in Colorado.
Student-level enrollment, demographic and program participation information within the state and with other states	The common identifier and mappings across different agencies enables reporting on enrollment, demographic and program participation.



Student-level information about exit, transfer in, transfer out, dropout and completion of P-16 education programs	The business intelligence system will use the identity mapping between CDHS, CDE and CDHE to enable reporting on these types of events.
Capacity to communicate with higher education data systems	The same MDM and unique ID solution is shared by CDE and CDHE enabling sharing and mapping of data.
State data audit system assessing data quality, validity and reliability	Sophisticated data quality tools at the MDM and business intelligence layers of the solution ensure validity and reliability of data.
Yearly test records for individual students	All agencies providing educational services to students will continue to record test records within their systems. An aggregate record is created by linking IDs through the unique ID and business intelligence.
Information on students not tested by grade and subject	CDE can provide this report by aggregating school data through the unique ID.
Educator identifier system with ability to match educators to students	The unique ID coupled with business intelligence solutions will permit this matching and respective correlation analysis.
Student level transcript information, including information on courses, completed and grades earned.	A complete student transcript can be created by aggregating course and grade data from any educational institution and linking it through the unique ID. Common course codes and data standard support this linkage.
Student-level college readiness test scores	CDE and CDHE can provide this report by aggregating school data through the unique ID.
Data regarding the extent to which students transition successfully from secondary school to postsecondary education, including enrollment in remedial coursework	CDE and CDHE can provide this report by aggregating school data through the unique ID and reporting it through a business intelligence solution, including the Colorado Growth Model.
Data necessary to address alignment and adequate preparation for success in postsecondary education	All agencies with data relevant to P-20 education (including preschool and higher education) can aggregate data and report on correlations related to students' educational success by using the unique ID and its mapping capabilities.

#### IV. EFFECTIVE MANAGEMENT AND GOVERNANCE PLAN

##### A. OPERATIONAL CONTEXT

The Colorado General Assembly established the Government Data Advisory Board (GDAB) to assist Colorado's Chief Information Officer and Chief Data Officer in determining the state's data strategy, policies, standards and architecture. GDAB members also serve as a liaison from their communities of interest to the OIT regarding stakeholder needs and concerns; and, to their communities as key communicators regarding the state's progress, concerns and challenges. The

Education Data Subcommittee, a legislated subcommittee of the GDAB is charged with providing recommendations for the creation of a statewide comprehensive P-20 education data system.

OIT provides a mechanism to manage the connections among state agency systems, providing enterprise architecture, data governance and management that facilitate cross-agency collaboration. OIT is charged with overseeing technology initiatives at the state level to maximize efficiencies of service delivery in a cost effective manner through the application of enterprise technology solutions. Pursuant to state law, OIT implements the Enterprise Governance Committee (EGC) structure to provide senior governance for large-scale, multi-agency initiatives such as Project SchoolView™. This model has been effective in providing management expertise across the state by identifying risks, ensuring collaboration across agencies, and helping resolve critical issues. It has been a key component in the success of several multi-million dollar initiatives, including the Statewide Election and Registration System, the Colorado Benefits Management System transition, and the Colorado Integrated Tax Architecture.

Internal to CDE, the department recently accomplished major enhancements and expansions to its Information Management Services unit. The department employed its first Chief Information Officer, who is charged to oversee the department’s information management and data collection direction and staff, and to develop technology and data acquisition strategies that support the education reform agenda described above. Major tasks of the CIO relate to aligning disparate systems, reducing redundancies and instilling an enterprise-wide data management system.

The CIO hired an Enterprise Architect with strategic, tactical and operational responsibilities related to managing the Department’s information technology technical roadmap and landscape, specifically as it pertains to enterprise-scale applications/solutions. The CIO also hired a Project Manager to provide project management, resource planning, prioritization methodology and strategic planning to all IT efforts. All IMS projects are managed pursuant to a defined project management methodology and are cross-coordinated to eliminate duplication or redundancy, to avoid stove-pipe system development, and to ensure a cohesive state effort.

Figure 5 shows the project implementation structure for Project SchoolView™.

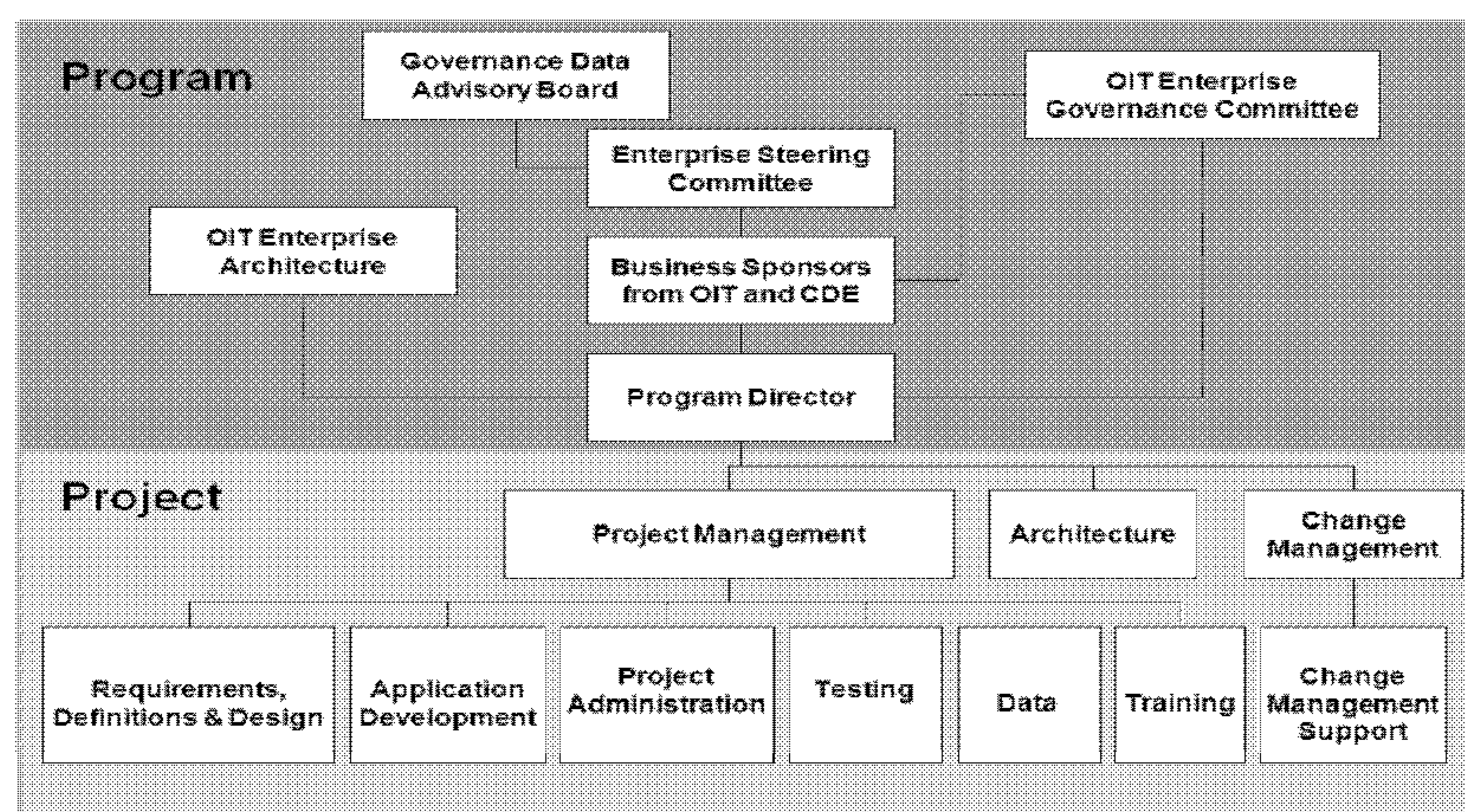


Figure 5

Figure 6 shows the broader context of operations and support within which Project SchoolView™ will be implemented. In addition to facilitating effective project management, change management and knowledge transfer, this structure supports sustainability of the work described in this grant application long after the grant term ends.

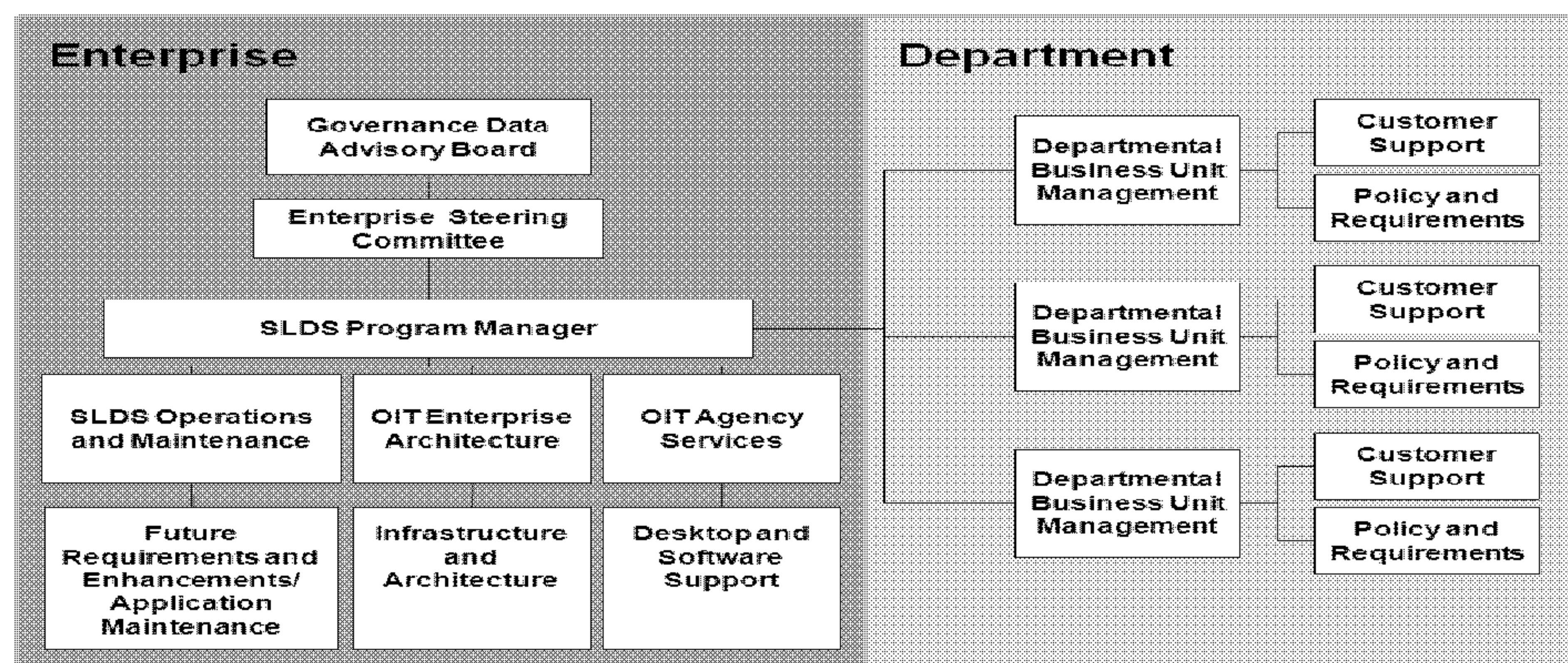


Figure 6

## B. PROJECT GOVERNANCE

The Steering Committee will provide strategic business guidance for risk mitigation; interact with the Executive Sponsors and the Program Manager to understand key deadlines, resource needs and deliverables; and ensure the project will serve the needs of stakeholders effectively and efficiently. Data governance issues will carry increased visibility and significance as the current SLDS is expanded to link to data systems of other state agencies. Issues related to data governance are discussed in Section III. The Steering Committee will be co-chaired by the Executive Sponsors, Robert Hammond, Deputy Commissioner, CDE and Leah Lewis, Enterprise Architect, OIT.

The cross-agency Steering Committee will include:

- Rich Wenning, Associate Commissioner, Office of Performance and Policy, CDE
- Dan Domagala, Chief Information Officer, CDE
- Matt Gianneschi, Director of Education Initiatives, Office of Governor Bill Ritter, Jr.
- Liz Aybar, Deputy Director of Education Initiatives, Office of Governor Bill Ritter, Jr.
- Micheline Casey, Chief Data Officer, OIT
- Jason Presley, Director of Information and Research, CDHE
- Ron Ozga, Chief Information Officer, Colorado Department of Human Services
- Jim Lynn, Agency Services Director, OIT
- TBD, Early Childhood Commission
- Jan Rose Petro, Education Data Accountability Committee (EDAC)
- TBD, Government Data Advisory Board's Education Data Subcommittee
- TBD, Colorado Council of Deans of Education
- Jami Goetz, Quality Teachers Commission
- TBD, LEA representative

EDAC and the Education Data Subcommittee are stakeholder groups that will be consulted during the project.

**Change Management.** The State of Colorado is embracing transformative social and organizational change. It will be imperative that both the project and the entire program leadership team be thoughtfully coached on change leadership throughout the implementation by the change management team. Areas of focus include but are not limited to: effective communication, resistance management, capable sponsorship, internal and external marketing. In addition, these leaders will be key participants in coaching and guiding the diverse stakeholder population through this transformative change. Therefore the SchoolView™ Program team will place an importance on the change management role ensuring it feeds both into the project team and the steering committee and out to the stakeholder population.

### **C. PROJECT MANAGEMENT**

Project SchoolView™ will reside in the Colorado Department of Education's IMS Unit, under the direction of Dan Domagala, the Department's Chief Information Officer. As described above, OIT will certify all projects and will facilitate the cross agency collaboration and linkages required to build and maintain a P-20 data system.

**Management Controls.** To ensure effective project management, the IMS Unit employs a project management framework that incorporates industry best practices. Each SLDS project will follow formal initiation, planning, monitoring and closing phases tracked using project management software.

- **Initiation.** This phase consists of capturing the scope of the project, identifying deliverables, obtaining executive sponsorship and securing vendors necessary for the planning and execution of the project and results in a project plan and schedule. Much of this work has already been accomplished through the grant development process.
- **Planning.** During this phase the business and functional requirements will be generated along with any updates to the overall project plan and schedule. The change management strategy will also be developed during this phase.
- **Executing/Monitoring.** During this phase multiple deliverables will be built and tested against the requirements. Once all testing is completed and Final Acceptance approved, the system is deployed to a production environment. Required training will occur in this phase as well.
- **Close out.** Once the system is in production, IMS will perform a scope verification with the vendor to ensure all required elements have been met. Lessons learned will be identified and captured for future application. Close out of contracts and final payments also will be performed in this phase.

### **D. TRAINING AND TECHNICAL ASSISTANCE FOR USERS**

Project SchoolView™ will reach its full transformative potential in a culture of data use when users have the knowledge and dispositions to apply data to decision-making, from instructional decisions at the classroom level, to programmatic decisions at the school level, to strategic

investment decisions at the state level. Building a culture of knowledge management in P-20 education, leveraged by cutting edge technology, is a primary focus of Colorado's Race to the Top Application.

For the SLDS grant, the user support emphasis will be on training and technical assistance that prepares users to navigate and interact with Project SchoolView™ at points and functions appropriate to their specific roles. CDE successfully implemented a large-scale training and technical assistance effort in conjunction with the launch of the Colorado Growth Model that can be replicated and expanded for this project. Delivery will be organized around a training the trainer model and will seek to engage and build the expertise of district and university information technology staff. Web-based seminars and video tutorials will provide additional learning opportunities available on demand. The first step in designing the content and delivery of training activities will be outreach to user groups to identify their concerns, needs, and preferences. Just as the attributes and functionality of Project SchoolView™ will be designed with the needs of stakeholder users in mind, so will training, user support and feedback reporting.

## V. PERSONNEL AND FINANCIAL RESOURCES

### A. PROJECT PERSONNEL

Table 3 describes the internal and external project team by role, responsibility, name/title and maximum amount of time that will be dedicated to Project SchoolView™. The project team has the qualifications and time commitments needed to implement Project SchoolView™ in accordance with the timelines set out in the project plan. The mix between state employees and contractors/consultants has not been fully determined. It is anticipated the project team will consist of approximately 19 full time equivalent resources in addition to the project management, change management and program team resources.

**Table 3. Project Personnel**

Role	Responsibility	Name/Title	FTE
Steering Committee	Provides tactical business guidance for risk mitigation. Interact with Sponsors and Program Director to understand key deadlines, resource needs, and deliverables. Ensures project will serve the communities and the customers effectively and efficiently	Various	10%
Project Sponsors	Provide strategy and vision; interact with stakeholders to understanding risk and options; determine funding and resource allocation; receive and escalate critical issues from project management	Robert Hammond, Deputy Commissioner, CDE Leah Lewis, OIT	5% 5%
Program Director	Management of the project at a strategic level. Provides a single point of accountability to deliver the project in accordance with the project commitment.	Dan Domagala, CIO, CDE	20%

Role	Responsibility	Name/Title	FTE
Change Management/Leadership	Management and coaching of change leaders and change agents to ensure the organization is prepared for, able to manage and sustain the change.	To be hired	100%
Project Manager, CDE	Develops detailed project plan and leads implementation of CAPTURE and PROVIDE initiatives	To be hired	100%
Project Manager, OIT	Develops detailed project plan and leads implementation of the LINK initiative	To be hired	100%
Enterprise Architect	Lead the development of single holistic enterprise architecture model from all architecture perspectives (Business Services, Business Processes, Information, Applications and Technology). Ensure the Enterprise Architecture is closely aligned to the Strategy, Operating Model and IT strategy, and satisfies all enterprise architecture requirements	Leah Lewis, Enterprise Architect, OIT	30%
		Dee Abueldahab, Enterprise Architect, CDE	40%
Program Administrator	Provides support to the program director and project managers such as project plan tracking and maintenance, detailed budget tracking and procurement support.	Lisa Bradley, Project Manager	50%
Training	Design training plan, and training tools and facilitate training end users	To be hired	100%
Requirements Definition & Design	Lead functional design of business solutions	To be hired	100%
Applications Development/Systems Maintenance	Design and build technical solutions to the requirements Interact with designers for guidance and QA for testing	To be hired	25%
Quality Assurance/Testing	Develop business scenarios with designers SMEs and developers to identify issues Develop test scripts based on business scenarios defined by designers and test solutions in a test environment and report results	To be hired	100%
Data Services/User Support	Resolve user issues when contacted Proactively follow-up with the users for quality assurance. System and application administration	Chris Edmundson, CDE	10%
Data Base Administrator	Oracle database administrator	Jeff Stevenson	10%

Role	Responsibility	Name/Title	FTE
Data Warehouse	Coordination of warehouse expansion and EdFacts reporting	Keith Glenn, Data Warehouse Supervisor	35%
	Database modeling and architecture	Manilal Bhoraniya	20%
Data Reporting/ Business Intelligence	Administer and develop SchoolView™ reports	Dean Bixler	25%

Appendix B contains resumes of key personnel that demonstrate expertise and backgrounds commensurate with the responsibilities they will undertake to implement Project SchoolView™.

## **B. SUSTAINABILITY AND FINANCIAL RESOURCES**

The state has committed \$1.1M for the Educator ID program and will identify additional funding through legislative processes and private funding sources to ensure longer term sustainability. As evidenced by the letters of support from state leaders and stakeholders (refer to Appendix D), solid bipartisan agreement exists among Colorado educators and policymakers that data sharing and knowledge management are critical to achieving dramatically improved student outcomes. This consensus priority will be reflected as the General Assembly establishes and as the Governor and state agencies administer the state education budget in coming years.

With an annual budget of \$3.5 million dollars, the Information Management Services unit provides technology support for every working unit and individual person at the Colorado Department of Education. The 35 person IMS team is comprised of five collaborative teams that work together to design and develop customized solutions to meet department needs, including customization and installation services for purchased software. Two particular aspects of the unit are noteworthy in relation to this grant application. First, the 2007 SLDS funds helped to rapidly expand an existing data warehouse and build-out an extensive extract-transform-load (ETL) process that fully automates the movement of data between databases and into specified file formats for Federal reporting (EDEN/EDFacts) or State reporting (SchoolView™). In the past two years, Colorado has funded a full-time data dictionary analyst, an ETL programmer, and a Chief Information Officer to sustain and improve upon these investments. Second, recent state legislation enabled the shifting of \$280,000 in annual report-card printing costs towards 2.7 annual full time employees to sustain and expand the SchoolView.org information portal. In all, the trained and dedicated IMS team, in full collaboration with the OIT, is poised to put federal funds to work and staffed to sustain solutions.

Moreover, interagency data sharing is a long-term initiative in the State that goes far beyond the education sector. Through legislation mentioned previously in this document (and summarized in Appendix A), Colorado has built the foundation for sustainability of this initiative across state government services. Under OIT's leadership, the primary architectural pieces in the *SchoolView™ - Link* strategy – the statewide unique identifier, enterprise service bus, and access and authentication management – will continue to be developed and implemented across other business sectors of state government. SLDS dollars will not pay for these implementations.

However, as other agencies are able to pay for and migrate to the services in the *Link* strategy, the maintenance costs for CDE's portion of the statewide implementation will be reduced. OIT will develop an appropriate cost-allocation model to charge all state agencies utilizing the services. Costs for each agency will be reduced over time as more agencies take advantage of the services and the costs are allocated among more partners.

As detailed in the Budget Narrative, the State of Colorado is requesting \$17,886,993 to complete the work proposed. Each line item in the budget is closely aligned with the goals and measurable outcomes of Project SchoolView™, as outlined in Section II of this application. CDE and OIT are dedicated to delivering a positive return on this financial investment and the management controls in place will ensure critical strategic initiatives are delivered within this budget.



# Project Narrative

## Project Narrative - Appendix A, Optional Attachments

Attachment 1:

Title: **Project Narrative - Appendix A** Pages: **9** Uploaded File: **SLDSAppendixA-FINAL.doc**

## APPENDIX A: OPTIONAL ATTACHMENTS

- Overview of Colorado P-20 Education Alignment Legislation
- Pictures of Colorado's Data System – Current and After Project SchoolView™
- Multistate Collaboration: Copy of Agreement for a Collaborative Effort to Create Common Data Visualizations that Build Upon the Colorado Growth Model
- Participants in Colorado's SLDS Summit and Organizations/Agencies Consulted in Development of SLDS Grant Application

## Overview of Colorado P-20 Education Alignment Legislation

*SB08-212 - Preschool to Postsecondary Alignment Act (Colorado Achievement Plan for Kids, CAP4K)* establishes the vision of a seamless education system in Colorado from preschool to postsecondary/workforce (P-20) and creates a performance-based eligibility to higher education. Pursuant to this law, the State Board of Education recently adopted definitions of school readiness and (in conjunction with the Colorado Department of Higher Education) postsecondary and workforce readiness (PWR) that are guiding the development of new statewide model content standards. This will mark the first revision of these standards since their adoption in the mid-1990's. New methods of assessment aligned with the new standards will follow. CAP4K also prescribes a new method of awarding high school diplomas that indicate students have achieved postsecondary and workforce readiness and seeks to align college admission requirements with new high school standards. Colorado also looks forward to being able to adopt standards that are consistent with the emerging common core. The Act creates a pilot program for PWR assessments that will inform the selection of the postsecondary and workforce planning, preparation and readiness assessments to be administered statewide. At the other end of the spectrum, the state's youngest learners will receive individual readiness plans that address the skills and knowledge areas in which they need assistance to make progress toward school readiness. Earlier legislation (HB 08-1364) charged the state with assigning state assigned student IDs to students enrolled in publicly funded early childhood education programs. The legislation identifies requirements for reporting on standards, assessment, and postsecondary metrics.

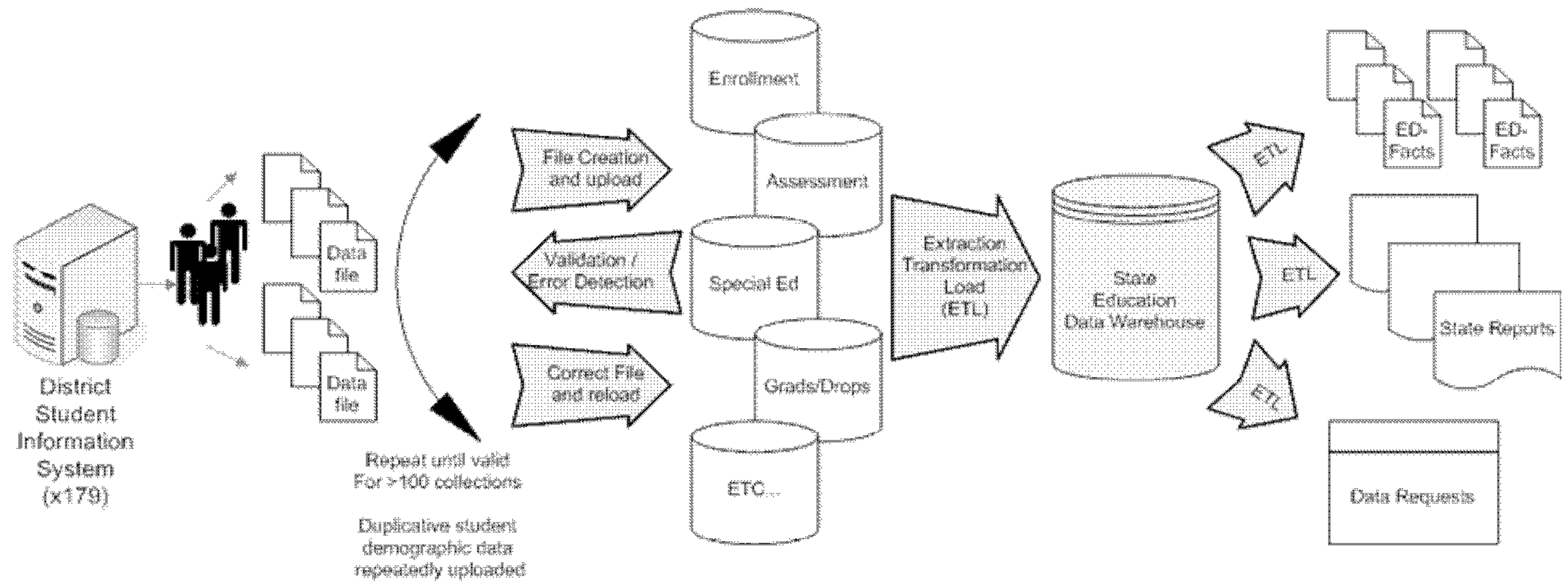
*HB 09-1065 (Educator Identifier System Act)* directs CDE to develop the state's first system to assign unique identifiers for all educators, which can be used to match teachers with student outcomes. The act envisions a system that can link teachers, students, and educator preparation programs tracking the cycle from teacher preparation to classroom performance to impact on student achievement. Information gathered by the system will be used to study the "teacher gap," to evaluate teacher training and development programs and identify best practices, to study teacher mobility and retention issues, and to recognize and reward individual teachers. The system must be capable of assigning unique, secure, and confidential identifiers for all teachers and of reporting specified teacher-related metrics. Funding for the development and implementation of the system is dependent on securing outside gifts, grants or donations.

*SB 09-163 (Education Accountability Act of 2009)* aligns conflicting accountability systems through common performance indicators, enabling a single accountability system for state and federal purposes grounded in the Colorado Growth Model; enhances oversight of improvement strategies for low performing districts and schools; and creates a fair, clear and more effective cycle of support and intervention. Most relevant to this grant, the legislation also modernizes and aligns reporting through application of technology and improved public disclosure and access. The Act directs CDE to deploy a Web-based portal (known as SchoolView™) that displays information on student performance, postsecondary readiness and other performance indicators. The portal also must report school-level information about student enrollment, completion rates and mobility rates and support analysis of public school expenditures and program characteristics at different levels of the system (school, district, state). Additionally, the portal must have the capacity to deliver instructional advice and content supported by formative

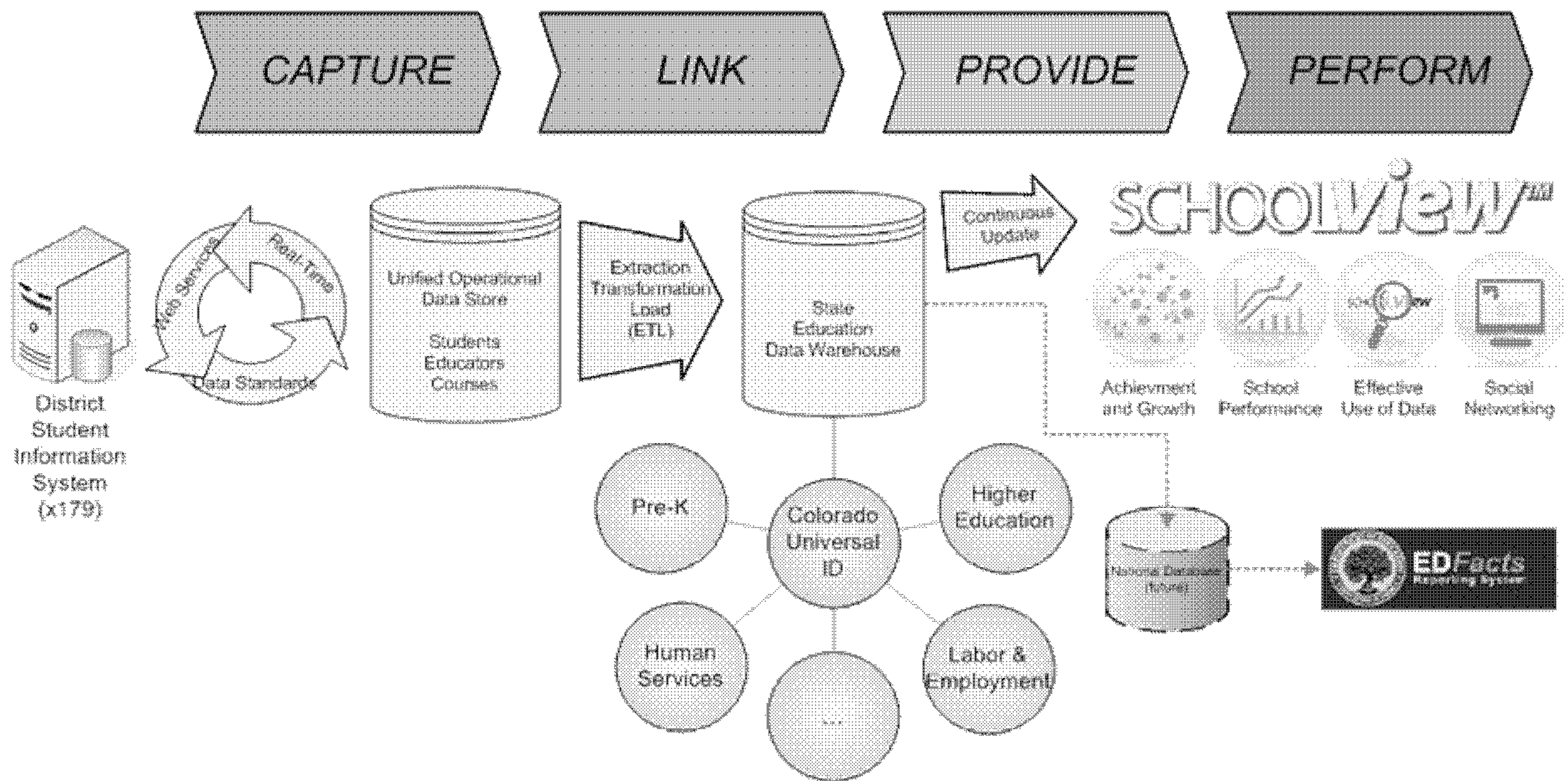
assessment data, to connect teachers across the state, and to enhance educators' capacity to use data and manage knowledge.

*SB 09-1285 (Creation of a Data Advisory Board)* created the state's first Government Data Advisory Board and a 15-member Education Data Subcommittee to implement the state's interdepartmental data sharing protocol and improve data sharing practices between and among state departments, school districts, postsecondary institutions, non-profit organizations, and professional researchers. The Education Data Subcommittee is tasked to provide recommendations to the State Chief Information Officer regarding appropriate information technology and reporting formats for education data. This legislation builds on HB 08-1364, which authorized the state's executive branch departments to share unit-level records and charged the Office of Information Technology with creating a state-level interdepartmental data sharing protocol.

# K-12 Data Process: Current



# P-20 Data Flow: Future



# State Collaboration: Longitudinal Data Systems, Data Visualization, Research and Development

## Agreement for Execution - Effective Date: November 2, 2009

The terms on these two pages outline the initial agreement for a collaborative effort to co-locate state longitudinal growth data sets for the purpose of creating common data visualizations that build upon the Colorado Growth Model.

- 1. *Agreement to Participate.*** Each Chief State School Officer signs on to the collaborative research and development effort and agrees to the participation of the Chief's designee, chief information officer, and state assessment director or director of research and evaluation.
- 2. *Common Longitudinal Growth Measure.*** Each state agrees to calculate growth percentiles in the same manner using R (programming language) to allow common cross-state comparisons and data visualization development related to normative and criterion-referenced growth.
- 3. *Common Display Platform.*** Each state agrees to use the Colorado Growth Model Version 1.0 or 1.5 display layer as an initial common visualization platform.
- 4. *State Branding.*** Each state may rebrand the display layer (e.g., "The Indiana Growth Model") and will provide mutually agreed upon attribution to Colorado and the National Center for the Improvement of Educational Assessment.
- 5. *Common Development Environment.*** To the extent practicable, each state agrees to load its longitudinal data set into a common, standardized data storage environment with appropriate security. This storage environment may be a cloud-based, virtual environment. The purpose is to permit common cross-state enhancement of the data visualization tools by the application developers. The application developers for Versions 1.5 and 2.0 will be the Colorado Department of Education, the National Center for the Improvement of Educational Assessment, and Universal Mind.
- 6. *Enhancements to the Display Layer.*** Each state agrees to collaborate in the development of a common Version 2.0 of the Growth Model Display Layer. Such modifications will include, but not be limited to, postsecondary metrics, multi-year visualization and animation, inclusion of teacher identifiers, multiple axis selection, enhanced mapping functionality. Each state may fund the development of different enhancements of the display layer. For example, a state may fund development of displays incorporating unique teacher identifiers and interim assessment data. Enhancement priorities will be established through consensus among the participating states.
- 7. *Modifications Shared.*** Each state agrees to collaborate in, and contribute know-how and financial resources to, the development of modifications and enhancements, which will be shared freely among each participating state, subject to the Creative Commons Attribution-Non-Commercial-Share Alike 3.0 Public License (<http://creativecommons.org/licenses/by-nc-sa/3.0/legalcode>).

8. ***Communications and Publicity.*** Each state will collaborate on communications and publicity related to the collaborative effort, including an initial press release announcing the agreement.
  
9. ***Race to the Top and SLDS.*** Pending each state's determination of the success and viability of the effort, each state agrees to include language in its Statewide Longitudinal Data Systems (SLDS) Grant and Race to the Top Proposal referencing the collaborative effort as part of the invitational priority related to enhancements of longitudinal data systems and include a budget item to support the collaborative.
  
10. ***Collaboration with CCSSO's LEARN Effort.*** Pending each state's determination of the viability of the proposed CCSSO effort, each state agrees to associate this collaborative effort with the LEARN effort. In doing so, each state agrees to request that CCSSO make funding from the State Education Data Center available to maintain and enhance the initial collaboration, including funding for a common, standardized storage environment.

The undersigned parties agree to the terms outlined above.

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Dwight D. Jones, Commissioner, Colorado Department of Education

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Tony Bennett, Superintendent of Public Instruction, Indiana Department of Education

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Tom Horne, Superintendent, Arizona Department of Education



### **Colorado SLDS Summit Participants (October 14, 2009)**

- Rich Wenning, Associate Commissioner, Office of Performance and Policy, CDE
- Dan Domagala, Chief Information Officer, CDE
- Jami Goetz, Quality Teachers Commission
- Nina Lopez, Director of ARRA, CDE
- Lisa Medler, Federal Program Administration, CDE
- Micheline Casey, Chief Data Officer, OIT
- Jeremy Felker, Director, Instructional Data Reporting Office, Jefferson County School District
- Lisa Bradley, Project Manager, Information Management Systems Unit, CDE
- Liz Aybar, Deputy Director of Education Initiatives, Office of Governor Bill Ritter, Jr.
- Elliott Asp, Assistant Superintendent, Performance Improvement, Cherry Creek School District
- Ed Freeman, Chief Information Officer, Denver Public Schools
- Shelley Kooser, Chief Information Officer, Academy School District 20
- Jody Ernst, Director of Research and Evaluation, Colorado League of Charter Schools
- Linda Barker, Colorado Education Association
- Jason Presley, Director of Information and Research, CDHE
- Julie Carnahan, IT Training Leader, Telstra
- Jerry Taylor, Application Development Manager, CDE
- Julie Siwanowicz, Enterprise Architect, CDE
- Julie O'Brian, Director, Center for Transforming Learning & Teaching, University of Colorado Denver
- William Browning, Rebound Solutions Consulting
- Lori Bowers, Colorado Pre & Kindergarten Program Director, CDE
- Nick Ortiz, Colorado Preschool Program & Results Matter Data
- Nan Vendegna, Early Childhood Initiatives, CDE
- Ron Ozga, Chief Information Officer, Colorado Department of Human Services
- Elizabeth Groginsky, Director, Adams County Head Start
- William Bonk, Research and Evaluation, CDE
- Renelle Darr, Insight Consulting
- Jan Rose Petro, Educational Data Advisory Council
- Josh Allen, Denver Public Schools
- Scott Lee, Wyant Data Systems
- Dale McCall, Centennial BOCES
- David Gestner, Colorado Department of Labor and Employment
- Lisa Escarcega, Chief Accountability and Research Officer, Aurora Public Schools
- Mike Miles, Superintendent, Harrison School District 2
- Rick Hammans, School Board Member, St. Vrain School District
- John Knapp, School Board Member, Rocky Ford School District

### **Organizations/Agencies Consulted in Developing SLDS Grant Application**

- Colorado Early Childhood Commission
- Colorado Department of Higher Education

- Colorado Department of Human Services
- Colorado Department of Labor and Employment
- Colorado Department of Revenue
- Colorado Department of Corrections
- Education Data eXchange Council
- Governor's Office of Policy and Research
- P-20 Education Council
- Longitudinal Data Work Group, Race to the Top
- Colorado Association of School Executives
- Colorado Education Association
- Colorado Association of School Boards
- Governor's Data Advisory Board
- Education Subcommittee of the Governor's Data Advisory Board
- Education Data Advisory Committee
- Colorado Department of Education Leadership
- School District Chief Information Officers

# **Project Narrative**

## **Project Narrative - Appendix B Resumes of Key Personnel**

Attachment 1:

Title: **Project Narrative - Appendix B** Pages: **17** Uploaded File: **SLDS AppendixB-FINAL.doc**

## APPENDIX B: RESUMES OF KEY PERSONNEL

### **Robert Hammond-Deputy Commissioner of Education – Executive Sponsor**

Robert Hammond has served as Deputy Commissioner since July 1, 2008. Before then, Mr. Hammond served the Boulder Valley School District as Chief Operations Officer for Administration and Operations beginning in January 2001, after serving as Associate Superintendent for Administration and Operations with the Wichita Public School District in Wichita, Kansas for many years. Mr. Hammond also held positions as Senior Vice President of Farm Credit Services in Wichita, Kansas, Assistant City Manager of Norman, Oklahoma, City Manager of Oskaloosa, Iowa, and Assistant City Manager of Parsons, Kansas before joining the public education arena. He received a Bachelor of Arts in psychology and sociology at Baker University, Baldwin, Kansas, in 1972. Mr. Hammond also holds a Master's Degree in Public Administration, Urban Management from the University of Kansas, Lawrence, Kansas, 1977.

## **Richard Wenning**

### **Professional Experience**

**Associate Commissioner, Colorado Department of Education (Denver, CO) 2008 to present.** Leads CDE's public policy development and the design and implementation of Colorado's educational accountability system, including the Colorado Growth Model. Responsible for the design and implementation of professional development associated with growth-based summative and interim performance evidence. Leads CDE's national policy advocacy work on the reauthorization of the Elementary and Secondary Education Act.

**Vice President, Quality and Accountability, Colorado League of Charter Schools (Denver, CO) 2003 to 2008**

Led the League's Quality and Accountability Division, which supports effective accountability and performance management policies and practices among charter schools in Colorado and the nation. Helped charter schools and their authorizers effectively gather, analyze, report, and use data on school and student performance. Managed the League's Accountability Program, which includes self-studies and school reviews, analysis of longitudinal growth in student achievement, data management support, and accountability policy development.

Served as an Executive on Loan to the Superintendent of Denver Public Schools and led the design of the district's School Performance Framework and helped strengthen the district's performance management practices. Served in a similar capacity at the Colorado Department of Education and led the design of the Colorado Growth Model. Participated in an advisory panel on longitudinal growth models convened by the U.S. Secretary of Education.

**President, Education Performance Network and Senior Vice President, New American Schools (Alexandria, VA) 2001 – 2003**

Established and led a division of the national nonprofit school design organization, providing consulting services to build the capacity of networks of new schools and the organizations and agencies that support and authorize them. The Division's services focus on helping networks of schools thrive at scale by enabling their educational, organizational, and financial viability. Specific services include (1) accountability and performance management, (2) new school formation and leadership development, and (3) teaching and learning designs.

**Founder and Managing Member, Choice Strategies Group LLC (Washington, D.C.) 1998 - 2001**

Founded and led a policy research and consulting firm focused on school design support and accountability-related information and tools. Provided services in (1) accountability and performance management, (2) school formation and implementation; (3) comprehensive school designs; and (4) special education. Clients included charter school developers, operators, resource centers, and authorizing agencies, as well as local and national organizations. (Acquired by New American Schools in 2001.)

**Director of Educational Accountability, District of Columbia Public Schools (Washington, D.C.) 1997 - 1998**

Directed the D.C. Public Schools' student assessment, pupil accounting, and research and evaluation departments. Measured educational outcomes including student achievement, student attendance, graduation, and dropout rates. Oversaw district-wide administration of the Stanford-9 Achievement Test. Developed and implemented new processes to conduct an accurate official enrollment count. Testified before Congress and the D.C. City Council.

**Senior Policy Advisor for Congressional and Intergovernmental Affairs, District of Columbia Public Schools, Office of the Chief Executive Officer (Washington, D.C.) 1997**

Formulated and implemented legislative and intergovernmental strategy for the Chief Executive Officer, including a successful \$36.9 million supplemental appropriations request to Congress. Prepared all testimony provided by the CEO before Congress and the D.C. City Council. Led implementation of D.C.'s charter school legislation, including activities related to the Federal charter schools grant program, facilities disposition policy, and per-pupil payments.

**Clerk, United States Senate, Committee on Appropriations, Subcommittee on the District of Columbia (Washington, D.C.) 1996 - 1997**

On behalf of the Committee Chairman, oversaw drafting and passage of the District of Columbia provisions of the FY 1997 omnibus appropriations bill, including legislation (1) privatizing the Student Loan Marketing Association and the College Construction Loan Insurance Association, resulting in \$40 million in proceeds for D.C. Public Schools' facilities repairs; (2) transferring responsibility and funding for school facility repairs to the D.C. Financial Control Board and the General Services Administration; (3) expanding the Congressionally established Control Board's authority over finance, personnel, and disposition of unused school property; and (4) amending provisions on charter schools to strengthen approval and oversight processes.

**Professional Staff, United States Senate, Committee on Appropriations, Subcommittee on Labor, Health and Human Services, and Education (Washington, D.C.) 1995 - 1996**

Managed appropriations accounts for charter schools, vocational and adult education, higher education, student financial assistance, and employment and training; participated in mark-ups, floor action, and conference proceedings for FY 1995 and FY 1996 appropriations bills. Prepared legislation (1) amending the Goals 2000: Educate America Act; (2) maintaining the Job Corps as a national program; and (3) authorizing the establishment of charter schools in the District of Columbia. Prepared numerous public statements for speeches and hearings.

**Senior Policy Analyst, United States Government Accountability Office, Education and Employment Issue Area (Washington, D.C.) 1987 - 1995**

Planned and managed studies on education policy issues including: (1) Title I Accountability, (2) private management of public schools, (3) charter schools, (4) school-based management and budgeting, (5) discriminatory ability grouping in public schools, and (6) effective schools programs. Prepared testimony for congressional hearings. Instructor in GAO's Training Institute for Evaluation Approach and Methodology Selection. Joined GAO as a Presidential Management Intern.

## **Daniel Domagala – Chief Information Officer**

### **Summary**

Information Technology Professional with over twenty years of progressive managerial and technical experience. Recent specialization in Data Warehouse design, architecture, and leadership. Other expertise includes systems analysis and design, applications development, data modeling, information security, and database administration.

### **Business Experience**

**Colorado Department of Education** Denver, Colorado 2004-present  
*Chief Information Officer*

- Direct the thirty-person Information Management Services unit. Provide leadership and direction for application development, business intelligence, data services, and network/database administration teams. Oversee budget and personnel decisions. Determine priorities and develop project plans while establishing an enterprise-wide technology vision for the Colorado Department of Education.
- Project Director for Colorado's \$4.2 million dollar Statewide Longitudinal Data System grant program. Initiated in 2007, this nationally acclaimed effort has rapidly expanded Colorado's education data warehouse to support alignment of data for performance management and leading-edge data visualization tools.
- Directed the design, development, and implementation of the Colorado Growth Model interface. This advanced web 2.0 application has been successfully deployed in school districts across the state, leading to detailed graphical representation of individual student academic growth and achievement.
- Managed and provided leadership for data warehouse team, guiding architecture, ETL, data validation, and business intelligence tasks. Directed and led the annual effort of producing and distributing statewide School Accountability Reports for all public K-12 schools in Colorado, accommodating legislative reporting mandates while providing parents and taxpayers with important school performance information.
- Implemented Cognos to provide a query window into the data warehouse and allow detailed analysis via customized reports and cubes. Replaced antiquated OracleReports and Discoverer infrastructure with a web-based Cognos solution, providing timely data and quality information to educational support units and local school districts.

**Cendant/Trip Network, Inc. (cheaptickets.com, trip.com)** Englewood, Colorado 2000-2004  
*Sr. Data Warehouse Architect/Warehouse Technical Lead*, Business Intelligence

- Conceptualized, designed, and led development of an enterprise data warehouse from the ground up, for on-line travel agency Trip.com, integrating customer profile data with travel transactions, financial records and website click-stream data.
- Integrated a second on-line agency (cheaptickets.com) into existing infrastructure, accommodating 25 million new customers and handling a ten-fold increase in search and purchase transactions, while also guiding expansion of Business Intelligence group from 2 members to 11.
- Introduced Brio as a data delivery tool, providing marketing, finance, and business analysts

an effective window into the warehouse data. Recruited and guided report developers to meet increasing demands for business intelligence.

- Constructed, implemented, and eventually led the development of hundreds of data Extraction-Transformation-Load (ETL) routines using DataStage and Informatica. Created ETL standards and automated nightly warehouse data processing, including leading and scheduling work of three ETL developers.
- Continuously evolved and tailored the enterprise data warehouse to keep pace with shifting business requests, new data sources and targets, and changing management teams. A flexible architecture built on conformed dimensions and single-grain facts provided a solid foundation capable of growing with the business.

**Jato Communications** Denver, Colorado

Feb 2000-Oct 2000

**Data Architect**, Operations Support Systems

- Designed and deployed enterprise-wide data warehouse, integrating data from disparate telecommunications systems and databases into a centralized repository. Incorporated dimensional modeling techniques, Sun hardware, Oracle database technology, and Oracle's Warehouse Builder software.
- Administered Oracle database systems including billing, order management, and data warehousing. Responsible for defining/implementing database hardware and software requirements related to purchased and developed applications.

**IHS Energy Group (formerly Petroleum Information/Dwights)** Denver, Colorado 1994-2000

**Database Analyst**, worldwide products

- Designed world's largest independent oil & gas data warehouse, effectively handling information on 3.2 million active and historic wells along with 2.8 million producing properties.
- Created data structures, validation routines, and relational dependencies to house massive amounts of oil and gas related exploration and production data.
- Designed and developed a commercial Internet-based application to browse and report oil and gas information. Devised a de-normalized dimensional-based model to improve data query performance and simplify program code for this and other database applications.
- Partnered with international offices and external organizations (such as the Public Petroleum Data Model association) to standardize and streamline data storage and retrieval, ultimately benefiting the entire oil and gas industry.

**CONOCO INC.**, Houston, Texas

1989-1994

**Systems Analyst**, Upstream Business Solutions

- Led development and implementation of million-dollar global property information system designed to guide executive management in portfolio investment decisions. Managed implementation phase of project, directing responsibilities for team members.
- Implemented a customized dual-language financial system in Moscow for a \$375 million Russian joint venture project. The system was a key component in this pioneering Russian/American petroleum development partnership. Trained Russian co-workers in the use and maintenance of the system.
- Installed and configured Oracle/UNIX based database in Oklahoma City division office, providing client/server application access for 200 employees. Teamed with local staff to



provide dependable database administration and application support.

**HEWLETT-PACKARD**, Fort Collins, Colorado 1988-1989

*Programmer Analyst - Intern*, Information Systems Department

- Provided Local Area Network (LAN) Administration to PC users throughout 2,000 user complex, effectively tying together PC workstations to allow sharing of software tools.

## **Education**

**M.B.A.** University of Colorado at Denver 1999

**B.Sc.** Computer Information Systems, Colorado State University 1989

Professional Training includes:

- Cognos ReportNet, Cognos Corporation
- Informatica Boot-camp, Core Integration Partners
- Data Warehouse World Conference, The Data Warehouse Institute
- Oracle Web Application Server, Oracle Corporation
- Oracle Database Administration, SageLogix/Oracle Corporation
- Introduction and Advanced UNIX, Miaco Corporation
- Oracle PL/SQL, Performance Tuning, TUSC, Inc.

Contributing Member of Education Information Management Advisory Consortium (EIMAC), a service of the Council of Chief State School Officers (CCSSO)

Frequent presenter for the National Center of Education Statistics (NCES) annual Management Information Systems Conferences

## **Expertise**

Relational Databases: Oracle, Sybase, SQLServer, DB2

Modeling Tools: QDesigner/PowerDesigner, ERWin, Oracle Designer

ETL: Informatica PowerCenter, Assential DataStage, Oracle SQLLoader

Reporting Tools: Cognos, Brio, Crystal Reports

Hardware: PC Workstations/Servers, Sun, IBM Mainframes, HP-3000, UNISYS 80

Operating Systems: LINUX, UNIX, OS/2, Windows

Languages: SQL, PL/SQL, Java, HTML, XML, C++, COBOL, FORTRAN, BASIC, SAS, JCL

## Dean Bixler – Data Warehouse Programmer

### Experience

**Colorado Department of Education** Denver, Colorado  
*Data Warehouse Programmer/Analyst*

February 2006-present

#### **Growth Summary Project**

- Utilizing a mockup of the report and some requirements, designed and developed School and District Growth Summary reports.
- Architected a solution to accommodate over 1,500 data points per school.
- Solution included six mappings that populated three datamart tables for school, district and state.
- Developed framework model with district security using OID groups.
- Using Report Studio, created two separate reports for School and District that included page sets and 250 conditional formats.
- Through the use of bursting and the Cognos SDK, provided a distribution solution that is referenced in CDE's schoolView.org.

#### **District Accreditation Scorecard Project**

- Interpreted requirements document, and subsequently planned, designed, developed and architected a solution for the District Accreditation Scorecard.
- Created nine mappings utilizing expression, aggregator, joiner, update strategy, and lookup transformations.
- Architecture design included nine staging tables combined into one final denormalized table for exceptional report performance.
- Developed framework model and package for metadata layer.
- Produced two separate scorecards to satisfy summary and detail level information.
- Reports utilized conditional styles, style variables, bursting, and complex grouping functionality.

#### **Colorado Education Data Analysis & Reporting System (CEDAR) Project**

- Responsible for all report development and modification utilizing Report Studio based upon user requirements and feedback.
- Creation and maintenance of all Framework Manager models, including the amending of fact and dimension tables.
- Implemented modifications to OLAP PowerPlay cubes to reflect current user requirements utilizing PowerPlay Transformer.
- Administrator of the Access Manager application, including the creation of new users, user classes, and school districts.
- Provide training to districts on how to use the CEDAR tool at various locations throughout Colorado; conducted 12 trainings consisting of 10-20 participants thus far.
- Helped reverse engineer Framework Standards (Radar Graph) report that was created in proprietary query tool. The end result was the data warehouse team being able to produce a better version of the report for CEDAR users.

- Develop and design data marts to improve report performance when deemed necessary.
- Respond to inquiries from users regarding data, navigation, and other inquiries.
- Revamped CEDAR homepage, including the creation of training documents and quick fix publications.

### **School Accountability Report (SAR) Project**

- Load and verify source data for fact and dimension tables utilizing Informatica and TOAD software applications.
- Modify the SAR report in Report Studio to comply with legislative bills and amendments.
- Coordinate and organize with printer all activities involved in the School Accountability Reporting Process including, but not limited to the publishing, proofing and distribution of these reports to 182 school districts and 1906 schools (public) in Colorado.
- Generate press packet for Governor's School Accountability Report Press Conference that is distributed to all interested media outlets.

### **Other Data Warehouse Duties**

- Modified Informatica mappings and workflows to meet data requirements per legislation that called for changes to the SAR involving Safety and Discipline categories and measures.
- Aided in the decision making process for the data warehouse to implement policy to remedy slowing changing dimensions.
- Created Informatica mappings and workflows to reflect mass changes in CSAP, CSAPA, and CELA universal file layout.
- Produce reports to fulfill data requests from a variety of sources utilizing TOAD (SQL) and/or Cognos.

**Coors Distributing Company** Denver, Colorado

September 1997 – February 2006

### ***IT Process Analyst***

- Administered Margin Minder server, including, but not limited to data integrity, training, and defining datasets.
- Implemented S4I/Edgar archive, messaging and retrieval tool which resulted in time and material savings.
- Successfully converted Route Accounting System – Descartes to VIP
- Executed 150 Pocket PC installations including the creation of training manuals, technical support, and upgrades.
- Ensured that interfaces along with data were in sync with one another across multiple data warehouses – DB2, Oracle, and Margin Minder.
- Point person for all data mining activity.
- Liaison between Pocket PC users and VIP programmers.
- Data Steward (CoorsNET) for Denver and Glenwood Springs facility.
- Set up Windows NT, Squid-Proxy, Exchange, RAS, and other user accounts for Boise, Denver, and Glenwood Springs.
- Audio/Visual support and troubleshooting for hospitality room events.
- Generate beer order and forecasting tools for sales managers and product procurement on a weekly basis.
- Designed and constructed company wide intranet for employees to access process flow

diagrams, company info, and other additional online resources.

- Manage and assist with Lanier print server.
- Revamped reporting process for beginning inventory, forecasting, and removals which resulted in a 2 hour weekly time savings.
- Completely managed the Cognos Impromptu Web server primarily used for Customer Reviews.
- Conducted annual retailer survey which highlighted areas of opportunities and emphasis for the following year.
- Provided all static and ad-hoc volume reporting for Sales Department.
- Started advertising tracking program that aided in the number one market share of liquor store advertising.
- Generated sales presentations regarding category management, creating partnerships, and brand acquisition.

## **Training**

**Adobe Flex 3: Developing Rich Client Applications**

**Live Cycle Data Services: Integrating with Data and Messaging**

**Oracle Database 10g: SQL Fundamentals I & II**

**Data Warehouse Architecture & Methodology Boot Camp**

**Cognos 8 BI – Content Administration**

**Cognos 8 BI – Server Administration**

**Mapping Colorado Communities: An Introduction to GIS & Community Analysis**

**Informatica PowerCenter 7: Level I Developer**

**Cognos ReportNET 1.1 – Metadata Modeling Part 1**

**Cognos ReportNET 1.1 – Report Authoring Part 2**

**Introduction to Microsoft Project**

## **Lisa Bradley – Project Manager**

### **TECHNICAL SKILLS**

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Project Management: PMBOK, Microsoft Project, RUP Methodology, MindMapper  
Languages: SQL, PL/SQL, Java, HTML, COBOL, Oracle Developer/2000  
Data Bases: Oracle 9i & 10g  
Tools: TOAD, Visual SourceSafe, MindMapper, MS Project, Oracle Forms,  
Microsoft Office Suite (Word, Access, Excel and PowerPoint)

### **PROFESSIONAL EXPERIENCE**

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#### **COLORADO DEPARTMENT OF EDUCATION**

##### **IT PROJECT MANAGER**

**JANUARY 2009 - PRESENT**

Serve as the first point of contact for all IT projects.

Established a project management methodology for the IMS Unit

Responsible for managing all IT related projects for the IMS Unit.

Ensures new IT projects are adequately planned, staffed and monitored for success.

#### **COLORADO DEPARTMENT OF REGULATORY AGENCIES (DORA)**

##### **IT MANAGER / PROJECT MANAGER (PROMOTION)**

**DECEMBER 2007 – JANUARY 2009**

Responsible for managing small to mid-sized web projects that range \$50K - \$200K and last 3 months up to 1.5 years.

Project managed a web project for the Division of Insurance that automated the collection of premium taxes. This web application takes in over \$170 million each year. This was a mid-sized project costing approximately \$200K and took 1.5 years to implement. By automating this project the Division of Insurance has saved a significant amount in resources used to manually intake premium taxes for insurance companies.

Project managed the Physician Profile web application for the Division of Registrations. This project was 3 months in length and cost approximately \$150K. The team size was 1 business analyst, 2 developers, and one QA person. The State of Colorado mandated that the Division of Registration collect profiles on all physicians practicing in Colorado. These profiles consist of any disciplinary actions taken against a physician and are made available online for the citizens of Colorado to search.

Project managed the E-filings project for the Public Utilities Commission (PUC). This project was 1.5 years in length and cost approximately \$150K. Prior to implementing this web application, the PUC accepted filings in paper form. Most of these filings are 100 pages in length and can be served to multiple utilities. This web application automated the entire process and saved the PUC as well as the public thousands of dollars in paper printing.

Responsible for establishing and implementing policies and strategies that further the mission of the department.

Responsible for developing standards and procedures for the development and deployment of information systems.

Create and maintain a project management culture throughout DORA by establishing policies and strategies that define how projects are initiated, planned, monitored & controlled, executed and closed.

Provide project management consulting services to executives, division directors and staff that include, developing time and cost estimates for projects; allocating resources to adequately support DORA's business goals and objectives.

For each web project, I'm responsible for assembling the team necessary to implement the project on-time and within budget.

Periodically perform quality assurance by gathering and documenting business requirements to define the work necessary and be able to trace requirements to final deliverables.

Ensure projects are delivered within specified timelines and budget, comply with DORA design and quality standards; and are in compliance with State law.

Manage client expectations through assessing and controlling project scope, project plans, work breakdown structures, requirement documents and project status reports.

Justify, request, interview and recommend web developers for employment, promotions, demotions or transfers.

## **COLORADO DEPARTMENT OF REGULATORY AGENCIES (DORA)**

### **WEB APPLICATIONS SUPERVISOR**

**SEPTEMBER 2004 – DECEMBER 2007**

Manage all phases of the project life cycle from project initiation to project close to bring web applications online.

Perform project scheduling and resource assignment for multiple projects running consecutively.

Manage project teams to ensure projects are; delivered within specified timelines and budget, comply with DORA design and quality standards; and are in compliance with State law.

Develop time and cost estimates for projects; allocate resources to support DORA's business goals and objectives.

Analyze project requests and determine feasibility by working closely with customers to define project requirements.

Assist in the "make or buy" decision process when determining if third party software can meet the needs of the customers, rather than in-house development.

Responsible for assessing and controlling project scope, project plans, WBS and requirement documents; setting and managing client expectations; and assessment and mitigation of project risks.

Provide team technical guidance and coordination, coordinated priorities, facilitate cross-functional communications, and provide performance reviews to a staff of seven developers.

Directed a team of 4 developers and 1 tester who successfully developed and implemented various new applications which resulted in significant cost reductions to the Public Utilities Commission by going paperless.

Designed and implemented web interface for the Division of Insurance (Premium Reports) which allows the citizens of Colorado to compare insurance premiums for auto, health, and homeowner to ensure they are getting the best insurance rates.

Designed and implemented web interface for the Division of Real Estate that allows administrative staff to determine the fingerprint results of Real Estate Agents/Brokers and decide whether or not to renew licenses. Designed and implemented web interface for the Colorado Information Management Association annual conference.

**COLORADO DEPARTMENT OF EDUCATION  
WEB DEVELOPER**

**NOVEMBER 2000 - SEPTEMBER 2004**

As a web developer for the Department of Education I was responsible for the end-to-end process of web development. Because the IT Unit was very small, I was responsible for defining processing requirements, developing, testing and implementing web applications for all 178 school districts in Colorado.

Defined processing requirements for the Student October Automated Data Exchange pilot project by working with school district and CDE personnel.

Assisted in the design and development of the Records Integration Tracking System that replaces the social security number as an identifier with a uniquely identifiable number.

Responsible for developing system specifications, coding, resolving programming problems, testing, and documenting applications systems.

Maintained and enhanced the School District Financing and Auditing system that allocates annual monies to all 178 school districts in Colorado.

**COMMITTEES**

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SECRETARY FOR THE COLORADO INFORMATION MANAGERS ASSOCIATION 2008 - PRESENT	OCTOBER
PLANNING COMMITTEE FOR COLORADO INFORMATION MANAGERS ASSOCIATION 2006 – OCTOBER 2008	OCTOBER
STATE OF COLORADO’S DATA PROTOCOL COUNCIL FEBRUARY 2009	SEPTEMBER 2008 –

**EDUCATION / PROFESSIONAL DEVELOPMENT**

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PMP CERTIFICATE (PROJECT MANAGEMENT PROFESSIONAL), PMI - 2007  
BS - INFORMATION SYSTEMS, UNIVERSITY OF PHOENIX - 2000

## Keith Glenn – Data Warehouse Manager

IT DIRECTOR / IT MANAGER / SYSTEMS ARCHITECT

Business Solutions Development / Project Management / Strategic Planning /  
Applications Management / CRM / Operations Management

**Technical Leader:** I have been fortunate to enjoy a classic IT and management career that has included key positions with ING and McDonnell Douglas Aircraft Company. Career track: Technical growth through such positions as Developer, Project Leader, Database Administrator, Data Administrator, Technical Consultant, and Director Technology & Architecture. **1986 McDonnell Douglas Most Valuable People award**

**Technical Experience:** Over the years I have been utilizing the technical expertise gained within these major corporations to build and design cost effective systems allowing the businesses to accurately track inventory, improve document processing, track all clients and their relationships, and keep history of communications with agents.

**Data Architecture Experience:** Experienced in development of Enterprise data models/data dictionaries to improve system design through data re-use and improved database design. Mapping of data models to physical databases and files to reduce cost of system maintenance and faster turnaround of system enhancements.

**Proven Record:** I have managed complex technical projects which have completed on time and within budget. I am skilled in the areas of employee management, including developing cohesive teams capable of high quality work, directing / coaching staff on career growth; working with employees on conflict resolution.

**B.S.** Southwest Missouri State University

### Selected ACHIEVEMENTS & SKILLS

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- ✓ **Key Skills:** Creating and maintaining strong business relationships. Analyzing complex business challenges and developing solutions to improve business efficiencies, enhance customer satisfaction, and increase sales. Managing complex technical systems. Analyzing and recommending strategic system direction. Directing tactical solutions to improve efficiencies and reduce costs.
- ✓ **Researched/evaluated/implemented/managed workflow & imaging system:** Led the technical team in researching various workflow & imaging systems to process all mail received by ING/Security Life. Including evaluating hardware requirements, network capacity, and operational requirements. Implemented recommended solution and managed day-to-day operations, support staff, and budget.
- ✓ **Appointed the ING representative to IBM's IAA (Insurance Application Architecture) enterprise data analysis project:** This required working with other Insurance company data architects in the development of the IAA data model and data dictionary. The data model and data dictionary was created as a means of standardizing data and integration between insurance/financial services company systems.
- ✓ **Assumed responsibility for diverse teams of SalesLogix support staff:** Took three segregated teams of SalesLogix CRM developers & support staff and created a cross-trained, highly functional single team. Provided a better support environment and made visible opportunities for the business to use sales techniques previously unaware of.



Integrated SalesLogix with Blackberries, enabling a faster/easier mechanism to contact sales prospects.

- ✓ **Client Data Warehouse:** Led the ING team in the development of a Client Data Warehouse, based on IBM's IAA data architecture. By integrating the Client Database with mainframe and server based insurance based applications ING/Security Life was provided with the ability to track all relationships ING/Security Life has with clients. This provided ING/Security Life an extremely valuable marketing and information tool.

*Career History*

**Director, Technology & Architecture, ING.** Managed \$5 M budget and 23 employees.

**Technology Architect, ING**

**Data Administrator/DBA, ING / McDonnell Douglas**

## **Governor's Office of Information Technology – Business Stakeholders**

The business stakeholders in the Governor's Office of Information Technology represent the state's interests, standards and methodologies. They will assist in providing technical oversight and guidance on the various projects such as the interoperability and data exchange with other state agencies.

### **Michael W. Locatis - State Chief Information Officer**

Mike Locatis was appointed by Governor Bill Ritter as State CIO in January 2007. Prior to becoming the Chief Information Officer for Colorado, Mike was CIO for the City and County of Denver where he was recognized nationally by the Public Technology Institute for consolidating twenty disparate information technology departments into a single city-wide Technology Services Division. Mike's Technology Service team delivered new enterprise applications including 3-1-1 a comprehensive "one-stop shop" constituent service offering available today in Denver.

Before joining the City and County of Denver, Mike was the Senior Director of Enterprise Technology Strategy for Time Warner Cable. In this capacity, he managed the technology strategy and architecture development - responsible for transforming customer service delivery systems, including the alignment of call center, ERP, web and retail systems.

### **Micheline Casey – Chief Data Officer**

Micheline Casey is Chief Data Officer (CDO) and Director of Identity Management in the Colorado Governor's Office of Information Technology (OIT). As CDO, she is responsible for developing and executing the State's enterprise data strategy, and developing the strategic plan for implementing a data governance and data management framework across the State's Executive Branch agencies. She coordinates OIT legislative and policy actions as necessary for this strategic effort. In this role, Ms. Casey also chairs the Government Data Advisory Board, a legislatively mandated, Governor-appointed Board which was established to advise the State Chief Information Officer on matters related to enterprise data management and service delivery.

Ms. Casey also leads OIT's efforts in developing Identity, Credential and Access Management as a common framework and shared service across the State. She chairs the Governor's Office Working Group on First Responder Credentialing, and leads the State's efforts on implementing a standardized, interoperable credentialing program for first responders. She also is responsible for developing the State's strategy on implementing identity as service for the State.

Prior to joining the Governor's Office, Ms. Casey was Senior Director of Identity Management for ChoicePoint Government Services. In that capacity, Ms. Casey was responsible for the division's strategy and Federal public policy efforts in the Identity Management space. She also worked in the company's Insurance Services division, and was responsible for policy and business development in the state government market. Ms. Casey is a 15 year veteran of the technology industry, working in strategy, marketing, and business development roles.

Ms. Casey earned her M.B.A from the University of Georgia's Terry School of Business and a B.S. in Marketing from the Pennsylvania State University. She has been a featured speaker at such events as Colorado Digital Government Summit, FOSE, FiXS, and the Federal Trade Commission Identity Theft Task Force Conference.

### **Kelley Eich - Chief Technical Officer**

Kelley Eich, Chief Technical Officer, brings over 25 years of state experience in the social and human services information technology field to OIT. Prior to joining OIT, Kelley served as the Chief Technology Officer for the Colorado Department of Human Services (CDHS), managing a complex diverse IT infrastructure supporting the state's 64 county departments of social/human services, the state's public mental health system, Colorado's system of services for people with developmental disabilities, the state's juvenile corrections systems and all state and veterans' nursing homes, through more than 5,300 employees and thousands of community-based service providers. Kelley is highly regarded as a leader and communicator, demonstrating ingenuity and thoughtful strategic planning.

As Chief Technical Officer for the state, Kelley is focused on defining the state's vision and strategy in support of OIT's mission to increase the effectiveness of government through the use of shared information and technology; continually researching new ways of conducting business, providing services, and leveraging technologies to better support our customers and ultimately the citizens of the State of Colorado.

### **Paul Lewin, CIO OIT-Department of Corrections**

In 2003, Paul became the acting Chief Information Officer for the Department of Corrections and in April 2004 promoted to CIO. Paul has been active with the Colorado State CIO Forum, National Consortium of Offender Management Systems (NCOMS) and is president elect of the Correctional Technical Association (CTA). Paul has implemented many new correctional technological systems in Colorado and is considered a leader in designing and implementing state of the art systems for the Colorado Department of Corrections.

### **Leah Lewis - Chief Enterprise Architect**

Leah Lewis has twenty years of experience in Information Technology and Geographic Information Systems. She has worked and consulted for a variety of organizations including: the National Oceanic and Atmospheric Administration and the National Geophysical Data Center in Boulder, Colorado, the United Nation's World Meteorological Organization, and the International Standards Organization in Geneva, Switzerland. Leah spent 15 years in the Colorado Department of Natural Resources building the Division of Water Resource's IT systems and three years as the Chief Information Officer before becoming OIT's Chief Enterprise Architect in July 2009.

### **Ron Ozga, CIO OIT-Department of Human Services**

Ron has over 30 years of experience within the Information Technology field. He has held IT Director level positions within a number of private companies. His experience has included

strategic plan development, project management, software application development and operations management.

Ron joined the Colorado Children, Youth and Families (CYF) Automation Project, Colorado's SACWIS Project, in August 1998. His initial responsibility was as Technical/Project Manager, managing the installation of the CYF infrastructure across the State of Colorado along with providing project management support as backup to the CYF Project Director. In February 2001, Ron was appointed to the CYF Project Director position. After the implementation of Colorado's SACWIS project, Ron was appointed the Applications Director for Children, Youth and Families Services and Child Support Enforcement Services, responsible for the applications that support the Child Welfare, Youth Corrections, Child Care and Child Support Enforcement program areas in Colorado.

In December 2005, Ron was appointed the Deputy Chief Information Officer for the Colorado Department of Human Services, having overall responsibility for all applications within the agency. As of July 2008, Ron was appointed the Departmental Chief Information Officer under the Governor's Office of Information Technology for the Colorado Department of Human Services.

### **Gerald W. Smith, CIO OIT-Department of Labor & Employment**

Manager with 30 plus years of experience in private industry organizations with 100 or more persons in their IT departments. Twelve years with IBM Global Services in both Distribution and Production Industries. Twenty-one years with Pathmark Stores Incorporated. Specializing in the development of IS strategic and operating plans, data center operations, commercial account management, and customer relations' management. Special focus on budgets, cost control, and the delivery of business applications to internal and commercial customer sets.

Participates as a member of the information technology organization's leadership team and directs the customer and technical support personnel that ensure the efficient, secure, and stable day-to-day operations of CDLE's information technology applications and infrastructure. Create, implement and monitor compliance with standards, policies, and procedures related to hardware, software, and support of information technology applications and infrastructure. Establish of criteria for performance monitoring, benchmarking, and continuous process improvement are included within these standards. Works with peers to ensure that new applications and infrastructure are adequately documented and transitioned to support personnel and that disaster recovery and business continuity plans are modified and tested accordingly. This position also has responsibility as the Deputy Chief Information Officer and as such will make decisions and/or guide the organization in the Chief Information Officer's absence.

# **Project Narrative**

## **Project Narrative - Appendix C Current Status of State's Longitudinal Data System**

Attachment 1:

Title: **Project Narrative - Appendix C** Pages: **4** Uploaded File: **SLDS.AppendixC-FINAL.doc**

APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
<b>Data System Capabilities</b>		
The system must enable States to examine student progress and outcomes over time. Must include data at the individual student level from preschool through postsecondary education and into the workforce.	<p><b>In Progress.</b> In August 2008, Colorado released the student-level Colorado Growth Model (v1.0) to school districts. 2009 marked the release of the public-facing version. This model has received national attention as one of the most capable longitudinal data systems in the country for tracking and providing interactive analysis of individual K-12 student progress. Planned enhancements for v2.0 include expanding the application to show how much improvement (catch-up, keep-up) is needed for each student to reach postsecondary readiness, connect teacher and student records, incorporate postsecondary metrics, and to provide enhanced diagnostic information to students, parents, teachers and administrators. The Colorado Department of Higher Education developed a high quality longitudinal data system over the last three decades and can provide guidance on issues surrounding relevant indicators and research with longitudinal data.</p> <p>Funding from CDE's 2007 SLDS grant award was used to support the development of individual student reports and warehouse modifications for this effort. The Colorado Governor's office continues to support this effort by providing \$2.5M in discretionary funds. Funding from this application award will be used to continue the development of this item, with an estimated completion date of June 2011.</p>	1.1, 1.6, 2.1, 2.2
The system must facilitate and enable the exchange of data among agencies and institutions within the State and between States so data may be used to inform policy/practice.	<p><b>Planned.</b> Legislators authorized the state's executive branch departments to share unit-level records (HB 08-1364) and created the state's first Government Data Advisory Board (HB 09-1285) to implement the state's interdepartmental data sharing protocols. Conversations between agencies (CDE, CDHE, Labor, and Human Services) are underway to implement a process to align multiple IDs into a State system ID in order to share data.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2011.</p>	1.1, 2.1, 2.2
The system must link student data with teachers.	<p><b>Planned.</b> Initial requirements to link students and teachers have been identified for such projects as the Colorado Growth Model, IEP management system, and student and teacher performance metrics. Discussions are occurring regarding modifications to various CDE systems required to link data once Educator IDs can be created.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2013.</p>	2.3, 1.4
The system must enable matching of teachers with information about their certification/preparation.	<p><b>Planned.</b> Initial requirements regarding teacher certification and preparation have been identified. These include teacher effectiveness, evaluation of teacher education programs, new teacher remediation metrics, and others. Discussions are occurring regarding modifications to various CDE and CDHE systems required to link data once Educator IDs can be created. CDHE currently captures longitudinal information on students who are enrolled in teacher preparation programs.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2012.</p>	1.8, 1.9, 2.2

APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
The system must enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers, and school leaders on the achievement of their students.	<p><b>In place; being improved.</b> SchoolView™, launched in August 2009, is a web portal used to create, maintain, and publish student, school, school district, and state performance reports and supporting data. Planned enhancements to SchoolView will feature a document management and workflow system, including forms, records and content management, and online training and help. It will automate collection of performance metrics to provide most of the data required for state and federal reports.</p> <p>Limited funds from Colorado’s 2007 SLDS grant were used to develop SchoolView™. Funding from this application award will be used to continue the development of this item, with an estimated completion date of June 2013.</p>	3.2, 3.3, 3.4, 4
The system must ensure the quality and integrity of data contained in the system.	<p><b>In place; being improved.</b> Colorado’s current data system reflects a “collections-based” approach that over time has created redundancies and placed enormous burdens on districts. The need and opportunity is to migrate to a service oriented architecture that enables real-time, streamlined data exchange among information systems. Development of state standards (i.e., course codes) and definitions for data is included in this effort. The State’s framework for data quality includes defining the requirements, inspection policies, measures, and monitors that reflect changes in data quality and performance. In addition to these steps, a data governance framework for data quality will be established.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2012.</p>	5.1, 5.2, 5.3, 5.4
The system must provide the State with the ability to meet reporting requirements.	<p><b>In place; being improved.</b> Colorado is completing and submitting 2007-08 and 2008-09 ED Facts submissions. While CDE is able to submit the collections, only 50% of the required data elements exist in the warehouse; others are stored in various spreadsheets and data stores.</p> <p>Funding from CDE’s 2007 SLDS grant award was used to support the initial development of warehouse modifications in order to capture reporting requirements. Funding from this application award will be used to continue and improve upon this capability, with an estimated completion date of June 2011.</p>	1.3
<b>Required Data System Elements</b>		
A unique statewide student identifier that does not permit a student to be individually identified by users of the system (except as allowed by Federal and State law)	<p><b>In place; being improved.</b> CDE implemented a unique state assigned student identifier (SASID) for all public P-12 school students in 2002. This system provides schools the ability to validate and/or generate student IDs when a student enrolls in a district. The SASID is attached, encrypted and personal information removed for student level data reported to CDE. SB 06-024 required the higher education system to adopt the use of the student identifier for the purpose of sharing student record information across the state’s data systems for College Opportunity Fund purposes. Currently, this data is provided to CDHE through CD-ROMs.</p>	2.1

APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
	Funding from this application award will be used to develop this item with an estimated completion date of June 2011.	
Student-level enrollment, demographic, and program participation information	<p><b>In place; being improved.</b> Enrollment information is collected from local education agencies through specific, single-point-in-time file-based manual collections that drive financial allocations. This data is stored permanently by the state so that it can be used in subsequent years to determine continuous improvement, but requires extensive manual effort to reduce redundancies in reporting and coordinating data between multiple systems.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	1.2, 1.4, 1.5
Student-level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs	<p><b>In place; being improved.</b> The state currently collects student-level graduation data by diploma type and student-level dropout data (including the ability to identify exiting students as graduates, dropouts, transfers or GED recipients.). However, the current system for tracking mobility is antiquated. State legislation (SB 08-212; CAP4K) requires extending data collection through postsecondary and workforce development systems.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	2.1, 2.2
The capacity to communicate with higher education data systems	<p><b>Planned.</b> CDE and CDHE presently share data using a manual (e.g. disk or email) format. Recently enacted legislation supports the development and implementation of P-20 data sharing and reforms. CDE and CDHE staffs are actively engaged in discussions regarding data system needs, function and focus and representatives from both organizations participate on several joint data committees.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	2.2
A State data audit system assessing data quality, validity, and reliability	<p><b>In place; being improved.</b> CDE's Automated Data Exchange (ADE) has an audit mechanism to review the accuracy of data submitted by schools and districts. All current data collection processes employ rigorous validation procedures and data edits. Business rules are documented and data models are in place. The system only allows for an "all or nothing" load; therefore, if a district needs to correct any error, they must reload the entire file.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	5.3
Yearly test records of individual students with respect to assessments under section 1111(b) ESEA	<p><b>In place; being improved.</b> The data system collects yearly test records of individual students and matches individual students' test records from year to year to measure academic growth. The data system must evolve to track the attributes and support implementation of new standards and assessments developed through SB 08-212 (CAP4K) legislation.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	1.1, 1.2



APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
Information on students not tested, by grade and subject	<b>Completed.</b> The state collects and maintains individual records on each untested student in a tested grade with specific explanations why each student was not tested; this function will continue as new assessments are developed and implemented.	
A teacher identifier system with the ability to match teachers to students	<b>Planned.</b> HB 09-1065 created the political mandate for an Educator Identifier System and directed the establishment of the Quality Teachers Commission to oversee its design and implementation. Discussions regarding requirements are in the early stages and an initial deployment is planned during the current (2009-2010) academic year for the creation of an ID. The Governor's office (\$800K) and private funders (Rose Foundation and Williams Fund – \$300K) are supporting this initiative. Funding from this application award will be used to extend the development of this item with an estimated completion date of June 2012.	1.8
Student-level transcript information, including information on courses completed and grades earned	<b>In Progress.</b> CDE has implemented and continues to develop the Colorado Transcript Center web application. Development, testing and production were completed in late November 2008. Current work focuses on building membership and helping district and postsecondary institutions become active members through various marketing and outreach strategies. The key is capturing transcript data at the state level. Funding from CDE's 2007 SLDS grant award is supporting the development of the exchange of transcript data, with an estimated completion date of June 2013.	1.7
Student-level college readiness test scores	<b>Completed.</b> As part of its state assessment/accountability system, Colorado requires all 11th grade students in Colorado public schools to take the ACT test and collects and maintains these data on an individual student basis. The ACT is the standardized, curriculum-based, achievement, college entrance examination selected by CDE.	
Data that provide information regarding student transition from secondary school to postsecondary education	<b>Planned.</b> SB 08-212 (CAP4K) is a landmark reform initiative that creates a truly aligned Colorado preschool to postsecondary educational system. To date, CDE and CDHE have jointly held meetings with stakeholders and have approved a postsecondary and workforce readiness definition for Colorado students. Discussions are currently underway between CDE and CDHE to expand the Colorado Growth Model to display student transition metrics. Funding from this application award will be used to develop this item with an estimated completion date of June 2013.	2.2
Data that provide other information necessary to address alignment and adequate preparation for success in postsecondary education	<b>Planned.</b> SB 08-212 (CAP4K) facilitated extensive statewide conversations regarding the skills and competencies students need to succeed after high school to be prepared to enter college and the workforce and to compete in the global economy. One significant outcome was the revision of Colorado's P-12 education standards to address postsecondary and workforce readiness standards. Next steps include the alignment and design of new assessments for the standards. Funding from this application award will be used to develop this item. Est. completion June 2013.	1.4, 2.2, 2.3, 3.2

# **Project Narrative**

## **Project Narrative - Appendix D Letters of Support**

Attachment 1:

Title: **Project Narrative - Appendix D** Pages: **17** Uploaded File: **SLDS combined Letters of Support.pdf**

MICHAEL F. BENNET  
COLORADO

COMMITTEES:  
AGRICULTURE, NUTRITION, AND FORESTRY

BANKING, HOUSING, AND  
URBAN AFFAIRS

HEALTH, EDUCATION, LABOR,  
AND PENSIONS

SPECIAL COMMITTEE ON AGING

## United States Senate

WASHINGTON, DC 20510-0609

WASHINGTON, DC:  
702 HART SENATE OFFICE BUILDING  
WASHINGTON, DC 20510  
(202) 224-5852

COLORADO:  
2300 15TH STREET  
SUITE 450  
DENVER, CO 80202  
(303) 455-7600

<http://www.bennet.senate.gov>

December 3, 2009

The Honorable Arne Duncan  
Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I write to express my strong support for an application submitted by the Colorado Department of Education (DUNS# 187406538) for funding made available through the U.S. Department of Education's Statewide Longitudinal Data System grant program.

I know how critical good data systems are in meeting the needs of students. Colorado's education system currently lacks the data system it needs to fully implement its policy priorities and meet the needs of all students. I witnessed this first-hand at Denver Public Schools: Too many students slip through the cracks and fail to graduate, and too many students graduate unprepared for postsecondary education and the workforce. A quality Statewide Longitudinal Data System will allow us to put data in the hands of parents and guardians, educators, researchers, policymakers and other stakeholders that will equip them with the necessary tools to make positive change.

I know the U.S. Department of Education has made Statewide Longitudinal Data Systems a priority and set funding aside for competitive grants. Colorado had the foresight to adopt policies and garner the necessary support to hit the ground running with an infusion of funds. The proposal submitted for this SLDS grant, called the SchoolView Project, will build a system that ultimately will enable all stakeholders to have the necessary information and skills to better support all of Colorado's students and educators.

I encourage you to recognize Colorado's strengths and consider us a worthy investment. Thank you for your consideration.

Sincerely,



Michael F. Bennet  
United States Senator

**JOHN T. SALAZAR**  
3RD DISTRICT OF COLORADO

326 CANNON HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
202-225-4761  
202-226-9669 (FAX)



COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON  
ENERGY AND WATER  
  
SUBCOMMITTEE ON  
MILITARY CONSTRUCTION AND  
VETERANS' AFFAIRS

**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515**

December 2, 2009

**Arne Duncan, Secretary of Education**  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan:

As a proud representative of Colorado to the U.S. House of Representatives, I write to express support for Colorado's Statewide Longitudinal Data System grant application.

Colorado has successfully laid the groundwork for an effective longitudinal data system. Policies are in place; innovative practices have been established; and education stakeholders are supportive of the development of this system. With additional funds, the Colorado Department of Education (CDE) will be able to partner with other agencies and provide a robust picture of Colorado's students that will equip policy makers, researchers, educators, parents/guardians, and students with the data necessary to make informed decisions.

As the Congressman from Colorado's Third Congressional District and a sixth generation native of the San Luis Valley in Southern Colorado, I represent some of the most rural school districts in the state. The ideas outlined in CDE's School View Proposal for this SLDS grant would help facilitate important growth in the way those school districts and higher education organizations can serve their students. These funds would help provide an infrastructure that equips all educators with tools to effectively increase student achievement.

Colorado is a worthwhile investment, and I hope you will seriously consider this proposal. Thank you for your time and consideration. Please keep my Alamosa office informed of any developments with this proposal.

Sincerely,

A handwritten signature in black ink that reads "John T. Salazar".

John T Salazar  
United States Congress

134 WEST B STREET  
PUEBLO, CO 81003  
719-543-8200  
719-543-8204 (FAX)

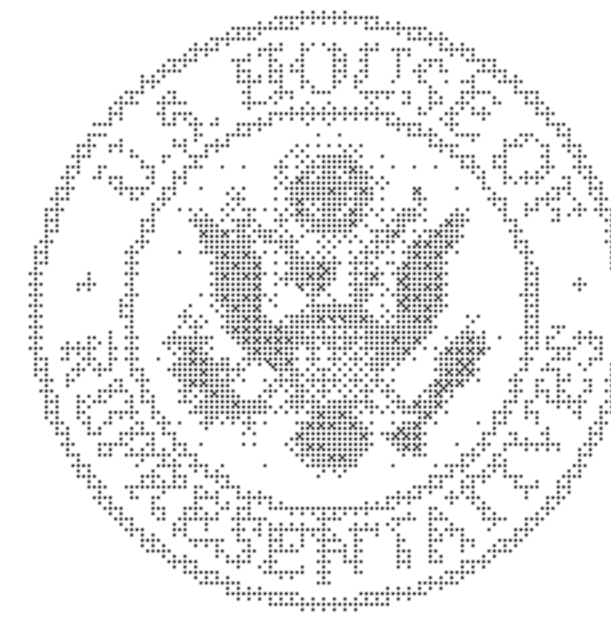
225 NORTH 5TH STREET, STE 702  
GRAND JUNCTION, CO 81501  
970-245-7107  
970-245-2194 (FAX)

609 MAIN STREET, #6  
ALAMOSA, CO 81101  
719-587-5105  
719-587-5137 (FAX)

813 MAIN AVENUE, STE 300  
DURANGO, CO 81301  
970-259-1012  
970-259-9467 (FAX)

COMMITTEE ON AGRICULTURE

SUBCOMMITTEE ON GENERAL FARM COMMODITIES  
AND RISK MANAGEMENT  
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SUBCOMMITTEE ON RAILROADS, PIPELINES  
AND HAZARDOUS MATERIALS  
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT,  
PUBLIC BUILDINGS AND EMERGENCY MANAGEMENT

**BETSY MARKEY**

4TH DISTRICT, COLORADO

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I write you to express my support of the Colorado Department of Education's SLDS grant application. Colorado's legislators, working in partnership with Governor Ritter, have consistently acted to ensure a legislative framework exists to foster data sharing among state agencies in ways that raise student achievement. Further, the Colorado Department of Education has implemented innovative practices, such as SchoolView and the Growth Model, that help make student growth and achievement visible and actionable.

Colorado's proposal builds on the valuable work already underway throughout the state. As an elected official from an area that is home to universities, community colleges and K-12 schools, I am confident that the U.S. Department of Education's investment in Colorado would make a substantively positive impact on my constituents.

I urge you to seriously consider Colorado's proposal and thank you in advance for your consideration.

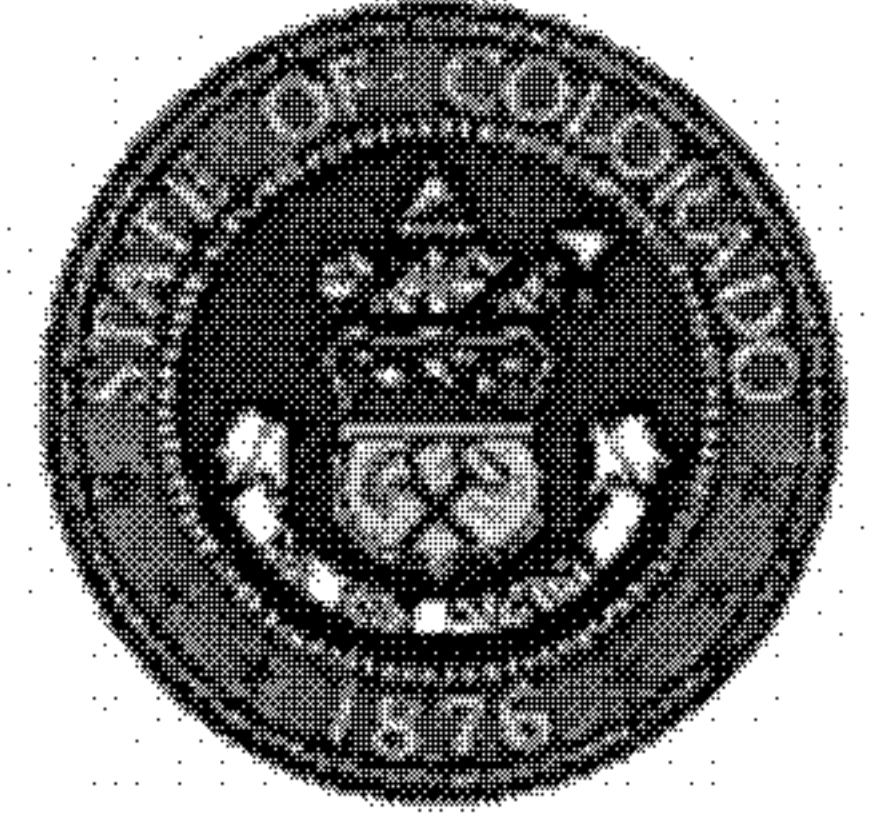
Sincerely,

Betsy Markey  
Member of Congress

# STATE OF COLORADO

## OFFICE OF THE GOVERNOR

136 State Capitol Building  
Denver, Colorado 80203  
(303) 866 - 2471  
(303) 866 - 2003 fax



**Bill Ritter, Jr.**  
Governor

December 3, 2009

Mr. Arne Duncan  
Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

Since taking office three years ago, creating longitudinal data systems has been one of the highest priorities of our administration. Since 2007, we supported and passed legislation creating the Colorado Growth Model, legislatively authorized all state administrative departments to share unit-level data, created an educator identifier system that will match student outcomes to teachers and teacher preparation programs, expanded the use of a common student identification number across all publicly funded education systems, and created the Government Data Advisory Board to govern the exchange of unit-level records across state agencies and research organizations. Without question, improving state longitudinal data systems has been central to our administration.

In addition to supporting reform-oriented data legislation, and in spite of the recent economic downturn, we have continued to make the development of robust, longitudinal data systems a state budgetary priority. Recently, using State Fiscal Stabilization Funds – Government Services Funds, we funded enhancements to the state’s growth model—which has been or is in the process of being adopted by several other states—and launched the development of the state’s educator identifier system. These investments were matched by nearly \$600,000 in private support from Colorado-based philanthropic foundations.

We strongly believe that Colorado is among a handful of states currently poised to make immediate progress toward the vision of an aligned data system articulated in the American Recovery and Reinvestment Act. In other words, the enclosed proposal represents a true “shovel-ready” data system project.

Secretary of Education Arne Duncan

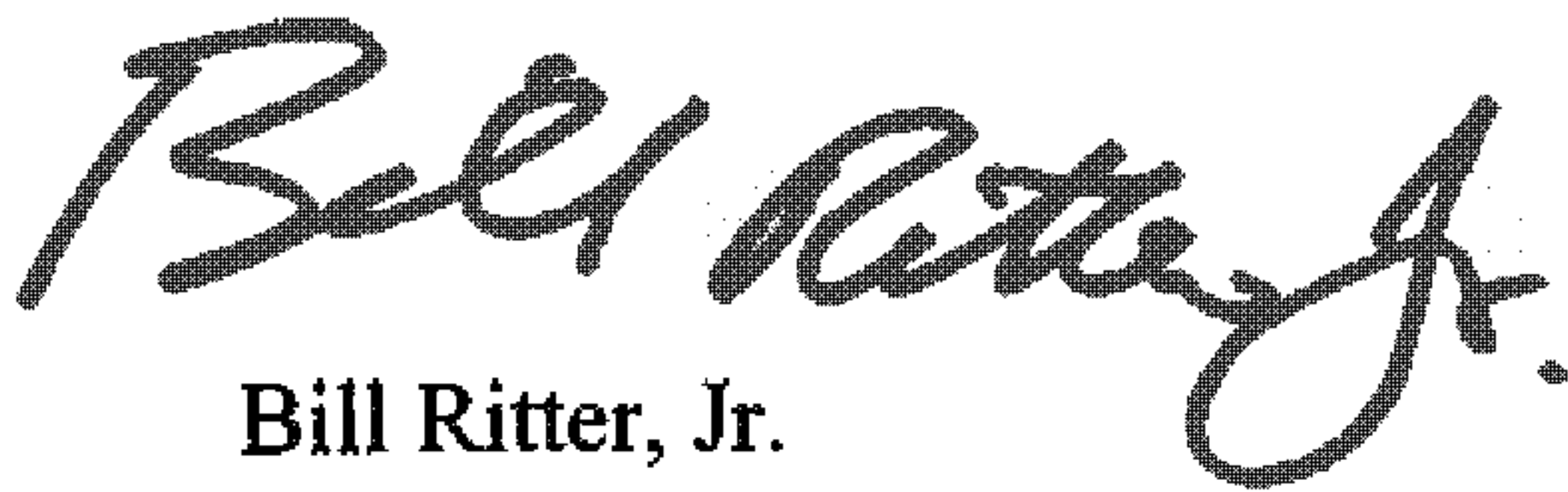
December 3, 2009

Page 2

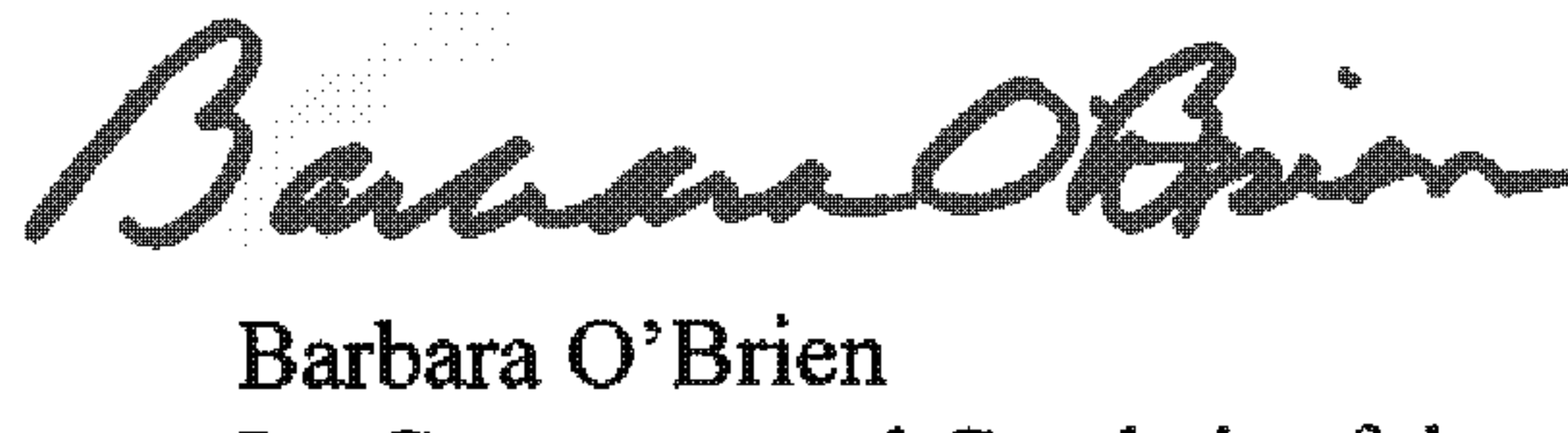
We strongly support the enclosed State Longitudinal Data Systems (SLDS) grant proposal. It represents the culmination of years of effort from our administration and thousands of hours of collaboration among Colorado educators, policymakers, and state departments, including education, higher education, and information technology. If funded, the enclosed proposal would enable the development of a model longitudinal data system.

We hope that you will give the Colorado State Longitudinal Data System proposal your most earnest consideration, and we thank you for the opportunity to participate in the competition.

Sincerely,



Bill Ritter, Jr.  
Governor



Barbara O'Brien  
Lt. Governor and Co-chair of the  
Colorado P-20 Council

State Representative  
DEBBIE BENEFIELD  
8370 Yarrow St.  
Arvada, CO 80005  
Capitol: 303-866-2950  
Home: 303-425-1360  
E-mail: debbie.benefield.house@state.co.us



Chair:  
House Services  
Committee  
Member:  
Education Committee  
Finance Committee

**COLORADO**  
**HOUSE OF REPRESENTATIVES**  
STATE CAPITOL  
DENVER  
80203

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I write to express my support of the Colorado Department of Education's proposal to the U.S. Department of Education for a State Longitudinal Data System ("SLDS") grant.

Having served in our state's House of Representatives since 2004, I have had the honor to support numerous bills providing the framework for Colorado's longitudinal data system. Working together with Governor Ritter, legislators have continuously demonstrated a commitment to building the policy base for an effective data system that helps raise student achievement statewide. I am proud of what we have accomplished together and am confident that support will continue into the future.

The Colorado Department of Education has demonstrated the will to be innovative, stretching the realm of what was previously possible. Serving as examples of that innovation, Colorado's SchoolView project and Colorado Growth Model provide invaluable tools for stakeholders and are seen as a model to other states. These programs, coupled with our policy base, make Colorado a great investment.

I strongly support Colorado's proposal for the SLDS grant and believe it will advance our efforts in raising student achievement and closing the achievement gap. Thank you for your consideration.

Sincerely,

Representative Debbie Benefield  
Colorado House of Representatives



# STATE OF COLORADO



DEPARTMENT OF HIGHER EDUCATION

Bill Ritter, Jr.  
Governor

D. Rico Munn  
Executive Director

November 30, 2009

To whom it may concern:

I am writing today to express the utmost support for the Colorado Department of Education's (CDE) State Longitudinal Data System (SLDS) grant application. Here in the Colorado Department of Higher Education we have a long history of longitudinal data development and analysis and we approve of and are in sync with the extensive CDE plan to develop their own longitudinal system and to unite it with ours. We are poised to make this happen given the current Colorado legislative environment, national policy guidance, and a spirit of collaboration between agencies. Our work in developing this grant application with colleagues at CDE leads us to conclude that with the help of this grant, our state can rapidly move to the leading edge of tracking students through the education pipeline and begin using the data to refine educational outcomes across the P-20 landscape. Our overarching goal in public higher education is "to and through" --to increase the number of students entering postsecondary education and then completing a degree. We believe this system will facilitate our goal by 1) providing data from pre-school through graduate school and 2) allowing for the use of data to inform policy to eliminate barriers to student success and aspiration throughout the pipeline.

As you will discover in the grant application, Colorado's efforts to establish shared data for analysis and improvement contains a unique caveat in that this was recently legislated to happen. State Legislation created a centralized governance authority, the Government Data Advisory Board (GDAB), to formalize policy on the State's data sharing needs. A subcommittee of this board, the Education Data Subcommittee, has been created and stands ready to provide the guidance and governance of all the underlying issues of policy surrounding the development of a cross agency longitudinal data system like the one Colorado proposes to build. The Colorado Department of Higher Education is represented on both these boards and is assisting, and indeed witnessing, the development of a culture of trust, data stewardship, and data sharing.

The ingredients are all in place to accomplish the goals set forth in your RFP, save one: Finance. The lack of a resource base to advance rapidly on these issues is a real barrier in today's fiscal landscape. This is why the SLDS investment is so vital to our progress. We expect to create an educational system with a holistic approach to education from pre-K through the labor force that continually diagnoses and then responds to barriers to student success and improves the development of the State's human capital. In this grant application, we have identified a crucial step toward that expectation and we ask that every consideration be made on behalf of Colorado's citizens.

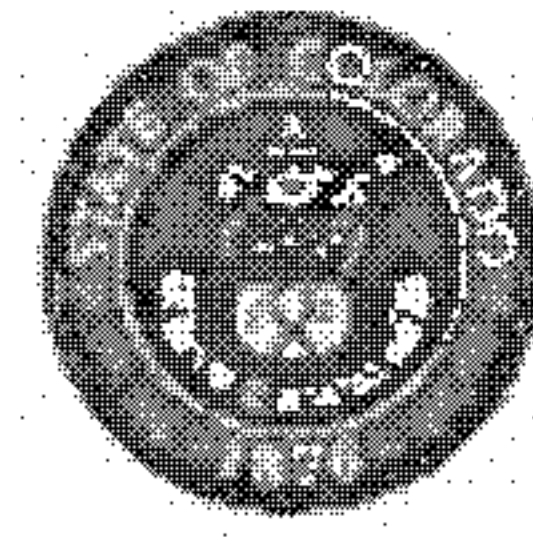
Sincerely,

Rico Munn  
Executive Director  
Colorado Department of Higher Education

# STATE OF COLORADO

## GOVERNOR'S OFFICE OF INFORMATION TECHNOLOGY

601 East 18th Avenue, Suite 250  
Denver, Colorado 80203  
Phone (303) 764-7700  
Fax (303) 764-7725  
www.colorado.gov/oit



Bill Ritter, Jr.  
Governor

Michael Locatis  
State Chief Information Officer

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

This letter is sent on behalf and support of Colorado Department of Education's SLDS grant application. Since taking office in 2007, Governor Bill Ritter and the Colorado Legislature have enacted several pieces of legislation to encourage and allow data sharing between state agencies, with a particularly strong emphasis on education and workforce-related data ties. The Governor's Office of Information Technology (OIT) sits squarely in the middle of all State information technology programs, and has been designated via legislation to oversee and govern all policies, processes, standards and architecture related to enterprise technology and information sharing initiatives.

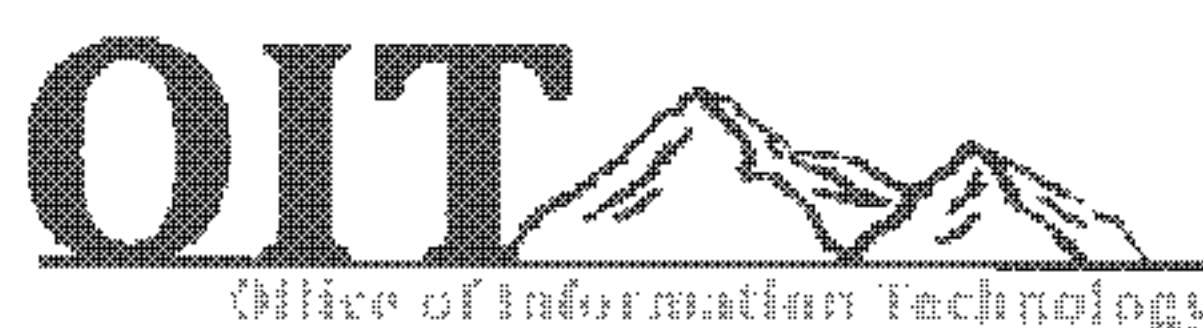
OIT provides a framework to manage the connections among state agency systems, providing enterprise architecture, governance, and data management standards that will facilitate cross-agency collaboration. OIT will be integrally involved in all aspects of the planning, development and implementation of the SLDS. Pursuant to state law, OIT implements the Enterprise Governance Committee (EGC) structure to provide senior governance for large-scale, multi-agency initiatives such as Project SchoolView™. This model has been effective in providing management expertise across the state by identifying risks, ensuring collaboration across agencies, and helping resolve critical issues. OIT is delighted to be the technology partner of the Colorado Department of Education for this exciting and critical initiative.

The Governor, Legislature, and Department of Education have established a clear vision and direction for enabling data sharing to impact student performance. What is lacking is the associated funding required to implement this vision with strong, well-architected technology infrastructure. Colorado is a state where your investment can help build this solid infrastructure that is consistent with our direction and supported by all stakeholders. I strongly support the proposal and thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink that reads 'Michael W. Locatis'.

Michael W. Locatis  
Executive Director  
State Chief Information Officer  
Governor's Office of Information Technology



Office of Information Technology

*Increasing the effectiveness of government through information technology*

e7

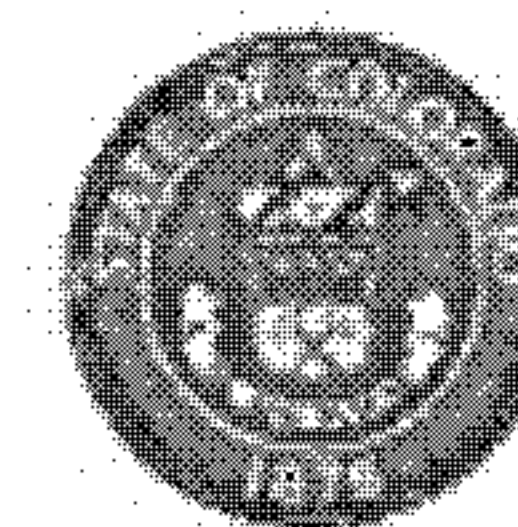
PR/Award # R384A100029

# STATE OF COLORADO

**GOVERNOR'S OFFICE OF INFORMATION TECHNOLOGY**

**GOVERNMENT DATA ADVISORY BOARD**

601 East 18th Avenue, Suite 250  
Denver, Colorado 80203  
Phone (303) 764-7700  
Fax (303) 764-7725  
[www.colorado.gov/oit](http://www.colorado.gov/oit)



Bill Ritter, Jr.  
Governor

Michael Locatis  
State Chief Information Officer

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

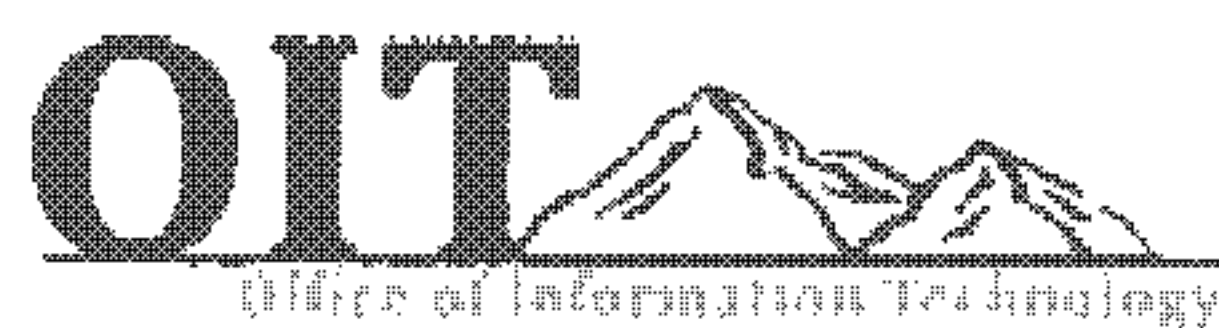
Dear Secretary Duncan,

This letter is sent on behalf and support of Colorado Department of Education's SLDS grant application. Since taking office in 2007, Governor Bill Ritter and the Colorado Legislature have enacted several pieces of legislation to encourage and allow data sharing between state agencies. They recognized the needs that educators, schools, districts, parents, and the State have to analyze longitudinal data regarding factors including improving teaching and learning, informing public policy, fostering a culture of evidence-based decision making, conducting research, evaluating system and program effectiveness, and providing reports to various stakeholder groups.

Among many separate P-20 initiatives, two bills (HB 08-1364 and HB 09-1285) in particular have directed these data sharing initiatives. HB 09-1285 created a multi-agency central governance authority, the Government Data Advisory Board (GDAB), to advise the State Chief Information Officer and Chief Data Officer on the State's data strategy, policies, standards, architecture, and issues management. The Board is comprised of representatives of twelve State agencies, local governments, non-governmental organizations and research institutes, and a wide variety of education stakeholders.

The Board's mission over the next ten years is to provide guidance and recommendations on how the State should govern and manage data and data management systems to improve the efficiency and effectiveness of State government, citizen service delivery and policy-making. The goals of the Board are consistent with and supportive of the SDLS challenge to move from a collection-driven system to an enterprise-based, data sharing system. The commitment is to build a state-of-the-art data system using industry exemplars within and outside of education that is both student-centric and equips users with the necessary information and tools to positively impact student learning. The GDAB will work with the Colorado Department of Education to develop the governance framework required to ensure the long-term success of this initiative.

The SLDS grant arrives at an ideal time to fulfill immediate needs while capitalizing on current strengths. Colorado is poised to translate the investment of SLDS funds into a next generation data system. The converse is also true: without immediate financial investments that advance the capacity of the state's education data system infrastructure, the state's reform agenda cannot be fully realized.



Office of Information Technology

*Increasing the effectiveness of government through information technology*

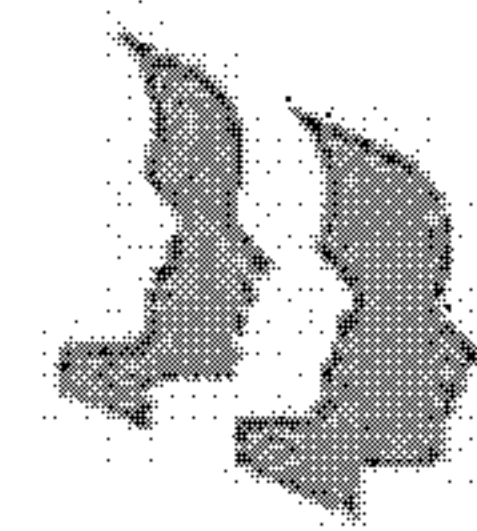
Thank you for the opportunity to support Colorado's SDLS grant application.

Sincerely,

A handwritten signature in black ink, appearing to read "Micheline Casey", with a long horizontal flourish extending to the right.

Micheline Casey  
Chair, Government Data Advisory Board  
Chief Data Officer  
Governor's Office of Information Technology

Dedicated to Excellence



Cherry Creek  
Schools

**Dr. Elliott Asp**

Assistant Superintendent  
Educational Services Center  
4700 South Yosemite Street  
Greenwood Village, Colorado 80111

November 29, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I have the honor of serving as the Chair of the Data Sub-committee for Colorado's P-20 Council and the Assistant Superintendent for Performance Improvement for Cherry Creek Schools. I write to you in support of the Colorado Department of Education's (CDE) proposal for a State Longitudinal Data System grant.

As a P-20 Council, we set out a broad agenda for improving our policy framework behind the state's data systems, moving toward creating an infrastructure that would allow information sharing across agencies and with all stakeholders. Colorado's legislature and Governor successfully worked together to put this policy foundation in place. CDE has built on that framework and instituted powerful practices that help shape how we are able to serve our students. However, our work is not yet done. We still need to create a truly integrated state data system that will allow us to track the progress of students from pre-school to post-secondary education and the work force.

I have been involved in the process of Colorado's development of this SLDS proposal, and I am confident that the ideas articulated will have a powerful impact on student learning. CDE's proposal, the SchoolView Project, builds on existing state successes and creates a system that will meet the needs of students, educators, parents/guardians, researchers and policy-makers. Further, it will help facilitate a powerful change in the way the state agency and districts can work together, producing important cultural and structural shifts in the partnership.

We have worked hard in the Cherry Creek Schools to provide data that teachers and building administrators can use to improve instruction and increase achievement. This longitudinal data system proposed in the grant will greatly enhance our efforts and those of our colleagues across the state.

Colorado is a valuable investment: the policies are in place, the will to implement is clear, and the opportunity to positively impact student achievement is immense. I thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Elliott Asp".

Elliott Asp  
Assistant Superintendent for Performance Improvement  
Cherry Creek Schools

**University of Colorado Denver**  
**School of Education & Human Development**

**Office of the Dean**

Lynn K. Rhodes, Dean  
1380 Lawrence Street, 1149  
P.O. Box 173364  
Campus Box 106  
Denver, CO 80217-3364  
Office: 303-315-6343  
Office Fax: 303-315-6349

November 30, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

As an educator committed to improving the effectiveness of Colorado's teaching force, I would like to express my strong support for the application submitted by the Colorado Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

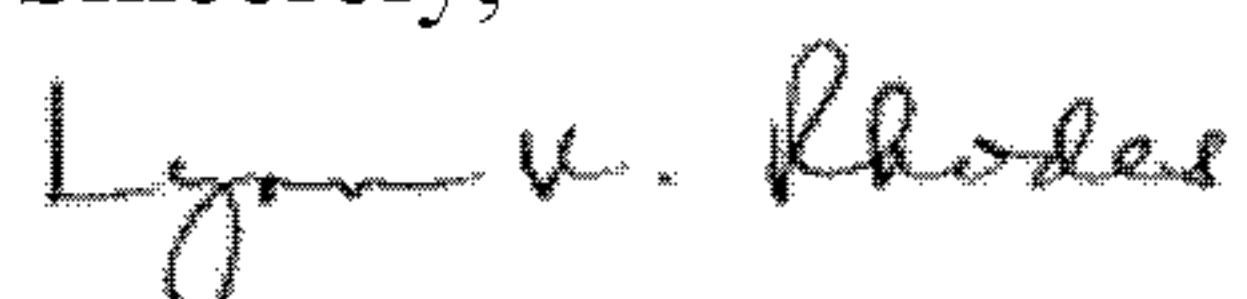
I have provided input in the development of the proposal, and have read drafts and suggested changes that were designed to ensure that educator providers could access and effectively utilize data to improve the preparation of teachers and other educators. I am confident that the plans expressed in Colorado's proposal will help increase student achievement statewide and will help Schools of Education as well as alternative providers better understand their roles in doing so.

The proposal by the Colorado Department of Education, the SchoolView™ Project, focuses on data system infrastructure development. Taking the Colorado Department of Education's progress in this area to the next level, this application outlines the development of a knowledge management system that will allow stakeholders, including Schools of Education, to create and apply knowledge in educational decision making.

The strategic objectives of this proposal will equip users to manage and use information for informed decision-making ensuring that all students in Colorado are ready for post-secondary workforce success. I am particularly interested in using the data to understand how more than a dozen programs in the School of Education and Human Development at the University of Colorado Denver serve the schools and districts in the Denver area: the persistence of our graduates in the profession and in high-need schools in particular, the impact of our graduates' work in schools on K-12 student learning, our graduates' performance in their positions, and our graduates' leadership roles in schools and districts, especially where that leadership positively influences educational equity. In addition to leading this work in my own School at UC Denver, I am leading the work of the Colorado Council of Deans of Education to share and discuss data with a focus on improving educator preparation and ultimately, K-12 student achievement.

With continued efforts in the area of providing comprehensive and meaningful data, Colorado educators, and the organizations that train them, will have additional tools in their efforts to help all children reach their educational potential. Thank you for your consideration.

Sincerely,



Lynn K. Rhodes, Dean and Professor



Colorado Association of School Boards  
1200 Grant Street  
Denver, Colorado 80203-2306  
Phone: (303) 832-1000 • (800) 530-8430  
Fax: (303) 832-1086

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan:

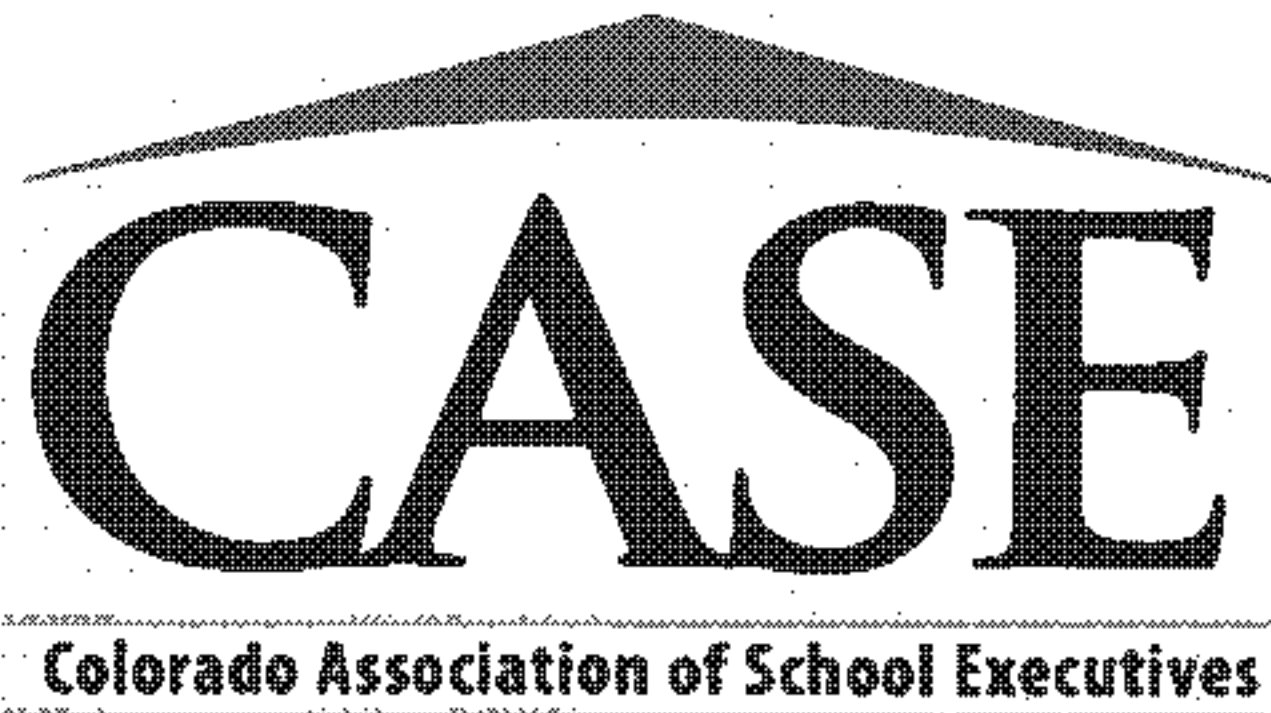
As Executive Director of the Colorado Association of School Boards, I am writing to express my support for the application being submitted by the Colorado Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

It is a strategic objective of the Colorado Department of Education as well as the Colorado Association of School Boards to provide the best possible educational advantage for all students. In that endeavor, a continuing commitment to academic rigor, relevance and accountability along with a level of cooperation and collaboration between and among our education system and other segments is critical. This proposal will equip users to manage and use information for informed decision-making ensuring all students in Colorado are ready for post-secondary education and workforce success.

The Colorado Association of School Boards supports the commitment of the Colorado Department of Education to provide comprehensive and meaningful data to Colorado educators in their efforts to help all children reach their educational potential. I hope you will consider Colorado's proposal and see what a valuable investment you could make in our state.

Sincerely,

  
Ken DeLay  
Executive Director



November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

As a professional association dedicated to promoting public education and supporting its leaders, the Colorado Association of School Executives (CASE) would like to add our strong support for the application by the Colorado Department of Education for a Statewide Longitudinal Data System (SLDS) grant. CASE has long been a leading voice for the move to longitudinal growth as a sensible way to measure student progress—instead of focusing only on a static growth measure, which sometimes punishes low income students unfairly.

CASE helped draft and pass a measure in the Colorado legislature several years ago to put longitudinal growth measurements in place and we have been extremely pleased by the progress made by the Colorado Department of Education. But this progress in designing a longitudinal growth system needs additional financial support to create the platform for better collection, dissemination and display of this critical educational information.

The proposal by the Colorado Department of Education, the SchoolView™ Project, focuses on data system infrastructure development. Improved systems are critically important in providing the ability to understand student strengths and target areas for improvement. The strategic objectives of this proposal will equip users to manage and use information for informed decision-making to help ensure all students in Colorado are ready for post-secondary education and workforce success. This strategic outcome for all school districts in Colorado has become a top priority for school administrators.

With continued efforts in the area of providing comprehensive and meaningful data, Colorado educators will have another tool in their efforts to help all children reach their educational potential. Thank you for your consideration.

Sincerely,

John Hefty  
Executive Director  
Colorado Association of School Executives

**CASE Departments**

CAES Colorado Association of Educational Specialists \* CAESP Colorado Association of Elementary School Principals \* CALET Colorado Association of Leaders in Educational Technology  
CASPA Colorado Association of School Personnel Administrators \* CASSA Colorado Association of Superintendents and Senior Administrators  
CASSP Colorado Association of Secondary School Principals \* DBO Department of Business Officials



November 30, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

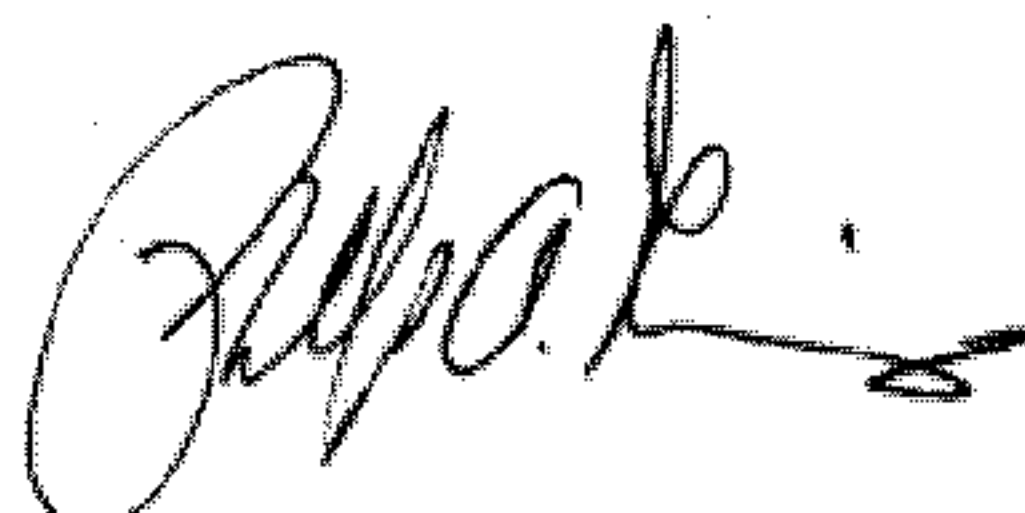
I write to express support for Colorado's application to the U.S. Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

Rose Community Foundation has invested \$150,000 in Governor Ritter's P-20 Council and more than \$300,000 in the development of Colorado's unique educator identifier system, including much of the political work that led up to the creation of what ultimately became successful legislation. I am confident the foundation community will continue to be active in Colorado's efforts to raise student achievement statewide. While the foundation community in Colorado is robust and consistently supports important education initiatives, additional funds are necessary to implement the system described in the Colorado Department of Education's SLDS proposal.

The proposal by the Colorado Department of Education, the SchoolView™ Project, clearly outlines the priorities and plans established by the P-20 Council, legislators, Governor Ritter and the Colorado Department of Education. The strategic objectives of this proposal will equip users to manage and use information for informed decision-making ensuring that all students in Colorado are prepared for post-secondary education and the workforce.

Coupled with Colorado's existing conditions, a grant from the U.S. Department of Education would pave the way for an effective data system that will help build knowledge and capacity among all of education's stakeholders. I am confident that Colorado is a valuable investment and thank you in advance for your consideration.

Sincerely,



Phil Gonring  
Senior Program Officer



December 2, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

Please allow me to express my support for Colorado's application submitted to the U.S. Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

The Daniels Fund, where I serve as Senior Vice President of the Grants Program, has provided financial support for Governor Ritter's P-20 Council, the development of a teacher identifier, and many other critical K-12 education initiatives aimed raising the level of academic achievement of all Colorado students.

The data system outlined in this proposal will equip users to manage and use information for informed decision-making, ensuring that all students in Colorado are prepared for post-secondary education and the workforce. The foundation community in Colorado is consistently committed to initiatives to improve education; however, additional funds will be necessary to implement the system described in the Colorado Department of Education's SLDS proposal.

A grant from the U.S. Department of Education would pave the way for an effective data system that will help build knowledge and capacity among all of education's stakeholders. I am confident that Colorado is a valuable investment and thank you in advance for your consideration.

Sincerely,

A handwritten signature in cursive script that reads 'Barbara Danbom'.

Barbara Danbom  
Senior Vice President, Grants Program  
Daniels Fund



# COLORADO DEPARTMENT OF EDUCATION

201 East Colfax Avenue • Denver, Colorado 80203-1799  
303.866.6600 • www.cde.state.co.us

**Dwight D. Jones**  
Commissioner of Education

**Robert K. Hammond**  
Deputy Commissioner

**Kenneth R. Turner**  
Deputy Commissioner

December 1, 2009

The Honorable Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Mr. Secretary:

I would like to express my support of the Colorado Department of Education's (CDE) State Longitudinal Data System (SLDS) grant application. Establishing a flexible P-20 data system in Colorado is a critical component of our comprehensive reform strategy focused on readying all students for postsecondary and workforce success. This system will play an essential role in (1) enabling the instructional connection to standards and assessments, (2) ensuring that there is a clear and common understanding of which schools comprise our lowest 5 percent and which serve as exemplars for replication, and (3) facilitating a highly effective human capital management strategy that supports great teachers and leaders.

The effective implementation of a P-20 longitudinal data system will provide crucial decision support for the leadership of educational improvement. Our vision is that this decision support will be routinely accessed and enhanced by users that strengthen their capacity to effectively manage those aspects of personal, school, district or state performance over which they have the greatest collective leverage. This requires access to high-quality and timely information and digital content, unprecedented transparency of information about student, classroom, school, district and state performance for all stakeholders, and maximized use of social collaboration tools and open-source application programming interfaces.

Our overarching goal is to continuously build the performance and knowledge-management capacity of students, parents, educators, administrators, policymakers, researchers and the public at large so that conditions support innovation and are ripe for self-sustaining continuous improvement. This environment will allow educators to learn and improve their practice, encourage students to learn and to understand their progress, and cause the public to develop informed perspectives about school performance and to become knowledgeable choosers of schools and educational programs.

I enthusiastically support Colorado's plan for the development of our information and knowledge management system and thank you for your consideration of this application.

Most sincerely,

Dwight D. Jones, Commissioner

cc: Robert K. Hammond, Deputy Commissioner

# Budget Narrative

## Budget Narrative - Budget Justification

Attachment 1:

Title: **Budget Narrative** Pages: **4** Uploaded File: **SLDS.BudgetNarrative-FINAL.doc**

**BUDGET NARRATIVE**

The Colorado Department of Education (CDE) is requesting a total of \$17,886,993 over three years for Project SchoolView™. Project SchoolView™ encompasses three key initiatives that are outlined below along with associated costs. The Foundational outcomes include activities that cross initiatives and that will take place throughout the project including training, change management, and enterprise data management strategies.

<b>Outcome</b>	<b>Goal</b>	<b>SLDS Grant</b>
Capture	P-20 Student-focused data is effectively and efficiently collected across multiple sources	\$7,412,400
Link	Data is effectively shared and exchanged across multiple state, agencies and school districts.	\$8,036,900
Provide	Stakeholder users are provided with understandable, timely and reliable information	\$1,140,400
Foundational	Enterprise Data Management Strategy	\$180,000
Foundational	Leading and Managing Change	\$955,750
	Indirect Costs	\$161,543
<b>TOTAL SLDS Grant Funding Request</b>		<b>\$17,886,993</b>

Detailed costs are directly tied to the project plan and are included in the section below. Cost assumptions are included in ED 524-Section C. Project responsibilities and anticipated FTE counts are included in the overall Project Narrative on pages 25-31.

<b>Project SchoolView™ - Capture</b>		
<b>Outcome</b>	<b>Year 1</b>	<b>SLDS Grant</b>
1.1, 1.2, 1.3	Define and publish statewide data collection standard	\$50,000
1.5, 1.6	Define and publish Unique ID Strategy (Student, Educator, Program)	\$500,000
1.8, 1.9	Develop and implement new standardized operational data store (Educator and Program Data)	\$1,900,000
1.7	Project Management	\$194,133
1.4	Contractor Workspace	\$16,000
	Training	\$190,667
	Travel	\$3,333
	<b><i>Year 1 Project Total- Capture</i></b>	<b><i>\$2,854,133</i></b>
	<b>Year 2</b>	
1.5, 1.6	Design system to capture educator data in the new standardized ODS	\$500,000
1.8, 1.9	Develop and implement “pull” data Collection Mechanisms &ETL to post from standardized ODS to EDW	\$1,725,000
1.4	Implement Capture Finance Data	\$312,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$190,667
	Travel	\$3,333

	<b><i>Year 2 Project Total - Capture</i></b>	<b><i>\$2,941,633</i></b>
	Year 3	
1.5, 1.6	Develop and implement and capture program data in new, standardized ODS.	\$650,000
1.5	Rewrite Legacy Program Reports that point against existing ODS.	\$250,000
1.4	Implement Capture Finance Data	\$312,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$190,667
	Travel	\$3,333
	<b><i>Year 3 Project Total - Capture</i></b>	<b><i>\$1,616,633</i></b>
	<b>Project SchoolView™ - Capture Total</b>	<b>\$7,412,400</b>

<b>Project SchoolView™ - Link</b>		
Outcome	Year 1	SLDS
2.1	Finalize and Publish Unique ID Architecture and Cross-Agency Requirements	\$175,000
2.1	Implement Centralized Unique ID Architecture and Application	\$2,400,000
2.2	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$127,917
	Travel	\$3,333
	<b><i>Year 1 Project Total - Link</i></b>	<b><i>\$2,916,383</i></b>
	Year 2	
2.1	Continue implementation efforts of the Centralized Unique ID Architecture and Application	\$2,400,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDE)	\$715,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDLE)	\$417,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$127,917
	Travel	\$3,333
	<b><i>Year 2 Project Total - Link</i></b>	<b><i>\$3,873,883</i></b>
	Year 3	
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDHE)	\$368,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDHS)	\$119,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDLE)	\$417,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$127,917
	Travel	\$3,333
	<b><i>Year 3 Project Total - Link</i></b>	<b><i>\$1,246,633</i></b>
	<b>Project SchoolView™ - Link Total</b>	<b>\$8,036,900</b>

<b>Project SchoolView™ - Provide</b>		
Outcome	Year 1	SLDS
3.1, 3.2, 3.3, 3.4, 3.5	SchoolView™ Portal Enhancements	\$100,000
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Travel	\$3,333
	<b><i>Year 1 Project Total - Provide</i></b>	<b><i>\$313,467</i></b>
	Year 2	
3.1, 3.2, 3.3, 3.4, 3.5	SchoolView™ Portal Enhancements	\$100,000
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Travel	\$3,333
	<b><i>Year 2 Project Total - Provide</i></b>	<b><i>\$313,467</i></b>
	Year 3	
3.1, 3.2, 3.3, 3.4, 3.5	SchoolView™ Portal Enhancements	\$300,000
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Travel	\$3,333
	<b><i>Year 3 Project Total - Provide</i></b>	<b><i>\$513,467</i></b>
	<b>Project SchoolView™ - Provide Total</b>	<b>\$1,140,400</b>

<b>Foundational: Enterprise Data Management Strategy</b>		
Outcome	Year 1	SLDS
5.1	Data governance policies, processes and standards are established to manage the flow of data from capture to use	
5.4	Robust, sophisticated access and authentication technology and processes ensure the privacy and security of data	
	Training	60,000
	<b><i>Year 1 Project Total - Data Management</i></b>	<b><i>\$60,000</i></b>
	Year 2	
5.2	Master Data Management technology is implemented to ensure the quality, reliability and integrity of the data	
	Training	60,000
	<b><i>Year 2 Project Total - Data Management</i></b>	<b><i>\$60,000</i></b>
	Year 3	
5.3	Data stewards provide data quality audits as part of the ongoing monitoring of data quality on a daily basis via a user interface in the Master Data Management application	
	Training	60,000
	<b><i>Year 3 Project Total - Data Management</i></b>	<b><i>\$60,000</i></b>

<b>Foundational: Enterprise Data Management Strategy - Total</b>		<b>\$180,000</b>
<b>Foundational: Leading and Managing Change</b>		
<b>Outcome</b>	<b>Year 1, 2 and 3</b>	<b>SLDS</b>
6.1, 6.2	Dedicated change management leader is in place to ensure change processes are instituted throughout the entire implementation process Program reporting measures readiness and effectiveness of change mechanisms.	\$955,750
<b>Foundational: Leading and Managing Change - Total</b>		<b>\$955,750</b>
<b>Indirect Cost</b>		<b>\$161,543</b>
<b>TOTAL SLDS Grant Funding Request</b>		<b>\$17,886,993</b>

The State of Colorado will commit additional funding to successfully build and sustain Project SchoolView™. These funds will be in addition to the SLDS grant funds and will help provide operational funding for the longer term. These funding sources include:

- A state funding allocation of \$1.1M to develop and support the Educator ID program.
- Colorado's Race to the Top application will request additional funds to further advance the Project SchoolView™ - Provide outcome.
- The state will invest existing personnel and capital to implement and sustain this work.

Refer to the project narrative for a discussion regarding the sustainability of the proposed work.



# Budget Narrative

## Budget Narrative - ED 524 Section C Spreadsheet

Attachment 1:

Title: **Budget Narrative - ED 524 Section C** Pages: **4** Uploaded File: **SLDS.524SectionC-FINAL.doc**

**Project SchoolView™ - Form 524 Section C - Itemized Budget Breakdown**

		YEAR ONE	YEAR TWO	YEAR THREE	TOTAL
<b>1</b>	<b>PERSONNEL</b>				
	<b>SUBTOTAL PERSONNEL</b>	\$0	\$0	\$0	\$0
<b>2</b>	<b>FRINGE</b>				
	<b>SUBTOTAL FRINGE</b>	\$0	\$0	\$0	0
<b>3</b>	<b>TRAVEL</b>				
	Airfare, lodging, per diem and registration for two Project SchoolView™ representatives to attend two national conferences relevant to the proposed work in each project year, including the annual IES conference for SLDS grantees	\$10,000	\$10,000	\$10,000	\$30,000
	<b>SUBTOTAL TRAVEL</b>	\$10,000	\$10,000	\$10,000	\$30,000
<b>4</b>	<b>EQUIPMENT</b>				
	<i>SchoolView™-Capture</i> : Operational data store hardware	\$37,500	\$37,500	\$0	\$75,000.00
	<i>SchoolView™-Capture</i> - software costs	\$50,000	\$50,000	\$0	\$100,000.00
	<i>SchoolView™-Link</i> : Hardware for unique ID implementation calculated at 12% of development costs	\$100,000	\$100,000	\$0	\$200,000.00
	<i>SchoolView™-Link</i> : Software costs	\$150,000	\$150,000	\$0	\$300,000.00
	<b>SUBTOTAL EQUIPMENT</b>	\$337,500	\$337,500	\$0	\$675,000
<b>5</b>	<b>SUPPLIES</b>				
	Contractor workspace and supplies (\$2000 per year per contractor for space, phone, and internet connection in leased space), contractors will provide own laptop and software	\$48,000	\$48,000	\$48,000	\$144,000
	<b>SUBTOTAL SUPPLIES</b>	\$48,000	\$48,000	\$48,000	\$144,000
<b>6</b>	<b>CONTRACTUAL</b>				
	Project Management - 2 FTE x \$140/hr	\$582,400	\$582,400	\$582,400	\$1,747,200

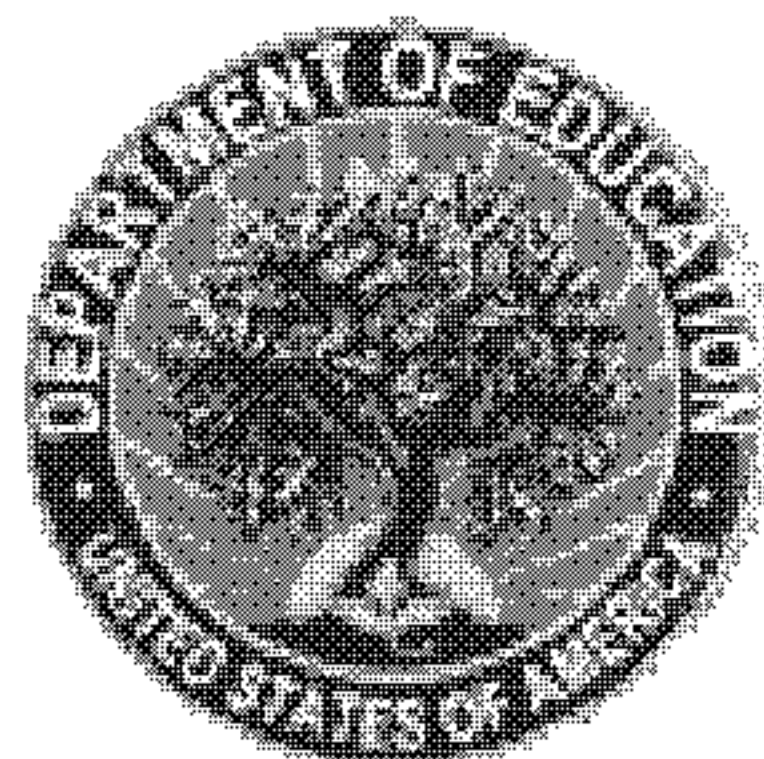
	Data Modeling - continuing current process funded through 6/30/2010 for remaining 3 months to completion	\$50,000	\$0	\$0	\$0	\$50,000
	Change Management/Leadership - 5% of <i>SchoolView</i> <sup>TM</sup> - <i>Capture/Link</i> budget (equivalent to approx 2 FTE)	\$318,583	\$318,583	\$318,583	\$318,585	\$955,751
	Implement standardized Operational Data Store and capture student data: (1) Develop and implement new standardized Operational Data Store (\$1,225,000 total allocated over two years) (2) develop and implement 'pull' data collection mechanisms (\$1,725,000 total allocated over two years) (3) Migrate legacy student reports (\$500,000 total allocated over two years)	\$1,725,000	\$1,725,000	\$1,725,000	\$0	\$3,450,000
	Implement and capture educator data: A current project is underway to capture educator information, which will be completed before the Operational Data Store. This cost item covers posting of educator data to new ODS as referenced above.	\$500,000	\$500,000	\$500,000	\$0	\$1,000,000
	Implement and capture program data: (1) Develop, implement, and capture program data in new, standardized ODS (\$650,000) (2) Rewrite legacy program reports that point against existing ODS (\$250,000)	\$0	\$0	\$0	\$900,000	\$900,000
	Implement and capture finance data: (1) Design, develop, Implement, and capture finance data in new, standardized ODS (\$50,000 total allocated over two years) (2) Design, develop, and implement Colorado State Equal system (\$575,000 total allocated over two years)	\$0	\$312,500	\$312,500	\$312,500	\$625,000
	Publish Unique ID architecture and cross agency requirements - budgeted at 1% of overall <i>SchoolView</i> <sup>TM</sup> - <i>Link</i> budget	\$175,000	\$0	\$0	\$0	\$175,000

	SchoolView™ Portal enhancements: Add cross identifier reporting (student v. educator v. course v. agency)	\$100,000	\$100,000	\$300,000	\$500,000
	Implement Unique ID architecture: (1) Integration - SOA and Service Bus (\$1,100,000 total allocated over two years) (2) Identity, access, authentication management (\$3,200,000 total allocated over two years)	\$2,150,000	\$2,150,000		\$4,300,000
	Implement Unique ID interfaces/CDE - One time data conversion program to assign unique ID based on current file of all SASIDs (\$.50/record x 1,430,000 records (815,000 currently enrolled students + 560,000 seven prior years of graduates @ 80,000 graduates/year + 55,000 administrators/educators/staff.)) SASIDs are the state assigned student ID numbers currently used by CDE for K-12 students.		\$715,000		\$715,000
	Implement Unique ID interfaces/CDHE: (1) Match and data verification for Colorado Department of Higher Education records (\$1.25/record x 255,000 records (200,000 currently enrolled students + 50,000 four prior years of graduates + 5,000 administrators/educators/staff) = \$318,750 (2) .5 FTE for one year to resolve initial near-matches @ \$25 per hour = \$50,000.			\$368,750	\$368,750
	Implement Unique ID interface/CDHS - (1) Match and data verification for Colorado Department of Human Services records (\$1.25/record x 75,000 records = \$94,000) (2) .25 FTE for one year to resolve initial near-matches @ \$25 per hour = \$25,000			\$119,000	\$119,000
	Implement Unique ID interface/CDLE - Match and data verification for Colorado Department of Labor and Employment records (\$1.25/record x 668,000 records = \$835,000 allocated over two years)		\$417,500	\$417,500	\$835,000
	<b>SUBTOTAL CONTRACTUAL</b>	<b>\$5,600,983</b>	<b>\$6,820,983</b>	<b>\$3,318,735</b>	<b>\$15,740,701</b>

<b>8 OTHER</b>						
	Training for existing CDE staff and other users on technologies for sustainability budgeted at \$60,000 per year + 8% of <i>SchoolView</i> <sup>TM</sup> - <i>Capture</i> budget + 5% of <i>SchoolView</i> <sup>TM</sup> - <i>Link</i> budget	\$378,583	\$378,583	\$378,583	\$378,583	\$1,135,749
	<b>SUBTOTAL OTHER</b>	\$378,583	\$378,583	\$378,583	\$378,583	\$1,135,749
<b>9 TOTAL DIRECT COSTS</b>		<b>\$6,375,066</b>	<b>\$7,595,066</b>	<b>\$3,755,318</b>	<b>\$17,725,450</b>	
<b>10 INDIRECT COSTS</b> – Years 1 and 2 calculated at \$536,583 (Travel, Supplies and Other categories + \$100,000 of Equipment costs) x the approved rate of 10.7%. Year 3 calculated at \$436,583 (Travel, Supplies and Other cost categories) x the approved rate of 10.7%.		<b>\$57,414</b>	<b>\$57,414</b>	<b>\$46,715</b>	<b>\$161,543</b>	
<b>11 TRAINING STIPENDS</b>						
	<b>SUBTOTAL TRAINING STIPENDS</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>12 TOTAL COSTS</b>		<b>\$6,432,480</b>	<b>\$7,652,480</b>	<b>\$3,802,033</b>	<b>\$17,886,993</b>	

# **U.S. Department of Education**

**Washington, D.C. 20202-5335**



## **APPLICATION FOR GRANTS UNDER THE**

**STATEWIDE LONGITUDINAL DATA SYSTEM RECOVERY ACT GRANTS  
CFDA # 84.384A  
PR/Award # R384A100029**

Closing Date: NOV 19, 2009

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**Application for Federal Assistance SF-424**

Version 02

* 1. Type of Submission	* 2. Type of Application:* If Revision, select appropriate letter(s):	
<input type="checkbox"/> Preapplication	<input checked="" type="checkbox"/> New	
<input checked="" type="checkbox"/> Application	<input type="checkbox"/> Continuation	* Other (Specify)
<input type="checkbox"/> Changed/Corrected Application	<input type="checkbox"/> Revision	

* 3. Date Received:	4. Applicant Identifier:
12/3/2009	Colorado Department of Education - NCES ID #008

5a. Federal Entity Identifier:	* 5b. Federal Award Identifier:
	NA

**State Use Only:**

6. Date Received by State:	7. State Application Identifier:

**8. APPLICANT INFORMATION:**

\* a. Legal Name: Colorado Department of Education

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
840644739	187406538

**d. Address:**

* Street1:	201 E. Colfax Ave.
Street2:	
* City:	Denver
County:	Denver
State:	CO
Province:	
* Country:	USA
* Zip / Postal Code:	80203

**e. Organizational Unit:**

Department Name:	Division Name:
Administration and Operations	Information Management Services

**f. Name and contact information of person to be contacted on matters involving this application:**

Prefix:	Mr.	* First Name:	Daniel
Middle Name:	E		



\* Last Name: Domagala

Suffix:

Title: Chief Information Officer

Organizational Affiliation:

\* Telephone Number: (303)866-6961 Fax Number: (303)866-6888

\* Email: DOMAGALA\_D@CDE.STATE.CO.US

**Application for Federal Assistance SF-424**

Version 02

**9. Type of Applicant 1: Select Applicant Type:**

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**10. Name of Federal Agency:**

U.S. Department of Education

**11. Catalog of Federal Domestic Assistance Number:**

84.384A

CFDA Title:

Statewide Longitudinal Data System Recovery Act Grants

**\* 12. Funding Opportunity Number:**

ED-GRANTS-072909-001

Title:

Institute of Education Sciences;(IES) Grant Program for Statewide Longitudinal Data Systems Recovery Act Program (ARRA) CFDA 84.384A

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

**\* 15. Descriptive Title of Applicant's Project:**

Project SchoolView envisions a flexible enterprise P-20 information and knowledge management system that will equip users to manage and use information for informed decision-making

Attach supporting documents as specified in agency instructions.

**Attachment:**

Title :

File :

**Attachment:**

Title :

File :

**Attachment:**

Title :

File :

**Application for Federal Assistance SF-424**

Version 02

**16. Congressional Districts Of:**

\* a. Applicant: State of Colorado

\* b. Program/Project: State of Colorado

Attach an additional list of Program/Project Congressional Districts if needed.

**Attachment:**

Title :

File :

**17. Proposed Project:**

\* a. Start Date: 7/1/2010

\* b. End Date: 6/30/2013

**18. Estimated Funding (\$):**

a. Federal	\$ 17886993
b. Applicant	\$ 0
c. State	\$ 0
d. Local	\$
e. Other	\$ 0
f. Program Income	\$ 0
g. TOTAL	\$ 17886993

**\* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

a. This application was made available to the State under the Executive Order 12372 Process for review on .

b. Program is subject to E.O. 12372 but has not been selected by the State for review.

c. Program is not covered by E.O. 12372.

**\* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

Yes  No

**21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

\*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**

Prefix: Mr. \* First Name: Robert

Middle Name:

\* Last Name: Hammond

Suffix:

Title: Deputy Commissioner, Colorado Department of Education

\* Telephone Number: (303)866-6822 Fax Number: (303)866-6888

\* Email: HAMMOND\_R@CDE.STATE.CO.US

\* Signature of Authorized Representative:

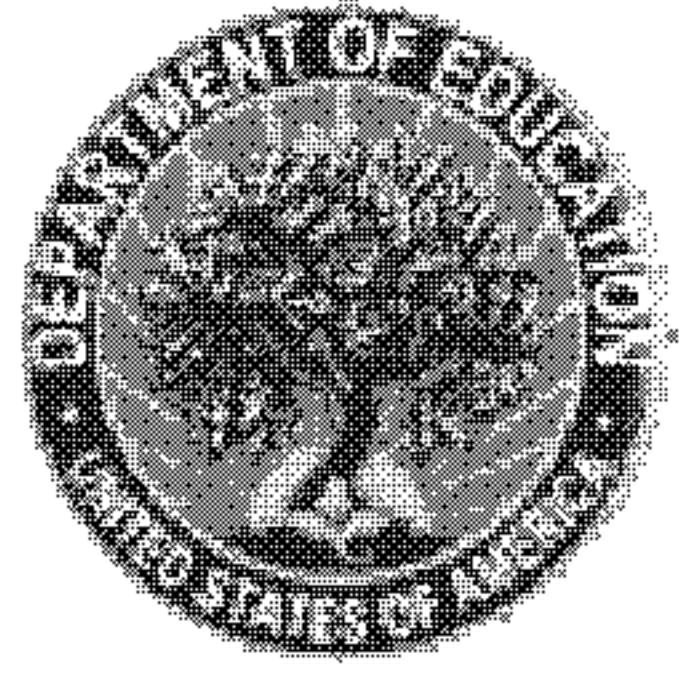
\* Date Signed:

**Application for Federal Assistance SF-424**

Version 02

**\* Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.



U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization: Colorado Department of Education

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

SECTION A - BUDGET SUMMARY
U.S. DEPARTMENT OF EDUCATION FUNDS

Table with 7 columns: Budget Categories, Project Year 1(a), Project Year 2 (b), Project Year 3 (c), Project Year 4 (d), Project Year 5 (e), Total (f). Rows include Personnel, Fringe Benefits, Travel, Equipment, Supplies, Contractual, Construction, Other, Total Direct Costs, Indirect Costs, Training Stipends, and Total Costs.

\*Indirect Cost Information (To Be Completed by Your Business Office):

If you are requesting reimbursement for indirect costs on line 10, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal government? [X] Yes [ ] No

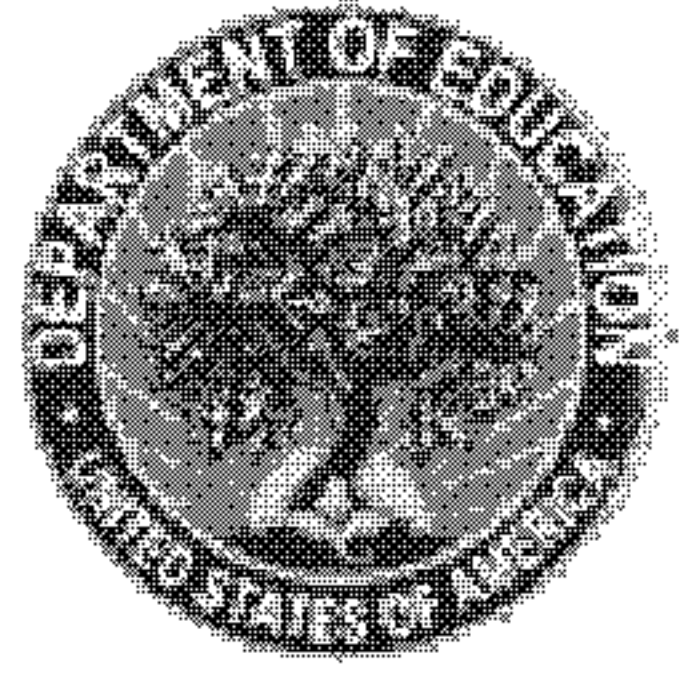
(2) If yes, please provide the following information:

Period Covered by the Indirect Cost Rate Agreement: From: 7/1/2009 To: 6/30/2010 (mm/dd/yyyy)

Approving Federal agency: [X] ED [ ] Other (please specify): \_\_\_\_\_ The Indirect Cost Rate is 10.5%

(3) For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:

[ ] Is included in your approved Indirect Cost Rate Agreement? or, [ ] Complies with 34 CFR 76.564(c)(2)? The Restricted Indirect Cost Rate is 0%



**U.S. DEPARTMENT OF EDUCATION**  
**BUDGET INFORMATION**  
**NON-CONSTRUCTION PROGRAMS**

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:  
Colorado Department of Education

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

**SECTION B - BUDGET SUMMARY**  
**NON-FEDERAL FUNDS**

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2. Fringe Benefits	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
3. Travel	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
4. Equipment	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
5. Supplies	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
6. Contractual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
7. Construction	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
8. Other	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
9. Total Direct Costs (lines 1-8)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
10. Indirect Costs	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
11. Training Stipends	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
12. Total Costs (lines 9-11)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

## ASSURANCES - NON-CONSTRUCTION PROGRAMS

Standard Form 424B (Rev.7-97)

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management, and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. "4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. "1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. '794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. "276a to 276a-7), the Copeland Act (40 U.S.C. '276c and 18 U.S.C. "874) and the Contract Work Hours and Safety Standards Act (40 U.S.C. " 327-333), regarding labor standards for federally assisted construction sub-agreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. "1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. "7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. "1721 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance

of 1975, as amended (42 U.S.C. " 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) " 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. " 290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. ' 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with the provisions of the Hatch Act (5 U.S.C. "1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. '470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. "469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. "2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. "4801 et seq.) which prohibits the use of lead- based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

**Signature of Authorized Certifying Representative:**

**Name of Authorized Certifying Representative:** Robert K. Hammond

**Title:** Deputy Commissioner

**Date Submitted:** 12/02/2009

### Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

<b>1. Type of Federal Action:</b> <input type="checkbox"/> Contract <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Loan <input type="checkbox"/> Loan Guarantee <input type="checkbox"/> Loan Insurance	<b>2. Status of Federal Action:</b> <input checked="" type="checkbox"/> Bid/Offer/Application <input type="checkbox"/> Initial Award <input type="checkbox"/> Post-Award	<b>3. Report Type:</b> <input checked="" type="checkbox"/> Initial Filing <input type="checkbox"/> Material Change <b>For Material Change only:</b> Year: 0 Quarter: 0 Date of Last Report:
<b>4. Name and Address of Reporting Entity:</b> <input checked="" type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier, if known: 0 Name: Colorado Department of Education Address: 201 E. Colfax Ave. City: Denver State: CO Zip Code + 4: 80203-1799  Congressional District, if known: 01	<b>5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:</b>  Name: Address: City: State: Zip Code + 4: -  Congressional District, if known:	
<b>6. Federal Department/Agency:</b> U.S. Department of Education	<b>7. Federal Program Name/Description:</b> Statewide Longitudinal Data Systems Gran  CFDA Number, if applicable: 84.384	
<b>8. Federal Action Number, if known:</b> ED-GRANTS-072909-001	<b>9. Award Amount, if known:</b> \$0	
<b>10. a. Name of Lobbying Registrant</b> (if individual, last name, first name, MI): Address: City: State: Zip Code + 4: -	<b>b. Individuals Performing Services</b> (including address if different from No. 10a) (last name, first name, MI): Address: City: State: Zip Code + 4: -	
<b>11.</b> Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.	Name: Robert K. Hammond Title: Deputy Commissioner Applicant: Colorado Department of Education Date: 12/02/2009	
<b>Federal Use Only:</b>		Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)



## CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements.

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal Loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance.

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee or any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

### APPLICANT'S ORGANIZATION

Colorado Department of Education

### PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: Mr.      First Name: Robert      Middle Name: K

Last Name: Hammond      Suffix:

Title: Deputy Commissioner

Signature: \_\_\_\_\_

Date:

12/02/2009

ED 80-0013

03/04

**SUPPLEMENTAL INFORMATION  
REQUIRED FOR  
DEPARTMENT OF EDUCATION GRANTS**

**1. Project Director:**

Prefix:      \* First Name:              Middle Name:              \* Last Name:              Suffix:  
Mr.          Daniel                              E                              Domagala

Address:

\* Street1:              201 E. Colfax Ave.  
Street2:  
\* City:                      Denver  
County:  
\* State:                      CO\* Zip / Postal Code: 80203 \* Country: USA

\* Phone Number (give area      Fax Number (give area  
code)                              code)  
(303)866-6961                      (303)866-6888

Email Address:

DOMAGALA\_D@CDE.STATE.CO.US

**2. Applicant Experience**

Novice Applicant                       Yes               No               Not applicable

**3. Human Subjects Research**

Are any research activities involving human subjects planned at any time during the proposed project period?

Yes               No

Are ALL the research activities proposed designated to be exempt from the regulations?

Yes      Provide Exemption(s) #:

No      Provide Assurance #, if available:

**Please attach an explanation Narrative:**

**Attachment:**

Title :  
File :

# **Project Narrative**

## **Project Narrative - Project Abstract**

Attachment 1:

Title: **Project Narrative - Project Abstract** Pages: **1** Uploaded File: **SLDS abstract-FINAL.doc**

## ABSTRACT

The Colorado Department of Education (CDE), working in collaboration with the Governor's Office of Information Technology (OIT), the Governor's Office of Policy and Initiatives, and the Colorado Departments of Higher Education, Human Services and Labor End employment, proposes to build a state longitudinal data system that meets the required system elements and capabilities set out in the Request for Applications and the demands of its ground-breaking P-20 education reform agenda. This agenda, which has been underway for several years, implements true P-20 education alignment across the state's education systems and is anchored by a common definition of postsecondary and workforce readiness to ensure students exit prepared for postsecondary education and workforce success. Moreover, the Colorado General Assembly and the Office of Governor Ritter have made inter-departmental data sharing a state priority by way of legislation that authorizes the development of interdepartmental data sharing and the creation of a state-level data sharing advisory council. The Colorado approach to educational alignment seeks to produce meaningful information on educator and principal effectiveness through the development of the state's first educator identifier system, which will be used to link all Colorado educators, students, and educator preparation programs for the purposes of individual and program evaluation. Colorado also seeks to expand its breakthrough analytical and data visualization tools to support meaningful accountability, transparency and strategic investment. In short, Colorado is among the national leaders in education reform and cross-system alignment. However, in spite of its impressive reform-oriented agenda, in the absence of SLDS grant funds to implement proposed data capture and interoperability solutions, the potential of the state's agenda will not be fully realized.

Project SchoolView™ envisions a flexible enterprise P-20 information and knowledge management system that will equip users to manage and use information for informed decision-making ensuring all students in Colorado are ready for postsecondary or workforce success. It addresses the following strategic priorities:

- **CAPTURE:** P-20 student-focused data are effectively and efficiently collected across multiple data sources including student information, programmatic classifications and educator quality.
- **LINK:** Data is effectively shared and exchanged across multiple agencies (human services, K-12, higher education, labor, corrections) and levels (district, state, federal) to promote accountability, inform policy and ensure a holistic view of student success.
- **PROVIDE:** Stakeholders (parents/guardians, students, educators, policymakers and researchers) have access via interactive portals to understandable, timely and reliable information, online content and collaboration tools to inform and improve student performance.

Colorado's Race to the Top application will build on this foundation by focusing on building the performance capacity of stakeholders to leverage information to inform development, policy, programs and practice to drive increased student performance through professional development, innovative programs and improved instructional practices. Project SchoolView™ holds the potential to transform the delivery and evaluation of education in Colorado, offering a national model that advances the use of more robust and timely performance data throughout the P-20 education system and capitalizes on the state's impressive student-centered education reforms.

# Project Narrative

## Project Narrative - Project Narrative

Attachment 1:

Title: **Project Narrative** Pages: **30** Uploaded File: **SLDSProjectNarrative-FINAL.doc**



**Application of the Colorado Department of Education  
for**

**Project SchoolView™**

CFDA 84.384

Submitted to the U.S. Department of Education  
Institute for Educational Sciences  
December 4, 2009

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## I. NEED FOR THE PROJECT

### A. INTRODUCTION: CONTEXT AND VISION

*“With a collaborative spirit, with a **collaborative platform** where people can **upload data, explore data, compare solutions, discuss the results, build consensus**, we can engage passionate people, local communities, media and this will raise - incredibly - the amount of people who can understand what is going on. And this would have fantastic outcomes: the **engagement of people**, especially new generations; it would **increase knowledge, unlock statistics, improve transparency and accountability of public policies, change culture, increase numeracy, and in the end, improve democracy and welfare.**”*

Enrico Giovannini, Chief Statistician, Organisation for  
Economic Co-Operation and Development

Educators and policymakers in Colorado agree that data sharing holds one of the keys to unlocking the state’s great potential to dramatically improve student outcomes. Collectively, they challenge the state to imagine an education system in which educators use analytic tools and collaborative platforms available at their desktops to tailor instruction that meets the needs of individual students. They imagine decision-makers using data to identify the most critical areas for strategic investment, and to diagnose specific issues associated with student success, such as educator preparation, instruction and curricula. They imagine policymakers using data across human services, education and labor and employment agencies to understand students’ readiness for key transitions from preschool through high school and into college and careers and to provide appropriate interventions. They imagine parents/guardians and community members using data to define student, school, district and state success with transparent and broadly accepted performance measures. And they imagine a holistic approach to education from pre-K through the labor force that continually diagnoses and then responds to barriers to student success and improves the development of the state’s human capital and economic development. This is the future Colorado’s educators and policymakers demand, and it can be created with an investment of SLDS grant funds.

**The Colorado Context.** Colorado currently serves more than 820,000 increasingly diverse public school students in grades P-12, and nearly 220,000 in public higher education. Consistent with its tradition of local control, Colorado’s 178 school districts vary dramatically in size, demographics, capacity, reform history and technological sophistication. District enrollment, for example, ranges from a low of 54 students to a high of 86,000 students; more than half of all students are served in the 10 largest districts. In the state’s early childhood education system, infants, toddlers and preschoolers are served in a range of publicly funded school- and community-based settings primarily by three state agencies. The Colorado Department of Higher Education (CDHE) coordinates policy and state resources for the state’s 27 public institutions as well as several hundred private and proprietary schools, seeking to ensure that higher education is accessible and affordable to all Coloradoans. Nearly 86 percent of students enrolled in the state’s twelve four-year and fifteen two-year institutions are Colorado residents.

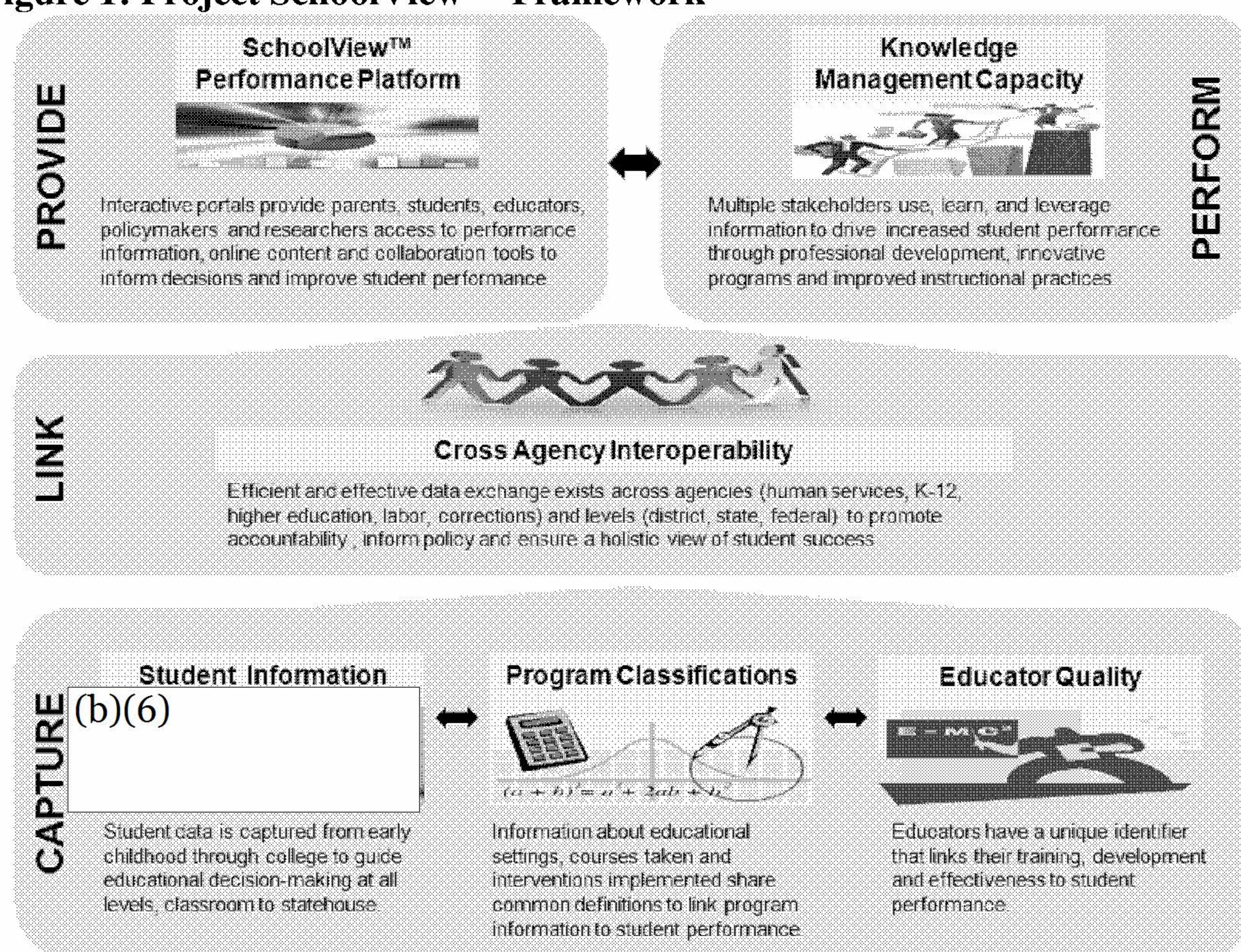


Student achievement trends in Colorado have remained relatively flat over time and are characterized by persistent achievement and participation gaps based on race/ethnicity and socioeconomic status. The “Colorado Paradox” describes the challenging scenario in which Colorado has one of the most educated citizenries in the nation, but also one of the lowest college completion rates among native born citizens. Because of the state’s quickly changing demographics, a large influx of educated adults has created wide disparities in educational attainment. In fact, according to the National Center for Higher Education Management Systems, Colorado has the widest gap in educational attainment between white and non-white adults of any state in the nation. Colorado educators, policymakers, and business leaders unanimously agree that these disparities are unconscionable and must be addressed.

In response, the state has enacted a ground-breaking reform agenda focused on P-20 education alignment, with a commitment to prepare students to be ready at exit for the next stage of their education and ultimately for postsecondary and workforce participation. Students demonstrating postsecondary and workforce readiness (PWR) on the state’s soon to be adopted PWR assessment will be entitled to enroll in Colorado’s higher education system. Implementation of these reforms requires (and state law now authorizes) an expanded state longitudinal data system that comprehensively meets the required elements and capabilities set out in the RFA; expansions that will not just support but *drive* improved student performance through knowledge management at all levels, from the classroom to the statehouse.

Here, Colorado confronts a gap of a different sort: the gap between the architecture and capabilities of Colorado’s current data system and the ones required to support robust knowledge management in an aligned P-20 education system. Before stakeholders can apply information in educational decision making (identifying opportunities for continuous improvement, effective interventions, return on investment), the SLDS needs to capture, link and provide P-20 data in forms that are actionable, credible and timely. As shown in the figure below, Project SchoolView™ is designed to develop the infrastructure to do just that, positioning Colorado to implement P-20 reforms that focus on preparing the youngest learners for success in school, improving K-12 outcomes through innovation and quality teaching, and graduating more students from college who are prepared for 21<sup>st</sup> Century jobs. Colorado’s Race to the Top application will build upon this foundational work with its focus on providing outstanding digital content to support performance and knowledge management, education capacity, school input and blended learning models.

**Figure 1: Project SchoolView™ Framework**



**B. NEED: THE GAP BETWEEN CURRENT CAPACITY AND REQUIRED SLDS CAPABILITIES**

Appendix C describes the current status of the seven required capabilities and twelve essential elements of Colorado’s data system by item. Need is the distance between the current capacity and functionality of this system and the future system that both meets the required elements/capabilities in the RFA and is robust enough to support the state’s ambitious P-20 reform agenda; an agenda that demands cross-agency collaboration, facilitates continuous improvement, and is fueled by the application and generation of knowledge by multiple stakeholders to advance student performance. Table 1 below defines Colorado’s great need in terms of this distance.

Colorado is at a crossroads. Implementation of a cutting-edge longitudinal data system, technology infrastructure, and highly engaging and value-added data visualization tools will drive innovation and improved student performance through performance management at all levels, from the classroom to the statehouse. Authorizing legislation and a progressive policy framework is in place (refer to Appendix A for an overview). Preliminary study and planning related to system needs and design have been completed. The SLDS grant will provide the financial resources to dramatically accelerate the pace of progress and propel the state’s forward momentum. The converse is also true: without the investment of outside resources, Colorado will be unable to adequately capture, manage and act upon available information to make dramatic improvements in student outcomes.

**Table 1. Colorado’s SLDS Needs**

	<b>Moving From</b>	<b>Moving To</b>
<b>CAPTURE</b>	<ul style="list-style-type: none"> <li>• Program-focused data</li> <li>• Manual data submissions</li> <li>• Single-point-in-time data exchanges</li> <li>• Collection silos</li> <li>• Multiple collection points for same data</li> <li>• Data push from local education agencies (LEAs)</li> <li>• K-12 longitudinal data</li> <li>• Non-standardized file formats</li> <li>• Inconsistent data element definitions across data submissions</li> <li>• Educator data limited to licensure information and not linked to student data</li> <li>• Cumbersome and time-consuming process for federal data submission</li> <li>• Lack of common course codes</li> </ul>	<ul style="list-style-type: none"> <li>• Student/Educator-focused data</li> <li>• Web-automated services</li> <li>• Transactional system; data updated continuously</li> <li>• Enterprise view of data</li> <li>• Single collection of data for multiple uses</li> <li>• Data pull from state</li> <li>• P-20 longitudinal data</li> <li>• Standardized file formats</li> <li>• Consistent data element definitions, anchored in national standards</li> <li>• Educator identifier and educator-student link support range of data related to educator-student cycle</li> <li>• Automation of federal data submission</li> <li>• Common course codes link program information to student performance</li> </ul>
<b>LINK</b>	<ul style="list-style-type: none"> <li>• File-based system</li> <li>• Lack of standards/trust is a barrier to interagency data exchange</li> <li>• Lack of consensus among stakeholders regarding meaning and use of data</li> <li>• Data related to P-20 education siloed in various state agencies</li> <li>• Relevant data fractionated due to different collection points; state agencies acting in isolation</li> <li>• Colorado’s K-12 data system does not link to other state systems</li> </ul>	<ul style="list-style-type: none"> <li>• System interoperability</li> <li>• Governed by standards; high level of trust in data among stakeholders</li> <li>• Transparency regarding data definitions, usage and flow</li> <li>• Cross-agency data sharing through application of common standards</li> <li>• Holistic view of human capital development</li> <li>• Cross-state linkages enable multistate collaboration</li> </ul>
<b>PROVIDE</b>	<ul style="list-style-type: none"> <li>• Assessment data limited to results of annual state assessment (CSAP)</li> <li>• Aggregate (state-level) data focus</li> <li>• State assessment results have six-month time lag</li> <li>• Researchers and CDE staff have limited access to student-level data</li> </ul>	<ul style="list-style-type: none"> <li>• System includes formative/interim assessment data as well</li> <li>• Student-level data focus</li> <li>• Timely reporting of results to inform instruction</li> <li>• Researchers and CDE staff have access to student-level data (with appropriate privacy protections) to support school/district improvement</li> </ul>

	<ul style="list-style-type: none"> <li>• Limited ability to benchmark state or LEA performance to other states/LEAs</li> <li>• SchoolView™ provides information portal for various groups of users</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-state performance benchmarking enhances accountability</li> <li>• Project SchoolView™ is a collaboration platform as well as one-stop shop for data</li> </ul>
<b>PERFORM</b>	<ul style="list-style-type: none"> <li>• Mostly static annually-updated data available on CDE website</li> <li>• Difficult for users to interpret and act upon</li> <li>• Compliance-oriented focus</li> <li>• Looking back – post mortem</li> <li>• Uneven capacity across and within LEAs regarding the use of data in decision-making</li> <li>• Accreditation of educator preparation programs based on inputs and processes</li> <li>• State data system does what it was built to do</li> </ul>	<ul style="list-style-type: none"> <li>• Data updated regularly offering more timely information based on current enrollment</li> <li>• Interactive, analytic tools bring data alive for action by users</li> <li>• Performance management focus</li> <li>• Looking forward – using data proactively and for diagnostic and predictive purposes</li> <li>• Users have the knowledge and commitment to analyze data, apply information to education decisions and to create and advance knowledge through collaboration</li> <li>• Accreditation of educator preparation program based on outcomes, including student learning results</li> <li>• State data system is nimble, dynamic and able to respond to emerging needs and opportunities</li> </ul>

**How SLDS Needs Were Identified.** The Colorado General Assembly commissioned a major study of the state’s education data infrastructure in 2006; the final report was released in December 2007. Conducted by an independent entity, the North Highland Company, this comprehensive review of Colorado's educational data systems included information on the requirements and methods with which existing data are collected, the hardware and software being used at the local and state levels, and the capability of school districts to share data with each other and to improve access to appropriate state-level data. The study also examined skill gaps and the appropriateness of staffing levels at CDE. The study highlighted the substantial resources demanded of LEAs to satisfy reporting requirements using the existing data system and the need to involve local leaders in conversations about the future evolution of the state data system.

The road map produced in this report has facilitated and focused discussion among branches of state government, state agencies, and education stakeholders about data system needs and possible next steps in the system’s evolution. Building on this study, the Information Technology Capacity Analysis was completed earlier this year by the regional education research and service agency,

WestEd. This study focused on the capacity of CDE staff to meet the current and anticipated future demands related to enterprise data collection and management. In response, CDE made major organizational changes to its Information Management Services unit (described in Section IV) which position the department to effectively implement Project SchoolView™.

In preparation for the current SLDS award cycle, CDE retained industry-recognized experts in data architecture and costing strategies to assist in identifying ambitious but realistic objectives for enhancing the existing data system, framing specific strategies for their attainment, and developing cost-effective budgets. Finally, CDE sought input from a diverse group of stakeholders throughout the grant development process, including a day-long summit on October 14, 2009. Summit participants reviewed a draft of the application and weighed in on its key themes and proposed outcomes. In addition to producing input that enhanced the application, the summit strengthened the political will required to realize the Project SchoolView™ vision.

### C. MOVING FROM: COLORADO'S CURRENT DATA SYSTEM

This section provides a narrative of the current programs and efforts within Colorado to improve student performance management. Refer to Appendix A for a pictorial representation.

**Collection.** CDE has developed and deployed a multi-layered data collection and reporting system. This system is “collection driven,” developed to fulfill legislative and regulatory requirements to report specific data sets to given stakeholders. Its major components include:

- **The Automated Data Exchange (ADE)**, through which school districts submit data electronically via a secure Web interface or Web-based forms.
- **The State Education database** and other legacy systems that stores collected school and student level data.
- **The Education Data Warehouse**, extracted from the State Education database, through which accountability reports and other information are generated. Data is loaded into the Warehouse and data marts using Extract, Translate and Load (ETL) processes. Initially developed to support school accountability reporting, the warehouse is now a comprehensive repository of state education data.
- **Records Integration Tracking System**, a system that generates unique student IDs. Any student included in a data collection must have a state-assigned student ID.

Colorado LEAs comply with over 125 collections annually at various times throughout the year, often using different file formats. To prepare for submission, LEAs validate and extract required data into collection specific file formats that often change yearly based on new rules or criteria from the state, and manage vendors to ensure the extracts work from their different student information systems. To submit the data to the state, LEAs log into the ADE system and load the file. If there is a problem with the data or file, LEAs must fix the issue and then prepare and reload the entire file again (and sometimes repeatedly) until the file is accepted.

The data collection processes currently employed by LEAs range broadly in sophistication. At one end are highly automated districts that can extract collection data from their own systems of record such as Student Information Systems, translate that data into the format required by the

CDE and upload the data to the CDE. At the other end are districts that extract from small Access or Excel systems or that use downloaded Excel.

***Student Identifier.*** In November 2002, CDE implemented a unique student identifier (the State Assigned Student ID, or SASID) for all public P-12 school students. This system provides schools the ability to validate and/or generate student IDs when a student enrolls in a district. The SASID is attached and encrypted, and personal information is removed for student level data reported to CDE. Legislation enacted in 2006 required the higher education system to adopt the use of the student identifier for the purpose of sharing student data across the state's data systems. Legislation enacted in 2008 expanded the use of IDs by requiring the assignment of unique identifiers to students enrolled in publicly funded early childhood education programs.

***Federal Reporting.*** CDE, through its operational data store and Education Data Warehouse, provides the US Department of Education with the information to meet current state and federal reporting requirements, including EDFacts, accountability reporting, and dropout reporting. The current process for gathering and correlating the appropriate data is time consuming and often difficult. At this time, only 50% of the data required for federal reporting exists in the warehouse. The remainder is located in manual reports and must be associated and validated prior to submission.

***Interoperability.*** CDE and CDHE currently do not have access to shared data between their respective systems. Instead, the agencies agree to provide data to the other through a memorandum of understanding and share data through the exchange of CDs. Similarly, the current system architecture does not allow CDE and other state agencies that maintain data related to the P-20 education system (Departments of Labor and Employment, Public Health and Environment, Human Services, Corrections, Revenue) to share data between their respective systems. In the absence of data sharing, educators serving a student who moves through public schools, the juvenile justice system and community college cannot access the student's complete educational records. In the absence of data sharing, the data system cannot provide information to inform complex policy questions that cut across education, workforce, and economic development contents. Significantly, Colorado's legislative framework now demands the collaboration required to produce these types of information and to promote accountability, inform policy and ensure a holistic view of student success.

**Higher Education.** CDHE's student unit record data system was first implemented in the mid-1980s as a part of the accountability movement in public higher education. The system was mandated by state legislation and tracks students from application at any public institution to graduation on a semester by semester basis. Reports are continuously designed, refined, and updated in collaboration with representatives from the higher education institutions. The data collections are stored by CDHE in a data warehouse and static reports on important higher education indicators are produced and made accessible on the CDHE website. CDHE also makes available simple online querying capability for basic aggregate higher education statistics.

CDHE is responsible for collecting institutional data from Colorado institutions of higher education including information on admissions, enrollment, credit hours, remediation, educator

preparation programs, degrees and credentials earned and other indicators. Through an agreement with CDE beginning in 2008, CDHE receives the state assigned K-12 student IDs (SASIDs) which allows CDHE staff to match records for students from a Colorado public high school. These records are used in processing applications to the Colorado Opportunity Fund, a postsecondary stipend for Colorado students, and in Career and Technical Education reporting.

**Early Childhood Education.** Increasing the quality and availability of early childhood education is a key focus in the state’s P-20 education agenda, toward the end of ensuring that children are ready to learn when they enter kindergarten. Data on children who receive publicly-funded early childhood education services are decentralized, currently collected and maintained by three different state agencies. The Colorado Department of Human Services (DHS) maintains the largest data set. An individual child may have records in more than one of the systems, none of which are capable of being correlated to the other so as to identify all services provided to the child. A unique identifier is required to collect information about the early childhood services young children receive, to link to information about other programs in which they and their families are enrolled, and to identify early childhood programs that are associated with strong school readiness outcomes. DHS comes to this collaboration in the early stages of an initiative to integrate multiple data sets across its data systems. Using business intelligence and performance management software, DHS will have access to real-time information that will support better business decisions and greater efficiency, while easing compliance reporting.

***Data Analysis and Reporting.*** CDE uses two COGNOS software applications, ReportNet and PowerPlay, to analyze and report on data contained in the Education Data Warehouse. Both tools are accessible via a Web interface and analyze and aggregate large amounts of data into summarized, comprehensible forms, including reports, charts, tables and graphs.

CDHE uses web applications and an SQL server database to collect data from the state institutions of higher education and then house, analyze, and report on higher education issues. Interactive aggregated data on enrollment, approved degrees, and degrees awarded are available to the public on the agency website. CDHE is currently employing new visualization tools which show institutional progress longitudinally on a number of key indicators. Additionally, data reports and analyses created by in-house research staff for the Colorado Commission on Higher Education and for the Colorado General Assembly are posted to the CDHE website.

***Governance.*** The Education Data Advisory Committee was established in 2002 (and codified in 2005) to review data demands placed on K-12 public education and charged to recommend the most efficient ways of collecting data and to determine if recommendations for “new” data collections are redundant and propose alternatives. In 2009, the Colorado legislature established the Government Data Advisory Board (GDAB) and a fifteen-member Education Data Subcommittee to implement the state’s interdepartmental data sharing protocol, which is focused on improving data sharing among state agencies and between the state and school districts, postsecondary institutions, non-profit organizations, and professional researchers.

***Privacy Protection and Data Accessibility.*** The CDE data collection system and the data warehouse secure data in Oracle® databases. All authorized users are required to sign

confidentiality agreements. School districts are able to perform statewide student searches using state assigned IDs, but otherwise have access only to their own students' data. Outside persons, groups and research centers must submit a request for data to CDE's Institutional Review Board and receive approval prior to accessing data. This limited access constrains the ability of districts and schools to obtain information needed to guide individual student instruction, as well as the ability of researchers and CDE staff to support district/school improvement efforts by providing timely information to policymakers related to analyzing and advancing student achievement.

***SLDS Grant.*** In 2007, CDE received a three-year (\$4.2M) SLDS grant focused on three work strands: (1) Expansion of the CDE Data Warehouse, which has allowed CDE to extend its centralized repository of historical data; (2) Electronic exchange of student transcripts between LEAs and with higher education institutions; and (3) Expansion of local data analysis tools and access to student-level interactive data displays. That work is on track in meeting project outcomes and positions the state to undertake the work described in this proposal. Going forward, both SLDS efforts will be coordinated to avoid duplication and attain identified outcomes.

***Colorado Growth Model.*** The Colorado General Assembly enacted legislation in 2004 (refined in 2007) that required CDE to report individual growth rates for each student in the state and to combine those growth rates to measure school performance. The resulting Colorado Growth Model compares a student's performance on the Colorado Student Assessment Program over the years to other Colorado students in the same grade who had similar scores in past years, creating an academic growth metric. In compliance with legislation enacted earlier this year, the Growth Model will be expanded to indicate how much improvement is needed for each student to reach postsecondary readiness,—that is, the ability to matriculate to the postsecondary system of education without need for remediation—and provide meaningful diagnostic information to students, parents/guardians and educators on the progress of each student over time. Colorado Governor Bill Ritter Jr. invested \$2.5 million of the Government Services Fund, created as a result of the American Recovery and Reinvestment Act (ARRA), to advance the development of this promising model. This reflects the single largest investment using these funds. As described in Section IV, Colorado is working with the Council of Chief State School Officers to build a multi-state collaborative to share in and advance the Colorado Growth Model and its visualization tools.

SchoolView™ was launched in August 2009 as a web portal that provides student, school, school district, and state performance reports and supporting data using the Colorado Growth Model. Building on this brand, Project SchoolView™ expands this work to higher levels of impact and effectiveness by providing a platform through which stakeholders can access and collaboratively analyze and apply relational and longitudinal P-20 data on student, school, district, and educator performance.

***Educator ID System.*** The Governor's discretionary ARRA funds and private grants totaling \$1.1 million have been garnered to support the development and implementation of a system that will associate educators to student data across time and across databases. This initial investment will help initiate an Educator ID assignment system, but additional investment is required to fully implement and activate a student-linked performance management system for Colorado educators.



***IEP Management System.*** This initiative (estimated at \$1.5M) is being funded from CDE’s Exceptional Student Learning Unit’s annual budget. The Individual Education Plan (IEP) management system will assist in the documentation and reporting of special education student information through the use of an integrated database management system. The system will manage student and staff information, streamline the process of referring students for comprehensive educational evaluation, document decisions made during Child Study Team meetings, develop and maintain individual education plans, provide documentation for students receiving special education and/or related services, and allow for a well-defined, efficient method of exchange of data between the application and state and federal entities.

#### **D. MOVING TO: ADDRESSING REQUIREMENTS OF THE STATE FISCAL STABILIZATION FUND**

The State Fiscal Stabilization Fund requires states to advance essential education reforms to benefit students from early learning through postsecondary education, including college- and career- ready standards and high-quality, valid and reliable assessments for all students; development and use of pre-K through postsecondary and career data systems; increased educator effectiveness and an equitable distribution of qualified educators; and turning around the lowest-performing schools. Colorado is implementing a true P-20 education alignment strategy across the state’s education systems, anchored by a common definition of postsecondary and workforce readiness. To support this alignment, the General Assembly and the Governor’s Office have made inter-departmental data sharing a state priority. Colorado’s approach to educational alignment also seeks to produce meaningful information on educator and principal effectiveness by mandating the development of the state’s first educator identifier system, which will be used to link educators, students, and educator preparation programs for the purposes of individual and program evaluation.

Project SchoolView™ will enable these reforms by ensuring that timely and reliable P-20 data reach local and state education policymakers and researchers in forms that support continuous improvement, especially in instruction, and informed decision making from the classroom to the statehouse. Specially, Project SchoolView™ builds Colorado’s capacity to address State Fiscal Stabilization Fund requirements in ways that include the following:

- **Expand Colorado Growth Model.** Colorado will expand its breakthrough analytical and data visualization tools that make education data transparent through public reporting and that support accountability and strategic investment. The model will broaden its current K-12 focus to include relational student-education-program information that traces students’ movement from preschool through K-12 and into postsecondary education and the 21st century workforce, including employment, wage and earnings data. This information will guide educational decision making at all levels, including instructional improvement. Colorado will share this model with other states in a non-proprietary manner.
- **Improved LEA-to-State Reporting.** A more efficient, less burdensome reporting framework will enable LEAs to refocus leadership, staff and resources from compliance to knowledge management and the provision of direct student services.
- **Predicting Risk.** The ability to conduct longitudinal studies using a breadth of individual student information will support the identification of specific factors that are predictors of a student’s risk of falling behind or dropping out. Early warning systems will engage

timely and appropriate interventions to ensure individual students are on track to be college and career ready.

- **Match Student Records.** The ability to match student records between P-12 and higher education systems will provide information regarding high school graduates who need remediation in college, the relationship between high school courses and college enrollment and persistence, the alignment between graduation standards and college and workplace expectations, and the percentage of each district's high school graduates who enroll in college within a specified time window after graduation. The ability to access workforce data from other state agencies will provide information to enable policymakers to align and coordinate workforce preparation efforts.
- **Educator Data.** Educator data will enable policymakers and educators to analyze gaps and mobility and retention issues, explore the distribution of effective educators throughout the state and within individual schools and districts, and describe the number and percent of educators and principals rated at various performance levels in each LEA's evaluation system.
- **Student/Educator Link.** Linking educator and student data will enable policymakers to explore which forms of educator preparation and certification correlate most closely with students' academic growth in the classroom; to evaluate the effectiveness of educator preparation programs, pre- and in-service professional development, and of educators themselves; and to identify promising models and practices in educator preparation.
- **Improved Support for Low-Performing Schools.** CDE staff charged with supporting persistently low-performing schools will have access to rich, relational data regarding school, educator and student performance that will inform the type of interventions and investments required to drive improved student outcomes in these schools.

## E. COLORADO DISTINGUISHERS

In addition to great need, Colorado brings a unique collection of attributes and strengths to Project SchoolView™.

- **Ambitious Reform Vision.** Colorado is a national leader in its work correlating high school exit rates with college and workforce readiness via a program jointly developed by CDE and CDHE. This definition roots the readiness trajectory in early childhood education by adopting a school readiness assessment and sets the bar high with internationally benchmarked standards. The state vision for reform is ambitious; its leadership is capable and is aligned with required federal data standards and elements (See Appendix A for more detail).
- **Colorado Growth Model.** The state has one of the most advanced systems for tracking, reporting and visualizing the changes in K-12 student academic performance over time. Colorado is leading a multi-state collaboration to build upon the functionality and non-proprietary qualities of this model (refer to Section III.C.).
- **Early Childhood Assessment.** Groundbreaking work in Early Childhood Education assessment includes the adoption of readiness indicators, ongoing use of formative assessments, automated online platforms, and the use of technology in classrooms to support data-driven instruction, all of which will be integrated into Project SchoolView™.

- **Collaboration with Other States.** Colorado demonstrates the willingness to share knowledge, technology and strategy with other states, including record level-data and reporting tools, and to leverage and build on the expertise of other states. Project SchoolView™ positions Colorado to provide national leadership and models regarding the linking of data across institutions, agencies and states to track student progress and inform policy and practice.
- **Diversity of LEAs.** Local school districts vary broadly in size, setting and technological capacity. In addition, Colorado is home to a robust charter school community, with steady increases in the number of schools and enrollment in diverse settings across the state. Colorado’s data system solutions must therefore address the needs of rural, suburban and urban users at a variety of stages of capacity.
- **Variety of Educator Preparation Programs.** Colorado is home to a broad group of higher education and alternative providers of educator preparation programs that vary markedly with regard to size, setting and delivery mechanisms.
- **LEA Collaboration.** Denver-metro area school districts bring leadership, expertise, technological sophistication and a history of collaboration to this work. The Chief Information Officers of the 18 largest metro districts have been meeting regularly for ten years to problem solve, share resources and attain economies of scale in connection with the development of their local data systems. In addition, local education leaders established and operate the Colorado Student Information System Users Group.
- **CDHE Expertise with Longitudinal Data.** CDHE can provide guidance on issues regarding relevant indicators and research with longitudinal data based on its experience in developing a high quality longitudinal data system over the last three decades.
- **State OIT (Office of Information Technology) Leadership.** OIT provides the leadership to develop a shared statewide vision for the state’s human capital development system, interagency collaboration, and a strategic plan for developing new data governance and management systems. Colorado demonstrates the ability to implement complex statewide technology solutions through OIT consolidation efforts. The Colorado Integrated Criminal Justice Information System, for example, has received national attention for information sharing across the boundaries of organizations and jurisdictions among the state criminal justice agencies to enhance public safety, improve decision making, increase productivity and improve access to information.
- **Stakeholder Communication and Outreach.** State leaders have established communication and outreach mechanisms to effectively engage LEAs, higher education institutions, state agencies and other stakeholders in discussions about the creation of a P-20 education data infrastructure and issues related to data governance and integrity.

The SLDS grant opportunity arrives at an ideal time to fulfill immediate and great needs while capitalizing on these strengths. In short, Colorado is “shovel ready,” poised to translate the investment of SLDS funds into a next generation information and knowledge management system.

## II. PROJECT OUTCOMES RELATED TO SYSTEM REQUIREMENTS AND IMPLEMENTATION

### A. HIGH LEVEL VIEWS

Figures 2 and 3 show high-level business and technical overviews of Project SchoolView™. The ambition of the state’s vision for its longitudinal data system is commensurate with the dramatic scale of improvement in student outcomes being pursued. As a result, the work scope for the project spans both this application and Colorado’s Race to the Top application. This application includes initiatives related to improving data capture, linking data across state and local agencies, and providing the right data to the right audience at the right time for use in continuous improvement. The Race to the Top application focuses on building a culture of and tools for knowledge management in P-20 education to improve student academic achievement and close achievement gaps.

**Figure 2: Project SchoolView™ Strategic Articulation**

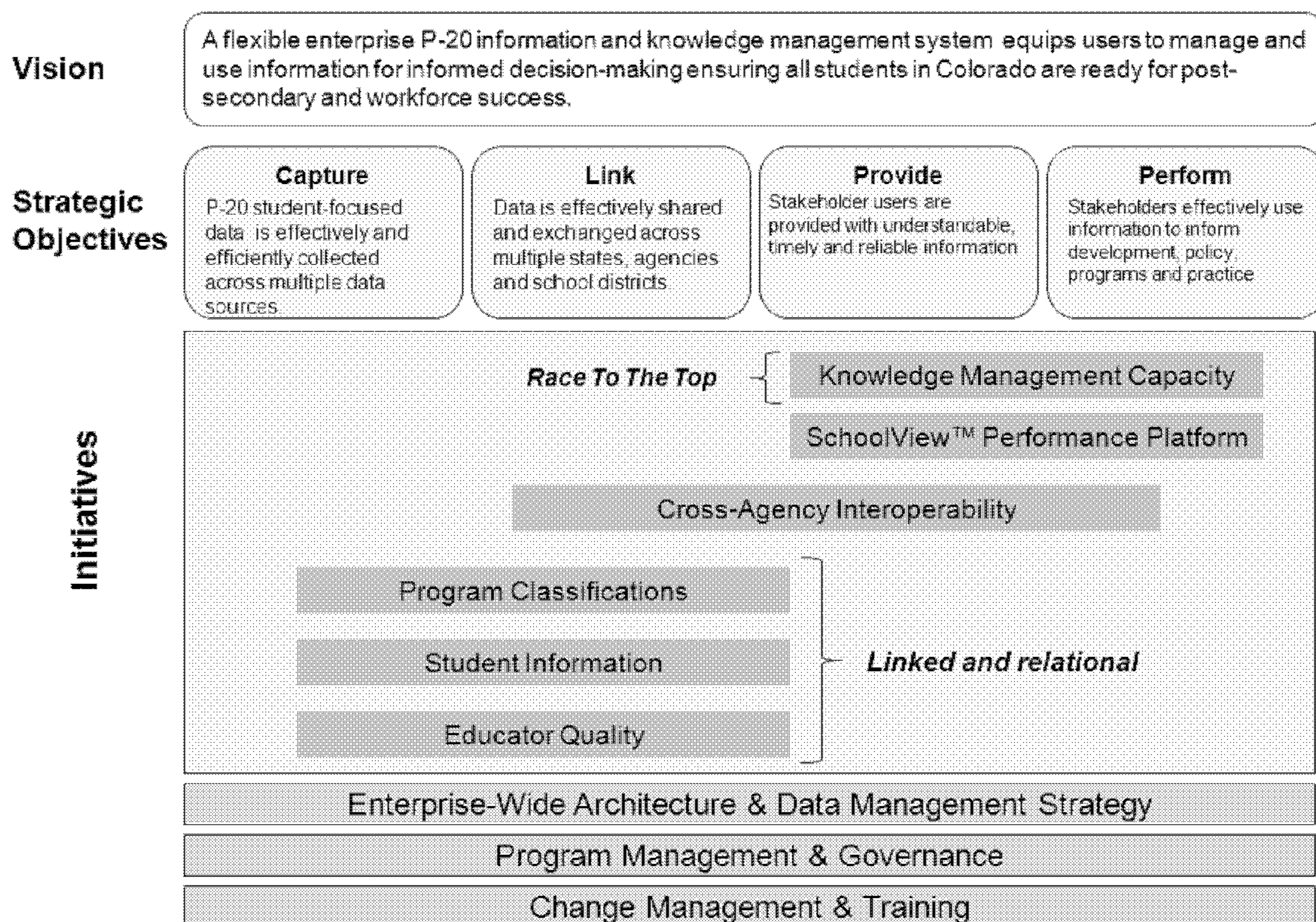
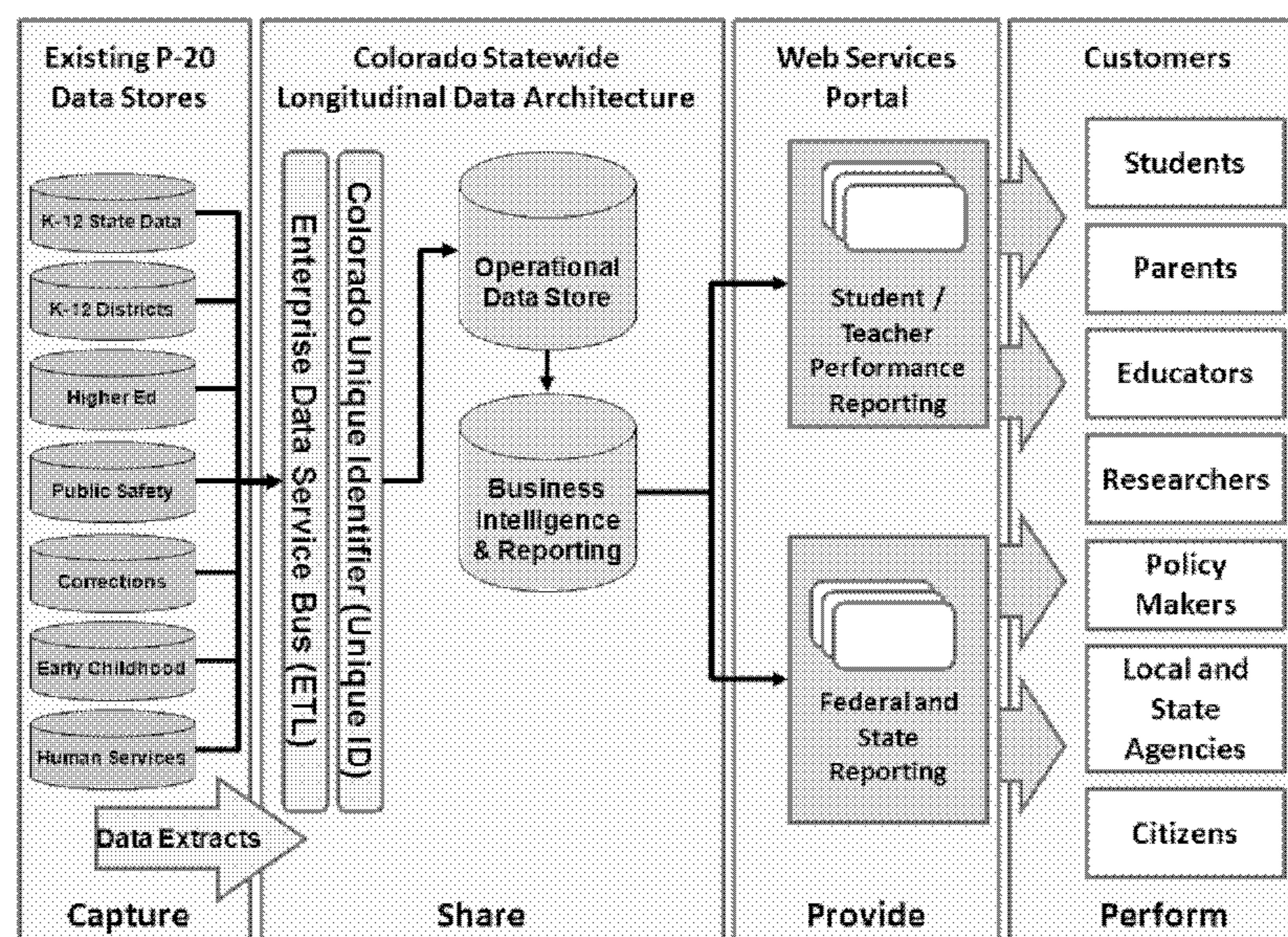


Figure 3 below illustrates a high level architectural view of the proposed state longitudinal data system.

**Figure 3: Project SchoolView™ Enterprise Architecture**



## B. GOALS AND MEASURABLE OUTCOMES

### 1. SchoolView™ CAPTURE: Data Gathering and Collections

**Goal:** P-20 student-focused data is effectively and efficiently collected across multiple sources.

This solution will facilitate the efficient capture of timely and reliable data that can then be linked for purposes of making P-20 educational decisions. Relating student performance data to educator, financial and program level data will enhance accountability, transparency and performance management capacity at all levels of the system. Policymakers will be able to determine the relative effectiveness and return on investment of various interventions and improvement strategies.

#### Measurable Outcomes:

- 1.1 System-level: Establish and publish statewide data standards and definitions for all collections and data elements (i.e., student enrollment, courses, teacher preparation, assessments) to be used by LEAs and state agencies.
- 1.2 System-level: Streamline data demands on LEAs and capture more real-time information through a state data pull rather than an LEA data push.
- 1.3 System-level: Expand data collections to address all federal EdFacts reporting requirements.
- 1.4 System-level: Integrate financial information with student, educator and program level data.
- 1.5 Student-level: Capture student demographic information reported by LEAs once rather than with each program for which LEAs report data, shifting the data focus to students rather than programs.
- 1.6 Student-level: Investigate early childhood data needs and map current preschool data collections and reporting points.
- 1.7 Program-level: Establish common course and program codes.
- 1.8 Educator-level: Accelerate the development and implementation of the unique educator ID.

1.9 Educator-level: Capture information regarding educator preparation and professional development.

## **2. SchoolView™ LINK: Cross Agency Interoperability**

**Goal:** Data are effectively shared and exchanged across multiple state agencies and LEAs.

This solution involves the creation of a new unique, statewide identifier to be hosted at OIT to which agency-specific identifiers will map through master data management and data hub technologies. This unique ID serves as the requisite foundation for cross-agency longitudinal analysis including the significant transitions from early childhood to K-12, K-12 to postsecondary education, and postsecondary education into the workforce. This system will allow policymakers to tie student performance to educator preparation programs, linked to student academic growth and support educator evaluations.

### **Measurable Outcomes:**

- 2.1 Build a unique state ID to cross reference unique identifiers established by various state agencies and systems.
- 2.2 Establish linkages between CDE and other state agencies (Higher Education, Human Services, Labor and Employment, Public Safety, Corrections) that collect data relevant to P-20 student performance.
- 2.3 Link educator characteristics, evaluations, preparation, and development to individual student performance.

## **3. SchoolView™ PROVIDE: Performance Platform**

**Goal:** Stakeholder users are provided with understandable, timely and reliable information.

This solution will combine linked longitudinal data and engaging business intelligence reporting tools to enable stakeholders to analyze the correlations between services and programs conducted by different agencies for groups of students, or for a single student over time. Platforms will be created for distinct user groups that address different information needs and uses. Educators, for example, will be able to use interim/benchmark assessment results to support instructional planning, and to access (and contribute to) effective practices identified for specific categories of students or instructional situations.

### **Measurable Outcomes:**

- 3.1 Provide an enhanced set of standardized aggregate reports and interactive displays through which the public and school personnel can track the performance of students, schools and districts over time.
- 3.2 Provide information portals for:
  - Students, with access to personal real-time and historical achievement information, enabling self-awareness of their own performance and motivating effort.
  - Educators, with access to class and student information, and instructional management tools that foster exchange of best practices and collaboration with other educators.

- Administrators, with access to educator, class, school and district performance measures.
- Parents/guardians, with access to historical and current information on their students.
- Researchers, with access to student-level data and analytics needed to conduct research on the effectiveness and return on investment of interventions, methods, programs, and policies with appropriate confidentiality safeguards.
- CDE staff, with access to student-level information and analytic tools needed to implement the state's system of accountability and support to low-performing schools and districts.

3.3 Provide for open source application development to drive innovation in data visualization and encourage sharing of both information and technology among all interested education stakeholders.

3.4 Train internal and external stakeholders/users to use the SLDS.

3.5 Provide ongoing and cost-effective technical assistance (user support) to internal and external stakeholders in modifying their systems to meet new reporting and interoperability requirements.

#### **4. SchoolView™ PERFORM: Knowledge Management**

**Goal:** Stakeholders effectively use information to guide development, policy, programs and practice.

The Project SchoolView™ infrastructure developed with SLDS and other funds will provide timely, actionable and credible P-20 longitudinal information to stakeholders. Colorado's Race to the Top application will seek funding to build on this foundation by investing in the development of knowledge management tools and capacity. Through this emphasis multiple stakeholders will use and leverage information to drive increased student, educator and school performance leading to postsecondary workforce readiness through professional development, innovative programs, strategic investments, and improved instructional practices.

#### **5. FOUNDATIONAL: Enterprise Data Management Strategy**

**Goal:** Stakeholders are provided with data of the highest quality, reliability and integrity in a timely manner to promote trust in the system and use of the system.

The process of linking data systems across state agencies demands attention to data governance issues. Project SchoolView™ will adhere to the standards, policies, and processes defined by OIT related to data quality, validity, and reliability and described in Section III.D.

##### **Measurable Outcomes:**

5.1 Data governance policies, processes and standards are established to manage the flow of data from capture to use.

5.2 Master data management (MDM) technology is implemented to ensure the quality, reliability and integrity of the data.

5.3 Data stewards provide data quality audits as part of the ongoing monitoring of data quality on a daily basis via a user interface in the MDM application.

5.4 Robust, sophisticated access and authentication technology and processes ensure the privacy and security of data.

## 6. FOUNDATIONAL: Leading and Managing Change

**Goal:** Ensure there is appropriate focus on preparing for, managing and reinforcing change at both the enterprise and individual level.

Project SchoolView™ will generate transformational process and cultural change over the three-year grant term and also over the next decade as stakeholders apply data and manage knowledge to advance student performance in innovative ways. Further, the SLDS system impacts a large and diverse group of stakeholders. A robust change management process, coordinated and aligned with Colorado’s Race to the Top initiative, is essential to success and sustainability.

### Measurable Outcomes:

- 6.1 Dedicated change management leader is in place to ensure change processes are instituted throughout the entire implementation process.
- 6.2 Program reporting measures readiness and effectiveness of change mechanisms.

## III. HIGH-QUALITY, LOGICAL, AND FEASIBLE ACTIVITIES AND TIMELINE

### A. Planned Activities and Timeline

Project SchoolView™ proposes three sets of technology solutions to address Colorado’s data system needs: *SchoolView™ – Capture, Link and Provide*. As stated above, the *SchoolView™ – Perform* solution will be incorporated into the state’s Race to the Top application. The table below provides a roadmap to Project SchoolView™. A high level project plan, organized by the *Capture, Link and Provide* solutions, follows.

	Task	Outcomes	2010		2011				2012				2013		
			Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Capture	Define & Publish Statewide Data Collection Standards	1.1, 1.8													
	Define & Publish Unique ID Strategy (Student, Educator, Program)	2.1													
	Expand and Streamline Data Collection Applications	1.2													
	Overall Infrastructure & Student	1.3, 1.5, 1.1, 2.3													
	Educator	1.3, 1.8, 1.9, 2.3													
	Program	1.3, 1.7													
	Finance	1.3, 1.4													
Link	Finalize and Publish CUPID Architecture & Cross Agency Requirements	2.1													
	Implement Centralized CUPID Architecture & Application	2.1, 5.1-5.4													
	Implement CUPID Interfaces at Initial State Agencies (CDHS, CDHE, CDLE)	2.2, 5.1-5.4													
	Cross Identifier Reporting (Student x Educator x Course x Agency)	2.3, 5.1-5.4													
Provide	Longitudinal Platform Application (SchoolView Enhancements)	3.1													
	Identify Architecture Enhancements	3.1													
	Acquire & Configure Additional Infrastructure	3.1													
	Student-Based Information (All Audiences)	3.2													
	Educator-Based Information (All Audiences)	3.2													
	Program-Based Information (All Audiences)	3.2													
	Finance-Based Information (All Audiences)	3.2													
	Longitudinal Application Exchange	3.3													
	Define, Design, Develop, Test, Pilot														
	Implement Centralized Exchange Architecture														
Post Implementation Observation & Support	3.5														
Program Management															
Change Management	6.1, 6.2														
Training	3.4, 3.5														



As shown in the project plan below, tasks within the *Capture* and *Provide* solutions will be implemented in a coordinated manner, first for student data, and then for educator, program, and finance data. Completion of the *Capture* and *Provide* tasks for student data will implement the overall infrastructure and most of the application logic required to capture data for educators, programs, and finance. *Link*, the unique ID application that will be housed at OIT, will be implemented for CDE before the rollout of the *Capture* solution for student data. Data from the Colorado Department of Human Services, the Colorado Department of Higher Education and the Colorado Department of Labor and Employment then will be captured as these agencies cleanse and match their data for the unique ID. *Provide* includes a line item for the development of powerful new reporting enabled by crossing student, educator, course, and agency information. The primary delivery mechanism for *Provide* will be performance platforms tailored for each audience: students, parents/guardians, educators, state and local agencies and researchers. Training and technical assistance, change management, and enterprise data management are foundational to the data system as a whole, and are integrated into each solution.

**Table 3: High Level Project Plan (Capture and Link)**

ID	Task Name	Duration	Start	Finish
1	<b>Project Planning and Management</b>	<b>720 days</b>	<b>Thu 7/1/10</b>	<b>Wed 4/3/13</b>
2	Project Planning / Issue & Risk Management / Status Reporting	36 mons	Thu 7/1/10	Wed 4/3/13
3	Staff Training and Travel	36 mons	Thu 7/1/10	Wed 4/3/13
4	Procure Contractor Workspace	36 mons	Thu 7/1/10	Wed 4/3/13
5	<b>Capture</b>	<b>720 days</b>	<b>Thu 7/1/10</b>	<b>Wed 4/3/13</b>
6	Define and Publish Statewide Data Collection Standards	3 mons	Thu 7/1/10	Wed 9/22/10
7	<b>Expand and Streamline Data Collection Applications</b>	<b>580 days</b>	<b>Thu 9/23/10</b>	<b>Wed 12/12/12</b>
8	<b>Define and Implement Expanded Architectural Framework</b>	<b>580 days</b>	<b>Thu 9/23/10</b>	<b>Wed 12/12/12</b>
9	<b>Implement Standardized Operational Data Store and Capture Student Data</b>	<b>260 days</b>	<b>Thu 9/23/10</b>	<b>Wed 10/19/11</b>
10	Define, Acquire and Configure Infrastructure	3 mons	Thu 9/23/10	Wed 12/15/10
11	Requirements & Design incl. Controls	4 mons	Thu 9/23/10	Wed 1/12/11
12	Agents, Alerts, ID/Security, Correspondence and Interface Development	7 mons	Thu 12/16/10	Wed 6/29/11
13	Data Conversion	11 mons	Thu 12/16/10	Wed 10/19/11
14	Develop	3 mons	Thu 1/13/11	Wed 4/6/11
15	Test	3 mons	Thu 4/7/11	Wed 6/29/11
16	Pilot	2 mons	Thu 6/30/11	Wed 8/24/11
17	Full Rollout	2 mons	Thu 8/25/11	Wed 10/19/11
18	<b>Implement and Capture Educator Data</b>	<b>160 days</b>	<b>Thu 7/28/11</b>	<b>Wed 3/7/12</b>
19	Requirements & Design incl. Controls	2 mons	Thu 7/28/11	Wed 9/21/11
20	Data Conversion	3 mons	Thu 7/28/11	Wed 10/19/11
21	Develop	2 mons	Thu 9/22/11	Wed 11/16/11
22	Test	1 mon	Thu 11/17/11	Wed 12/14/11
23	Pilot	1 mon	Thu 12/15/11	Wed 1/11/12
24	Full Rollout	2 mons	Thu 1/12/12	Wed 3/7/12
25	<b>Implement and Capture Program Data</b>	<b>160 days</b>	<b>Thu 12/16/11</b>	<b>Wed 7/25/12</b>
26	Requirements & Design incl. Controls	2 mons	Thu 12/16/11	Wed 2/8/12
27	Data Conversion	3 mons	Thu 2/9/12	Wed 5/2/12
28	Develop	2 mons	Thu 2/9/12	Wed 4/4/12
29	Test	1 mon	Thu 4/5/12	Wed 5/2/12
30	Pilot	1 mon	Thu 5/3/12	Wed 5/30/12
31	Full Rollout	2 mons	Thu 5/31/12	Wed 7/25/12
32	<b>Implement and Capture Finance Data</b>	<b>160 days</b>	<b>Thu 5/3/12</b>	<b>Wed 12/12/12</b>
33	Requirements & Design incl. Controls	2 mons	Thu 5/3/12	Wed 6/27/12
34	Data Conversion	3 mons	Thu 6/28/12	Wed 9/19/12
35	Develop	2 mons	Thu 6/28/12	Wed 8/22/12
36	Test	1 mon	Thu 8/23/12	Wed 9/19/12
37	Pilot	1 mon	Thu 9/20/12	Wed 10/17/12
38	Full Rollout	2 mons	Thu 10/18/12	Wed 12/12/12
39	Change Management	36 mons	Thu 7/1/10	Wed 4/3/13
40	Training	24 mons	Thu 6/2/11	Wed 4/3/13
41	<b>Link</b>	<b>720 days</b>	<b>Thu 7/1/10</b>	<b>Wed 4/3/13</b>
42	Finalize and Publish CUPID Architecture and Cross Agency Requirements	3 mons	Thu 7/1/10	Wed 9/22/10
43	<b>Implement CUPID Architecture and Application</b>	<b>260 days</b>	<b>Thu 9/23/10</b>	<b>Wed 9/21/11</b>
44	Acquire and Configure Infrastructure	3 mons	Thu 9/23/10	Wed 12/15/10
45	Requirements & Design incl. Controls	3 mons	Thu 9/23/10	Wed 12/15/10
46	Data Cleansing of SASIDs	4 mons	Thu 12/16/10	Wed 4/6/11
47	Develop	4 mons	Thu 12/16/10	Wed 4/6/11
48	Test	3 mons	Thu 4/7/11	Wed 6/29/11
49	Data Verification	2 mons	Thu 6/30/11	Wed 8/24/11
50	Full Rollout	1 mon	Thu 6/25/11	Wed 9/21/11
51	<b>Implement CUPID Interfaces at Initial State Agencies</b>	<b>360 days</b>	<b>Thu 6/30/11</b>	<b>Wed 11/14/12</b>
52	CDE Master Data Management (Assign CUPID ID)	12 mons	Thu 6/30/11	Wed 5/30/12
53	CDHE Master Data Management (Match, Verify, Assign Unique ID)	6 mons	Thu 3/8/12	Wed 6/22/12
54	CDHS Master Data Management (Match, Verify, Assign Unique ID)	6 mons	Thu 5/31/12	Wed 11/14/12
55	Change Management	36 mons	Thu 7/1/10	Wed 4/3/13
56	Training	24 mons	Thu 6/2/11	Wed 4/3/13

## High Level Project Plan Continued (Provide):

ID	Task Name	Duration	Start	Finish
1	Project Planning and Management	720 days	Thu 7/1/10	Wed 4/3/13
5	Capture	720 days	Thu 7/1/10	Wed 4/3/13
41	Link	720 days	Thu 7/1/10	Wed 4/3/13
57	Provide	720 days	Thu 7/1/10	Wed 4/3/13
58	School View Portal Expansion	700 days	Thu 7/1/10	Wed 3/6/13
59	Identify Additional Architectural Enhancements	2 mons	Thu 7/1/10	Wed 8/25/10
60	Acquire and Configure Additional Infrastructure	2 mons	Thu 8/26/10	Wed 10/20/10
61	Enhanced School View Implementation	520 days	Thu 3/10/11	Wed 3/6/13
62	Student-Based Information (All Audiences: ... Principals, Administrators, Researche	200 days	Thu 3/10/11	Wed 12/14/11
63	Requirements and Design	3 mons	Thu 3/10/11	Wed 6/1/11
64	Develop	2 mons	Thu 6/2/11	Wed 7/27/11
65	Test	2 mons	Thu 7/28/11	Wed 9/2/11
66	Pilot	2 mons	Thu 9/22/11	Wed 11/16/11
67	Full Rollout	1 mon	Thu 11/17/11	Wed 12/14/11
68	Educator-Based Information (All Audiences...)	180 days	Thu 9/22/11	Wed 5/30/12
69	Requirements and Design	3 mons	Thu 9/22/11	Wed 12/14/11
70	Develop	2 mons	Thu 12/15/11	Wed 2/8/12
71	Test	2 mons	Thu 2/9/12	Wed 4/4/12
72	Pilot	1 mon	Thu 4/5/12	Wed 5/2/12
73	Full Rollout	1 mon	Thu 5/3/12	Wed 5/30/12
74	Program-Based Information (All Audiences)	120 days	Thu 2/9/12	Wed 7/25/12
75	Requirements and Design	2 mons	Thu 2/9/12	Wed 4/4/12
76	Develop	1 mon	Thu 4/5/12	Wed 5/2/12
77	Test	1 mon	Thu 5/3/12	Wed 5/30/12
78	Pilot	1 mon	Thu 5/31/12	Wed 8/27/12
79	Full Rollout	1 mon	Thu 8/28/12	Wed 7/25/12
80	Finance-Based Information (All Audiences)	180 days	Thu 7/26/12	Wed 3/6/13
81	Requirements and Design	1 mon	Thu 7/26/12	Wed 8/22/12
82	Develop	2 mons	Thu 8/23/12	Wed 10/17/12
83	Test	2 mons	Thu 10/18/12	Wed 12/12/12
84	Pilot	2 mons	Thu 12/13/12	Wed 2/6/13
85	Full Rollout	1 mon	Thu 2/7/13	Wed 3/6/13
86	Longitudinal Application Exchange (Apps for Democracy)	700 days	Thu 7/1/10	Wed 3/6/13
87	Define Architecture	1 mon	Thu 7/1/10	Wed 7/28/10
88	Acquire and Configure Infrastructure	2 mons	Thu 7/29/10	Wed 9/22/10
89	Requirements and Design incl. Controls	2 mons	Thu 9/23/10	Wed 11/17/10
90	Develop	2 mons	Thu 11/18/10	Wed 1/12/11
91	Test	2 mons	Thu 1/13/11	Wed 3/9/11
92	Pilot	2 mons	Thu 3/10/11	Wed 5/4/11
93	Implement Centralized Exchange Architecture	360 days	Thu 10/20/11	Wed 3/6/13
94	Student	3 mons	Thu 10/20/11	Wed 1/11/12
95	Educator	3 mons	Thu 3/8/12	Wed 5/30/12
96	Program	3 mons	Thu 7/26/12	Wed 10/17/12
97	Finance	3 mons	Thu 12/13/12	Wed 3/6/13
98	Change Management	36 mons	Thu 7/1/10	Wed 4/3/13
99	Training	24 mons	Thu 6/2/11	Wed 4/3/13

## B. COORDINATION WITH EXISTING SLDS GRANT

As described more fully in the next section, the Project Management Office within CDE's Information Management Systems unit will coordinate activities supported by this grant with the state's existing SLDS grant (2007-2010) and with other data system initiatives to assure a common vision, avoid duplication of effort, and leverage expertise and resources to their full potential. Staff, project management strategies, and leadership overlap both SLDS efforts. Applicant acknowledges that funds under this Recovery Act grant must be separately tracked from funds under other grants, including its 2007 SLDS grant. This program qualifies for OIT's Enterprise Governance Committee oversight (explained in Section IV), providing additional governance across the state enterprise and facilitating cross agency enterprise cooperation.

## C. MULTI-STATE COLLABORATION

Colorado supports CCSSO's LEARN initiative, which will promote unprecedented cross-state knowledge about educational performance and access to educational content. As an initial step in this collaborative effort, CDE has led multi-state adoption of a common student longitudinal growth measure and data visualization platform as used by the Colorado Growth Model. In addition to Colorado, several other states such as Massachusetts, Indiana and Arizona now use

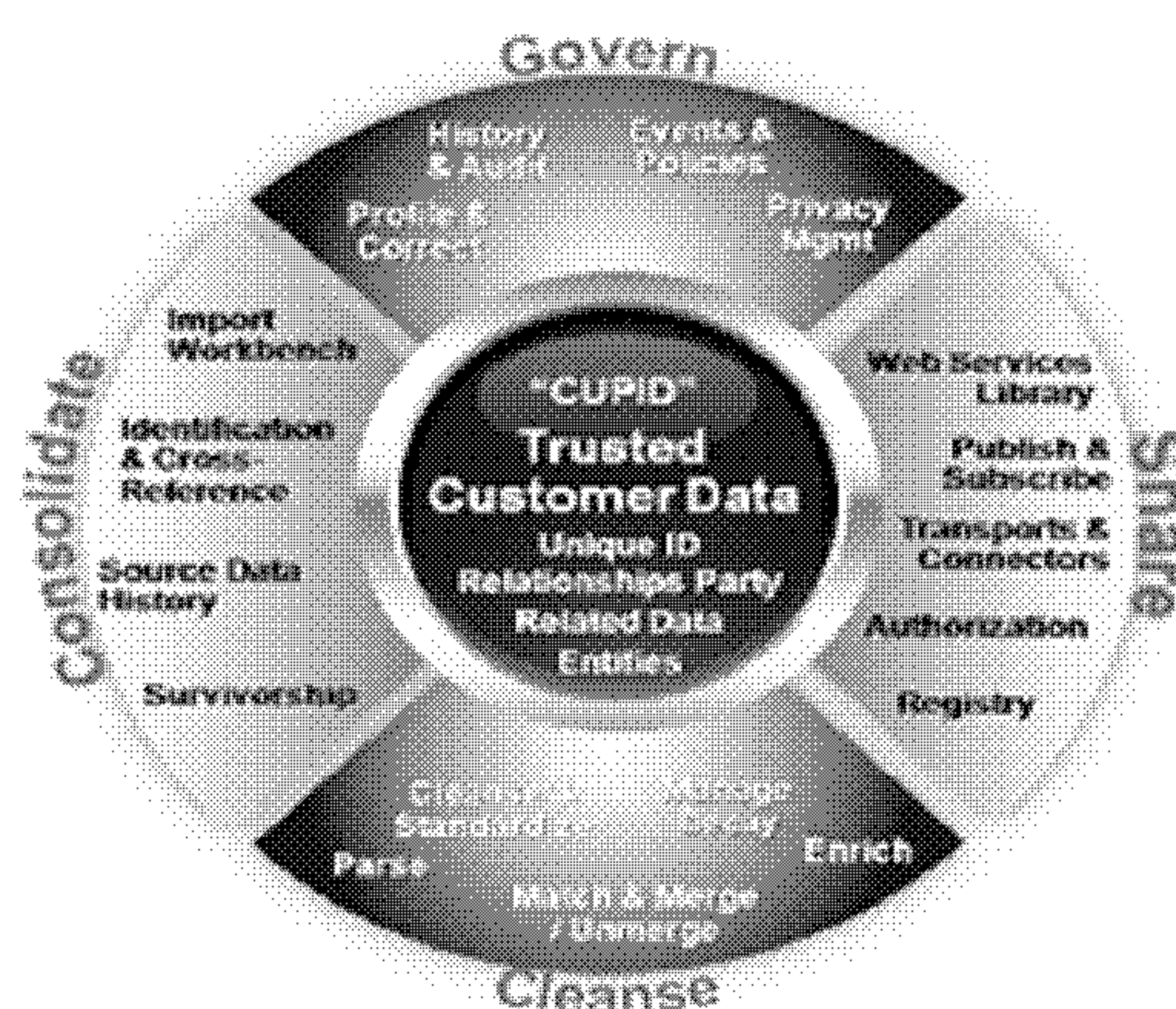
the growth percentile methodology developed for the Colorado Growth Model. Indiana and Arizona recently signed an agreement to adopt the data visualization tools employed by the Colorado Growth Model and will begin co-development of the Growth Model displays. Several other states are expected to join the co-development effort soon.

This collaboration makes it possible, for example, to evaluate the relative productivity of educational systems, (i.e., groupings of schools undergoing turnaround) in Colorado, Massachusetts, Indiana and Arizona as measured by student growth rates toward state standards. With the advent of common core standards and common assessments, such collaboration holds tremendous promise for building a breakthrough national awareness and improved discourse about education reform. Refer to Appendix A for the agreement that defines the outcomes of this collaboration. No SLDS grant funds are requested to directly implement this work.

#### D. MEETING TECHNICAL REQUIREMENTS

**Data Quality.** One of the most crucial components of a successful SLDS is a governance program that addresses data quality and integrity. Using data for analysis and application in instructional practice, decision-making and policy-making inherently requires trust of the data that are being studied, measured and analyzed. Characteristics of data quality include data specifications, duplication, accuracy, consistency and synchronization, timeliness and availability, ease of use and maintainability, data coverage and relevance. The master data management application shown in Figure 4 will provide the services to carry out the state’s already established data quality management program (refer to Section II.B.5).

**Figure 4. Master Data Management Application**



Additionally, an enterprise metadata registry will be implemented as part of the data management program. The purpose of an enterprise metadata registry is to establish a central point for data identification, standardization, and sharing. This ensures consistent use of the data assets and data resources across the state, facilitates easy mapping of data between computer systems, and lowers the costs of migrating to new systems, including service-oriented architecture. OIT will coordinate the agency data stewards and the input to the data dictionary to insure that at a minimum the following is accomplished:

- Each data element has a clear and unambiguous data element definition that is supported by the state agencies involved with the data.
- The origin of the data, i.e., the system of record, is identified for each element as well as the designated system for history, such as a data mart or data warehouse.
- The data stewards are identified for each data element.
- Each data element does not conflict with other data elements in the metadata registry.
- Each element defined as a code has clearly enumerated value definitions.
- The data element defined is still being used.
- The data element is being used consistently in various computer systems.
- Version control of the data elements is in use.
- Adequate documentation on appropriate usage and notes for the data elements.
- The usage of the data element in each data sharing effort is documented.

Data quality will improve because all departments will use the same definitions and standards.

The state's framework for data quality includes defining the requirements, inspection policies, measures, and monitors that reflect changes in data quality and performance. In addition to these steps, a data governance framework for data quality will be established. The governance tasks include:

- Engaging business partners from all stakeholder agencies to work with the data stewards and data quality teams.
- Identifying data ownership roles and responsibilities, including data governance board members and data stewards.
- Assigning accountability and responsibility for critical data elements and data quality management.
- Identifying key data quality areas to address and directives around these key areas.
- Synchronizing data elements across the lines of business and providing clear, unambiguous definitions, use of value domains and data quality rules.
- Developing metrics and continuously reporting on the measured level of data quality.

This framework will ensure that data quality becomes operationalized as part of agencies' business processes, and day-to-day operations of the SLDS. Most importantly, it will build the trust necessary for stakeholders to utilize the data and information in knowledge management.

**Privacy.** A fundamental tenet of both data sharing and privacy protection is ensuring that the data reported about an individual as part of a data or information sharing request is actually data about the individual being requested. The unique ID is designed to map agency identities to a master identifier that incorporates data cleansing and data quality functionality to guarantee an individual's identity against all other potential matches in the state. The unique ID is strictly architected to use the minimal set of attributes necessary to make de-duplication and uniqueness determinations on identities. Sensitive agency data (everything from HIPAA-sensitive to educational and individual benefits data) is retained at the agency level in agency repositories. Additionally, the state will be able to provide de-identified record-level P-20 data to research organizations for evaluations of policies and programs within the State.

The unique ID and the SLDS will be protected behind strong firewalls, and the state will implement a strong access and authentication and authorization model to provide security and protect privacy by ensuring that access to data in the SLDS is on a need-to-know basis. The provisioning system will leverage the unique ID directly, and use a roles-based method to control access to state systems. The provisioning systems will offer multiple authentication schemes depending on the level of protection required by the system and data. The model is flexible and can accommodate low (username/password) to high (certificate-based) assurance levels. A provisioning tool will assign the corresponding authentication and authorization capabilities to users according to their role and the value of the information that is being protected. This process will address compliance with FERPA, HIPAA and other federal and state regulatory requirements.

#### **E. ALIGNMENT OF TECHNOLOGY SOLUTIONS TO REQUIRED CAPABILITIES AND ELEMENTS**

As shown in the following table, the Project SchoolView™ solutions map directly to the required SLDS capabilities/elements contained in the RFA. They also meet the mandate of Colorado state law regarding cross department data interoperability.

**Table 3. Mapping of Project SchoolView™ Solutions to RFA Requirements**

<b>Required Capability</b>	<b>Solution Mapping</b>
P20 linkages	MDM and data hub functionality allow the mapping of agency specific IDs to a central data link across agencies that provides service to the P20 population.
Interoperability	The unique ID and/or its mappings can be extended to any number of state and federal agencies.
Educator-Student Link	Both educators and students have a unique ID and relationship can be made in a data model to conduct correlation analysis, including to program and financial data.
Educator certification, preparation details	Information about educator preparation and other HR data can be tracked by associating data with a unique ID at the agency and institution level.
Information for educator and parent decisions	Real time dashboards and other decision tools will be created to report on P-20 longitudinal data.
Data quality audits	MDM technology provides accurate and complete data associated with a unique ID. Auditing of agency specific data through the business intelligence layer is made easier by having a strong baseline identity of students and educators.
<b>Required Elements</b>	<b>Solution Mapping</b>
Unique statewide student identifier	A unique statewide identifier is used for all persons in Colorado.
Student-level enrollment, demographic and program participation information within the state and with other states	The common identifier and mappings across different agencies enables reporting on enrollment, demographic and program participation.

Student-level information about exit, transfer in, transfer out, dropout and completion of P-16 education programs	The business intelligence system will use the identity mapping between CDHS, CDE and CDHE to enable reporting on these types of events.
Capacity to communicate with higher education data systems	The same MDM and unique ID solution is shared by CDE and CDHE enabling sharing and mapping of data.
State data audit system assessing data quality, validity and reliability	Sophisticated data quality tools at the MDM and business intelligence layers of the solution ensure validity and reliability of data.
Yearly test records for individual students	All agencies providing educational services to students will continue to record test records within their systems. An aggregate record is created by linking IDs through the unique ID and business intelligence.
Information on students not tested by grade and subject	CDE can provide this report by aggregating school data through the unique ID.
Educator identifier system with ability to match educators to students	The unique ID coupled with business intelligence solutions will permit this matching and respective correlation analysis.
Student level transcript information, including information on courses, completed and grades earned.	A complete student transcript can be created by aggregating course and grade data from any educational institution and linking it through the unique ID. Common course codes and data standard support this linkage.
Student-level college readiness test scores	CDE and CDHE can provide this report by aggregating school data through the unique ID.
Data regarding the extent to which students transition successfully from secondary school to postsecondary education, including enrollment in remedial coursework	CDE and CDHE can provide this report by aggregating school data through the unique ID and reporting it through a business intelligence solution, including the Colorado Growth Model.
Data necessary to address alignment and adequate preparation for success in postsecondary education	All agencies with data relevant to P-20 education (including preschool and higher education) can aggregate data and report on correlations related to students' educational success by using the unique ID and its mapping capabilities.

#### IV. EFFECTIVE MANAGEMENT AND GOVERNANCE PLAN

##### A. OPERATIONAL CONTEXT

The Colorado General Assembly established the Government Data Advisory Board (GDAB) to assist Colorado's Chief Information Officer and Chief Data Officer in determining the state's data strategy, policies, standards and architecture. GDAB members also serve as a liaison from their communities of interest to the OIT regarding stakeholder needs and concerns; and, to their communities as key communicators regarding the state's progress, concerns and challenges. The

Education Data Subcommittee, a legislated subcommittee of the GDAB is charged with providing recommendations for the creation of a statewide comprehensive P-20 education data system.

OIT provides a mechanism to manage the connections among state agency systems, providing enterprise architecture, data governance and management that facilitate cross-agency collaboration. OIT is charged with overseeing technology initiatives at the state level to maximize efficiencies of service delivery in a cost effective manner through the application of enterprise technology solutions. Pursuant to state law, OIT implements the Enterprise Governance Committee (EGC) structure to provide senior governance for large-scale, multi-agency initiatives such as Project SchoolView™. This model has been effective in providing management expertise across the state by identifying risks, ensuring collaboration across agencies, and helping resolve critical issues. It has been a key component in the success of several multi-million dollar initiatives, including the Statewide Election and Registration System, the Colorado Benefits Management System transition, and the Colorado Integrated Tax Architecture.

Internal to CDE, the department recently accomplished major enhancements and expansions to its Information Management Services unit. The department employed its first Chief Information Officer, who is charged to oversee the department’s information management and data collection direction and staff, and to develop technology and data acquisition strategies that support the education reform agenda described above. Major tasks of the CIO relate to aligning disparate systems, reducing redundancies and instilling an enterprise-wide data management system.

The CIO hired an Enterprise Architect with strategic, tactical and operational responsibilities related to managing the Department’s information technology technical roadmap and landscape, specifically as it pertains to enterprise-scale applications/solutions. The CIO also hired a Project Manager to provide project management, resource planning, prioritization methodology and strategic planning to all IT efforts. All IMS projects are managed pursuant to a defined project management methodology and are cross-coordinated to eliminate duplication or redundancy, to avoid stove-pipe system development, and to ensure a cohesive state effort.

Figure 5 shows the project implementation structure for Project SchoolView™.

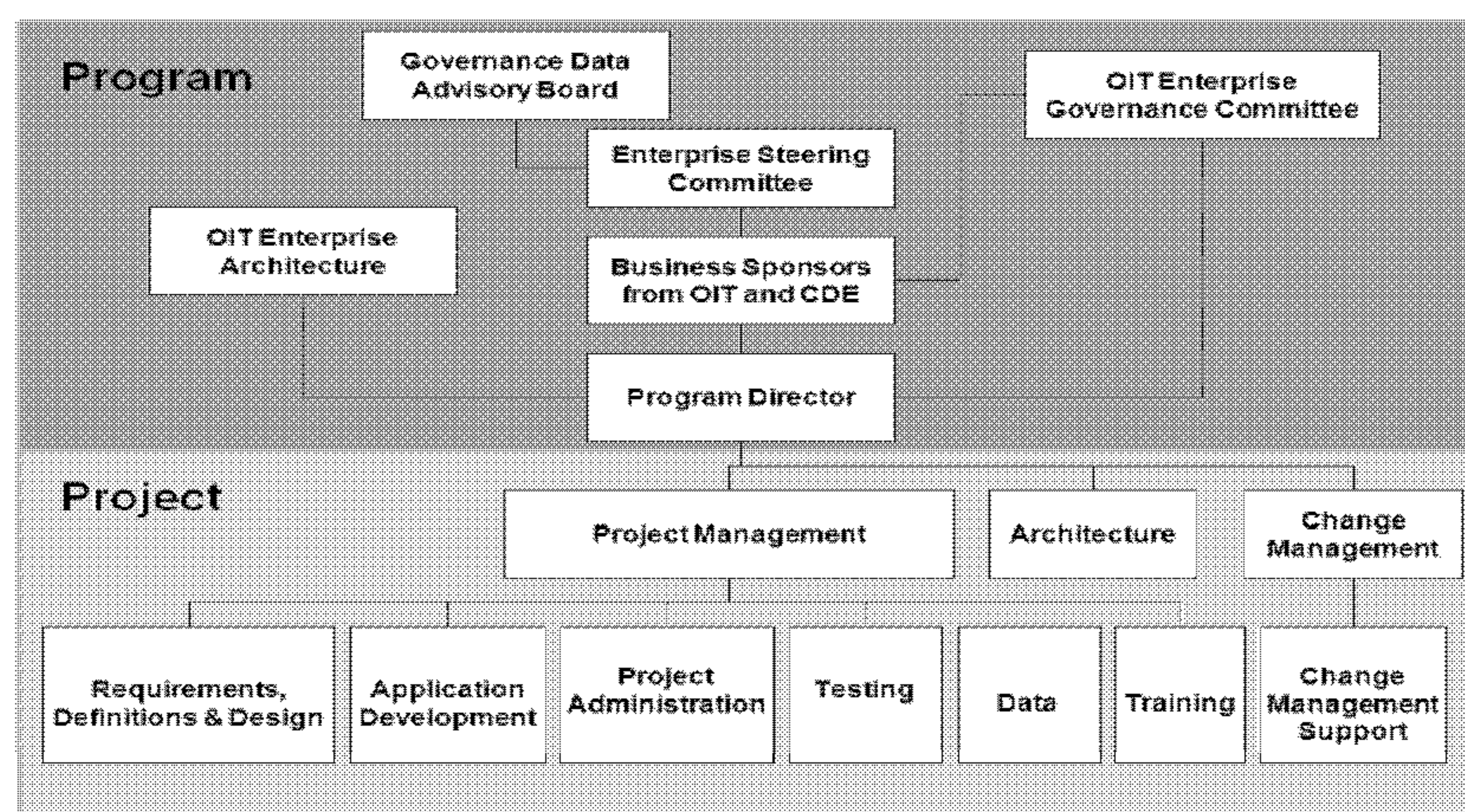


Figure 5

Figure 6 shows the broader context of operations and support within which Project SchoolView™ will be implemented. In addition to facilitating effective project management, change management and knowledge transfer, this structure supports sustainability of the work described in this grant application long after the grant term ends.

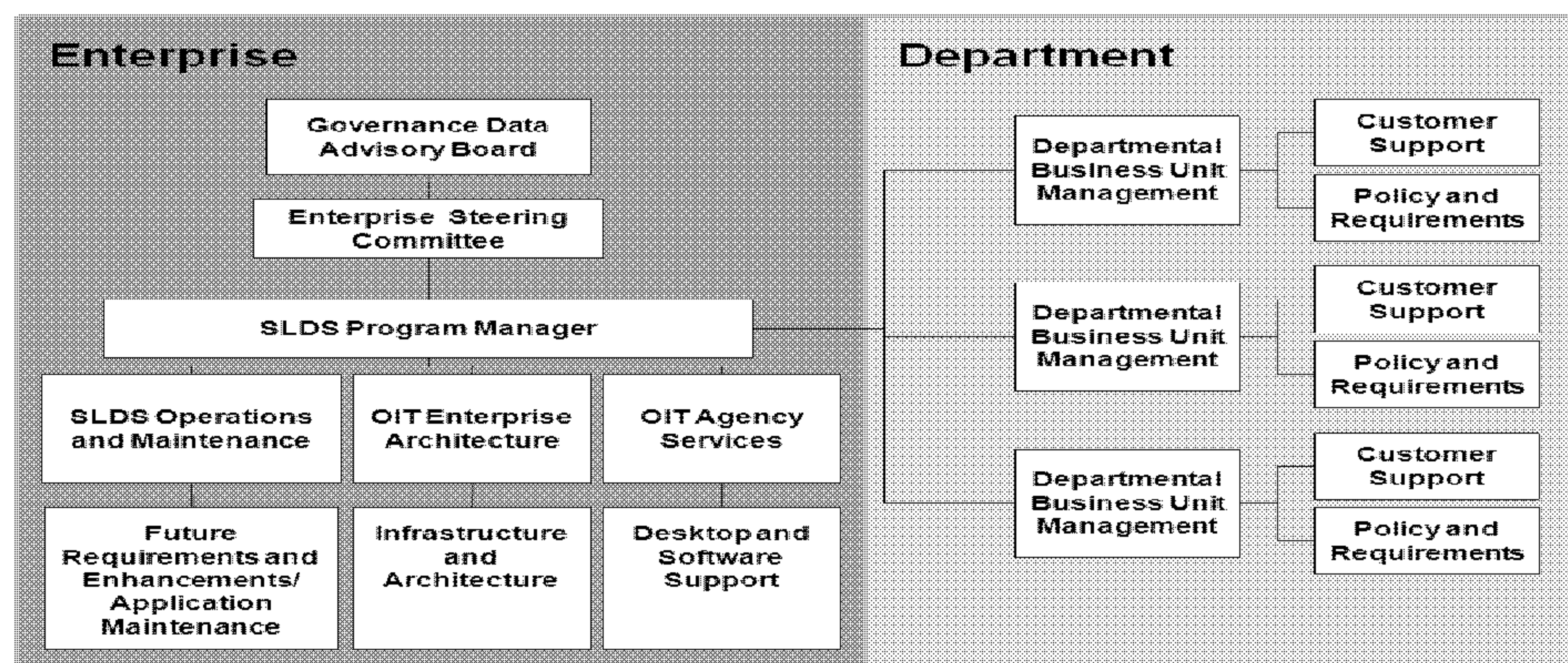


Figure 6

## B. PROJECT GOVERNANCE

The Steering Committee will provide strategic business guidance for risk mitigation; interact with the Executive Sponsors and the Program Manager to understand key deadlines, resource needs and deliverables; and ensure the project will serve the needs of stakeholders effectively and efficiently. Data governance issues will carry increased visibility and significance as the current SLDS is expanded to link to data systems of other state agencies. Issues related to data governance are discussed in Section III. The Steering Committee will be co-chaired by the Executive Sponsors, Robert Hammond, Deputy Commissioner, CDE and Leah Lewis, Enterprise Architect, OIT.

The cross-agency Steering Committee will include:

- Rich Wenning, Associate Commissioner, Office of Performance and Policy, CDE
- Dan Domagala, Chief Information Officer, CDE
- Matt Gianneschi, Director of Education Initiatives, Office of Governor Bill Ritter, Jr.
- Liz Aybar, Deputy Director of Education Initiatives, Office of Governor Bill Ritter, Jr.
- Micheline Casey, Chief Data Officer, OIT
- Jason Presley, Director of Information and Research, CDHE
- Ron Ozga, Chief Information Officer, Colorado Department of Human Services
- Jim Lynn, Agency Services Director, OIT
- TBD, Early Childhood Commission
- Jan Rose Petro, Education Data Accountability Committee (EDAC)
- TBD, Government Data Advisory Board's Education Data Subcommittee
- TBD, Colorado Council of Deans of Education
- Jami Goetz, Quality Teachers Commission
- TBD, LEA representative



EDAC and the Education Data Subcommittee are stakeholder groups that will be consulted during the project.

**Change Management.** The State of Colorado is embracing transformative social and organizational change. It will be imperative that both the project and the entire program leadership team be thoughtfully coached on change leadership throughout the implementation by the change management team. Areas of focus include but are not limited to: effective communication, resistance management, capable sponsorship, internal and external marketing. In addition, these leaders will be key participants in coaching and guiding the diverse stakeholder population through this transformative change. Therefore the SchoolView™ Program team will place an importance on the change management role ensuring it feeds both into the project team and the steering committee and out to the stakeholder population.

### **C. PROJECT MANAGEMENT**

Project SchoolView™ will reside in the Colorado Department of Education's IMS Unit, under the direction of Dan Domagala, the Department's Chief Information Officer. As described above, OIT will certify all projects and will facilitate the cross agency collaboration and linkages required to build and maintain a P-20 data system.

**Management Controls.** To ensure effective project management, the IMS Unit employs a project management framework that incorporates industry best practices. Each SLDS project will follow formal initiation, planning, monitoring and closing phases tracked using project management software.

- **Initiation.** This phase consists of capturing the scope of the project, identifying deliverables, obtaining executive sponsorship and securing vendors necessary for the planning and execution of the project and results in a project plan and schedule. Much of this work has already been accomplished through the grant development process.
- **Planning.** During this phase the business and functional requirements will be generated along with any updates to the overall project plan and schedule. The change management strategy will also be developed during this phase.
- **Executing/Monitoring.** During this phase multiple deliverables will be built and tested against the requirements. Once all testing is completed and Final Acceptance approved, the system is deployed to a production environment. Required training will occur in this phase as well.
- **Close out.** Once the system is in production, IMS will perform a scope verification with the vendor to ensure all required elements have been met. Lessons learned will be identified and captured for future application. Close out of contracts and final payments also will be performed in this phase.

### **D. TRAINING AND TECHNICAL ASSISTANCE FOR USERS**

Project SchoolView™ will reach its full transformative potential in a culture of data use when users have the knowledge and dispositions to apply data to decision-making, from instructional decisions at the classroom level, to programmatic decisions at the school level, to strategic

investment decisions at the state level. Building a culture of knowledge management in P-20 education, leveraged by cutting edge technology, is a primary focus of Colorado's Race to the Top Application.

For the SLDS grant, the user support emphasis will be on training and technical assistance that prepares users to navigate and interact with Project SchoolView™ at points and functions appropriate to their specific roles. CDE successfully implemented a large-scale training and technical assistance effort in conjunction with the launch of the Colorado Growth Model that can be replicated and expanded for this project. Delivery will be organized around a training the trainer model and will seek to engage and build the expertise of district and university information technology staff. Web-based seminars and video tutorials will provide additional learning opportunities available on demand. The first step in designing the content and delivery of training activities will be outreach to user groups to identify their concerns, needs, and preferences. Just as the attributes and functionality of Project SchoolView™ will be designed with the needs of stakeholder users in mind, so will training, user support and feedback reporting.

## V. PERSONNEL AND FINANCIAL RESOURCES

### A. PROJECT PERSONNEL

Table 3 describes the internal and external project team by role, responsibility, name/title and maximum amount of time that will be dedicated to Project SchoolView™. The project team has the qualifications and time commitments needed to implement Project SchoolView™ in accordance with the timelines set out in the project plan. The mix between state employees and contractors/consultants has not been fully determined. It is anticipated the project team will consist of approximately 19 full time equivalent resources in addition to the project management, change management and program team resources.

**Table 3. Project Personnel**

Role	Responsibility	Name/Title	FTE
Steering Committee	Provides tactical business guidance for risk mitigation. Interact with Sponsors and Program Director to understand key deadlines, resource needs, and deliverables. Ensures project will serve the communities and the customers effectively and efficiently	Various	10%
Project Sponsors	Provide strategy and vision; interact with stakeholders to understanding risk and options; determine funding and resource allocation; receive and escalate critical issues from project management	Robert Hammond, Deputy Commissioner, CDE Leah Lewis, OIT	5% 5%
Program Director	Management of the project at a strategic level. Provides a single point of accountability to deliver the project in accordance with the project commitment.	Dan Domagala, CIO, CDE	20%

Role	Responsibility	Name/Title	FTE
Change Management/Leadership	Management and coaching of change leaders and change agents to ensure the organization is prepared for, able to manage and sustain the change.	To be hired	100%
Project Manager, CDE	Develops detailed project plan and leads implementation of CAPTURE and PROVIDE initiatives	To be hired	100%
Project Manager, OIT	Develops detailed project plan and leads implementation of the LINK initiative	To be hired	100%
Enterprise Architect	Lead the development of single holistic enterprise architecture model from all architecture perspectives (Business Services, Business Processes, Information, Applications and Technology). Ensure the Enterprise Architecture is closely aligned to the Strategy, Operating Model and IT strategy, and satisfies all enterprise architecture requirements	Leah Lewis, Enterprise Architect, OIT	30%
		Dee Abueldahab, Enterprise Architect, CDE	40%
Program Administrator	Provides support to the program director and project managers such as project plan tracking and maintenance, detailed budget tracking and procurement support.	Lisa Bradley, Project Manager	50%
Training	Design training plan, and training tools and facilitate training end users	To be hired	100%
Requirements Definition & Design	Lead functional design of business solutions	To be hired	100%
Applications Development/ Systems Maintenance	Design and build technical solutions to the requirements Interact with designers for guidance and QA for testing	To be hired	25%
Quality Assurance/Testing	Develop business scenarios with designers SMEs and developers to identify issues Develop test scripts based on business scenarios defined by designers and test solutions in a test environment and report results	To be hired	100%
Data Services/User Support	Resolve user issues when contacted Proactively follow-up with the users for quality assurance. System and application administration	Chris Edmundson, CDE	10%
Data Base Administrator	Oracle database administrator	Jeff Stevenson	10%

Role	Responsibility	Name/Title	FTE
Data Warehouse	Coordination of warehouse expansion and EdFacts reporting	Keith Glenn, Data Warehouse Supervisor	35%
	Database modeling and architecture	Manilal Bhoraniya	20%
Data Reporting/ Business Intelligence	Administer and develop SchoolView™ reports	Dean Bixler	25%

Appendix B contains resumes of key personnel that demonstrate expertise and backgrounds commensurate with the responsibilities they will undertake to implement Project SchoolView™.

## B. SUSTAINABILITY AND FINANCIAL RESOURCES

The state has committed \$1.1M for the Educator ID program and will identify additional funding through legislative processes and private funding sources to ensure longer term sustainability. As evidenced by the letters of support from state leaders and stakeholders (refer to Appendix D), solid bipartisan agreement exists among Colorado educators and policymakers that data sharing and knowledge management are critical to achieving dramatically improved student outcomes. This consensus priority will be reflected as the General Assembly establishes and as the Governor and state agencies administer the state education budget in coming years.

With an annual budget of \$3.5 million dollars, the Information Management Services unit provides technology support for every working unit and individual person at the Colorado Department of Education. The 35 person IMS team is comprised of five collaborative teams that work together to design and develop customized solutions to meet department needs, including customization and installation services for purchased software. Two particular aspects of the unit are noteworthy in relation to this grant application. First, the 2007 SLDS funds helped to rapidly expand an existing data warehouse and build-out an extensive extract-transform-load (ETL) process that fully automates the movement of data between databases and into specified file formats for Federal reporting (EDEN/EdFacts) or State reporting (SchoolView™). In the past two years, Colorado has funded a full-time data dictionary analyst, an ETL programmer, and a Chief Information Officer to sustain and improve upon these investments. Second, recent state legislation enabled the shifting of \$280,000 in annual report-card printing costs towards 2.7 annual full time employees to sustain and expand the SchoolView.org information portal. In all, the trained and dedicated IMS team, in full collaboration with the OIT, is poised to put federal funds to work and staffed to sustain solutions.

Moreover, interagency data sharing is a long-term initiative in the State that goes far beyond the education sector. Through legislation mentioned previously in this document (and summarized in Appendix A), Colorado has built the foundation for sustainability of this initiative across state government services. Under OIT's leadership, the primary architectural pieces in the *SchoolView™ - Link* strategy – the statewide unique identifier, enterprise service bus, and access and authentication management – will continue to be developed and implemented across other business sectors of state government. SLDS dollars will not pay for these implementations.

However, as other agencies are able to pay for and migrate to the services in the *Link* strategy, the maintenance costs for CDE's portion of the statewide implementation will be reduced. OIT will develop an appropriate cost-allocation model to charge all state agencies utilizing the services. Costs for each agency will be reduced over time as more agencies take advantage of the services and the costs are allocated among more partners.

As detailed in the Budget Narrative, the State of Colorado is requesting \$17,886,993 to complete the work proposed. Each line item in the budget is closely aligned with the goals and measurable outcomes of Project SchoolView™, as outlined in Section II of this application. CDE and OIT are dedicated to delivering a positive return on this financial investment and the management controls in place will ensure critical strategic initiatives are delivered within this budget.

# **Project Narrative**

## **Project Narrative - Appendix A, Optional Attachments**

Attachment 1:

Title: **Project Narrative - Appendix A** Pages: **9** Uploaded File: **SLDSAppendixA-FINAL.doc**

## APPENDIX A: OPTIONAL ATTACHMENTS

- Overview of Colorado P-20 Education Alignment Legislation
- Pictures of Colorado's Data System – Current and After Project SchoolView™
- Multistate Collaboration: Copy of Agreement for a Collaborative Effort to Create Common Data Visualizations that Build Upon the Colorado Growth Model
- Participants in Colorado's SLDS Summit and Organizations/Agencies Consulted in Development of SLDS Grant Application

## Overview of Colorado P-20 Education Alignment Legislation

*SB08-212 - Preschool to Postsecondary Alignment Act (Colorado Achievement Plan for Kids, CAP4K)* establishes the vision of a seamless education system in Colorado from preschool to postsecondary/workforce (P-20) and creates a performance-based eligibility to higher education. Pursuant to this law, the State Board of Education recently adopted definitions of school readiness and (in conjunction with the Colorado Department of Higher Education) postsecondary and workforce readiness (PWR) that are guiding the development of new statewide model content standards. This will mark the first revision of these standards since their adoption in the mid-1990's. New methods of assessment aligned with the new standards will follow. CAP4K also prescribes a new method of awarding high school diplomas that indicate students have achieved postsecondary and workforce readiness and seeks to align college admission requirements with new high school standards. Colorado also looks forward to being able to adopt standards that are consistent with the emerging common core. The Act creates a pilot program for PWR assessments that will inform the selection of the postsecondary and workforce planning, preparation and readiness assessments to be administered statewide. At the other end of the spectrum, the state's youngest learners will receive individual readiness plans that address the skills and knowledge areas in which they need assistance to make progress toward school readiness. Earlier legislation (HB 08-1364) charged the state with assigning state assigned student IDs to students enrolled in publicly funded early childhood education programs. The legislation identifies requirements for reporting on standards, assessment, and postsecondary metrics.

*HB 09-1065 (Educator Identifier System Act)* directs CDE to develop the state's first system to assign unique identifiers for all educators, which can be used to match teachers with student outcomes. The act envisions a system that can link teachers, students, and educator preparation programs tracking the cycle from teacher preparation to classroom performance to impact on student achievement. Information gathered by the system will be used to study the "teacher gap," to evaluate teacher training and development programs and identify best practices, to study teacher mobility and retention issues, and to recognize and reward individual teachers. The system must be capable of assigning unique, secure, and confidential identifiers for all teachers and of reporting specified teacher-related metrics. Funding for the development and implementation of the system is dependent on securing outside gifts, grants or donations.

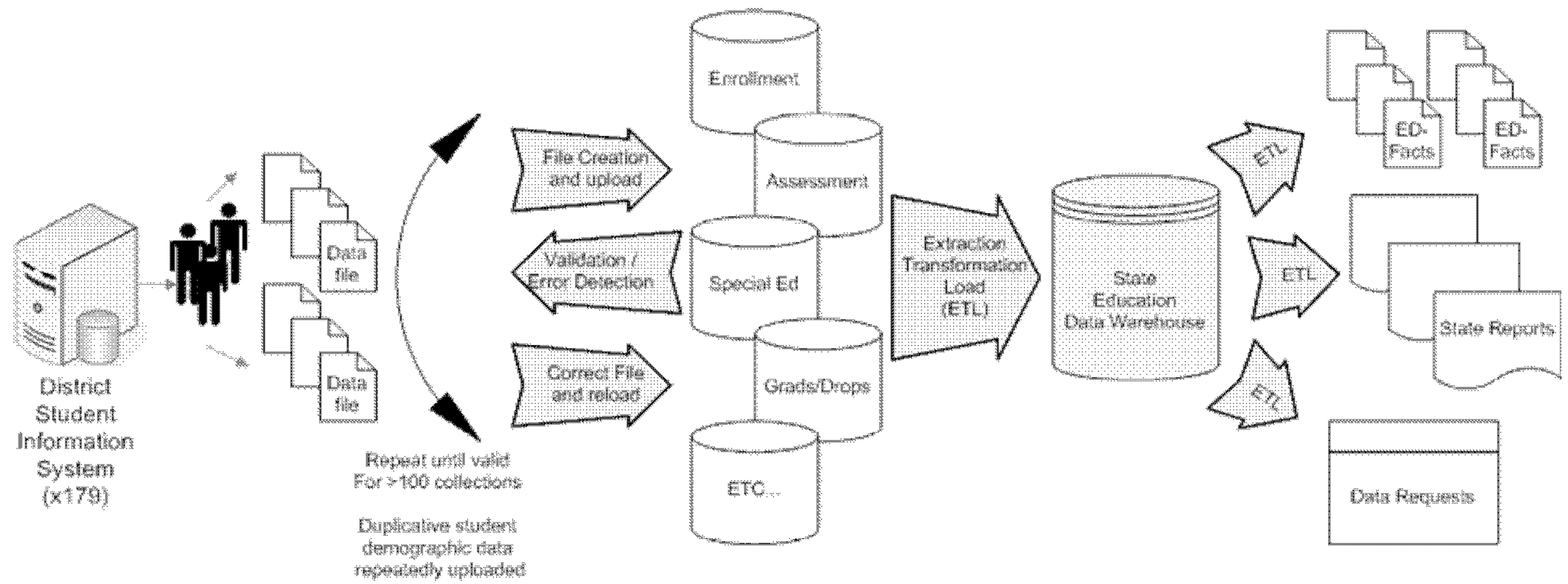
*SB 09-163 (Education Accountability Act of 2009)* aligns conflicting accountability systems through common performance indicators, enabling a single accountability system for state and federal purposes grounded in the Colorado Growth Model; enhances oversight of improvement strategies for low performing districts and schools; and creates a fair, clear and more effective cycle of support and intervention. Most relevant to this grant, the legislation also modernizes and aligns reporting through application of technology and improved public disclosure and access. The Act directs CDE to deploy a Web-based portal (known as SchoolView™) that displays information on student performance, postsecondary readiness and other performance indicators. The portal also must report school-level information about student enrollment, completion rates and mobility rates and support analysis of public school expenditures and program characteristics at different levels of the system (school, district, state). Additionally, the portal must have the capacity to deliver instructional advice and content supported by formative



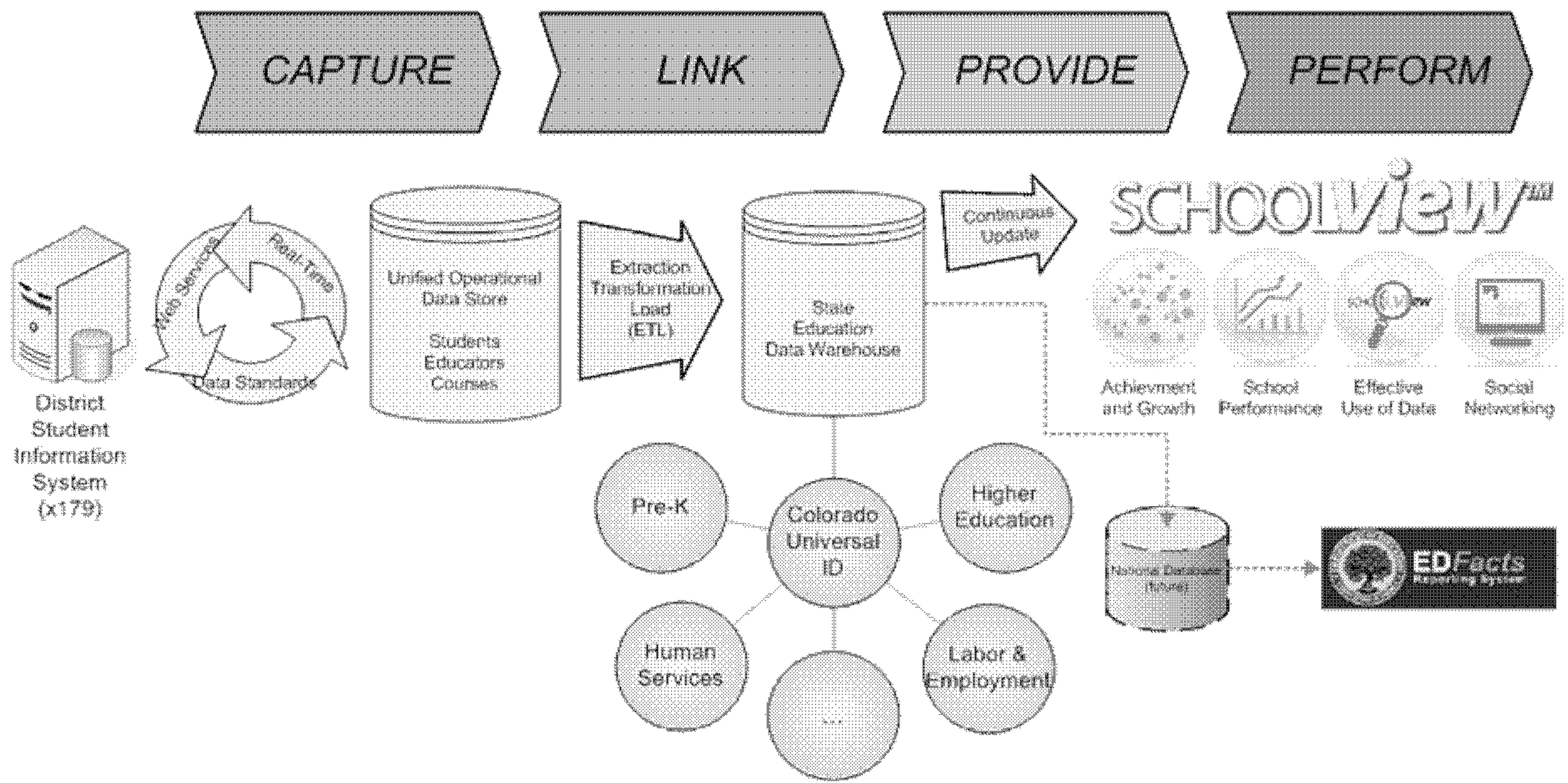
assessment data, to connect teachers across the state, and to enhance educators' capacity to use data and manage knowledge.

*SB 09-1285 (Creation of a Data Advisory Board)* created the state's first Government Data Advisory Board and a 15-member Education Data Subcommittee to implement the state's interdepartmental data sharing protocol and improve data sharing practices between and among state departments, school districts, postsecondary institutions, non-profit organizations, and professional researchers. The Education Data Subcommittee is tasked to provide recommendations to the State Chief Information Officer regarding appropriate information technology and reporting formats for education data. This legislation builds on HB 08-1364, which authorized the state's executive branch departments to share unit-level records and charged the Office of Information Technology with creating a state-level interdepartmental data sharing protocol.

# K-12 Data Process: Current



# P-20 Data Flow: Future



# State Collaboration: Longitudinal Data Systems, Data Visualization, Research and Development

## Agreement for Execution - Effective Date: November 2, 2009

The terms on these two pages outline the initial agreement for a collaborative effort to co-locate state longitudinal growth data sets for the purpose of creating common data visualizations that build upon the Colorado Growth Model.

- 1. *Agreement to Participate.*** Each Chief State School Officer signs on to the collaborative research and development effort and agrees to the participation of the Chief's designee, chief information officer, and state assessment director or director of research and evaluation.
- 2. *Common Longitudinal Growth Measure.*** Each state agrees to calculate growth percentiles in the same manner using R (programming language) to allow common cross-state comparisons and data visualization development related to normative and criterion-referenced growth.
- 3. *Common Display Platform.*** Each state agrees to use the Colorado Growth Model Version 1.0 or 1.5 display layer as an initial common visualization platform.
- 4. *State Branding.*** Each state may rebrand the display layer (e.g., "The Indiana Growth Model") and will provide mutually agreed upon attribution to Colorado and the National Center for the Improvement of Educational Assessment.
- 5. *Common Development Environment.*** To the extent practicable, each state agrees to load its longitudinal data set into a common, standardized data storage environment with appropriate security. This storage environment may be a cloud-based, virtual environment. The purpose is to permit common cross-state enhancement of the data visualization tools by the application developers. The application developers for Versions 1.5 and 2.0 will be the Colorado Department of Education, the National Center for the Improvement of Educational Assessment, and Universal Mind.
- 6. *Enhancements to the Display Layer.*** Each state agrees to collaborate in the development of a common Version 2.0 of the Growth Model Display Layer. Such modifications will include, but not be limited to, postsecondary metrics, multi-year visualization and animation, inclusion of teacher identifiers, multiple axis selection, enhanced mapping functionality. Each state may fund the development of different enhancements of the display layer. For example, a state may fund development of displays incorporating unique teacher identifiers and interim assessment data. Enhancement priorities will be established through consensus among the participating states.
- 7. *Modifications Shared.*** Each state agrees to collaborate in, and contribute know-how and financial resources to, the development of modifications and enhancements, which will be shared freely among each participating state, subject to the Creative Commons Attribution-Non-Commercial-Share Alike 3.0 Public License (<http://creativecommons.org/licenses/by-nc-sa/3.0/legalcode>).

8. **Communications and Publicity.** Each state will collaborate on communications and publicity related to the collaborative effort, including an initial press release announcing the agreement.
9. **Race to the Top and SLDS.** Pending each state's determination of the success and viability of the effort, each state agrees to include language in its Statewide Longitudinal Data Systems (SLDS) Grant and Race to the Top Proposal referencing the collaborative effort as part of the invitational priority related to enhancements of longitudinal data systems and include a budget item to support the collaborative.
10. **Collaboration with CCSSO's LEARN Effort.** Pending each state's determination of the viability of the proposed CCSSO effort, each state agrees to associate this collaborative effort with the LEARN effort. In doing so, each state agrees to request that CCSSO make funding from the State Education Data Center available to maintain and enhance the initial collaboration, including funding for a common, standardized storage environment.

The undersigned parties agree to the terms outlined above.

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Dwight D. Jones, Commissioner, Colorado Department of Education

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Tony Bennett, Superintendent of Public Instruction, Indiana Department of Education

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Tom Horne, Superintendent, Arizona Department of Education

### **Colorado SLDS Summit Participants (October 14, 2009)**

- Rich Wenning, Associate Commissioner, Office of Performance and Policy, CDE
- Dan Domagala, Chief Information Officer, CDE
- Jami Goetz, Quality Teachers Commission
- Nina Lopez, Director of ARRA, CDE
- Lisa Medler, Federal Program Administration, CDE
- Micheline Casey, Chief Data Officer, OIT
- Jeremy Felker, Director, Instructional Data Reporting Office, Jefferson County School District
- Lisa Bradley, Project Manager, Information Management Systems Unit, CDE
- Liz Aybar, Deputy Director of Education Initiatives, Office of Governor Bill Ritter, Jr.
- Elliott Asp, Assistant Superintendent, Performance Improvement, Cherry Creek School District
- Ed Freeman, Chief Information Officer, Denver Public Schools
- Shelley Kooser, Chief Information Officer, Academy School District 20
- Jody Ernst, Director of Research and Evaluation, Colorado League of Charter Schools
- Linda Barker, Colorado Education Association
- Jason Presley, Director of Information and Research, CDHE
- Julie Carnahan, IT Training Leader, Telstra
- Jerry Taylor, Application Development Manager, CDE
- Julie Siwanowicz, Enterprise Architect, CDE
- Julie O'Brian, Director, Center for Transforming Learning & Teaching, University of Colorado Denver
- William Browning, Rebound Solutions Consulting
- Lori Bowers, Colorado Pre & Kindergarten Program Director, CDE
- Nick Ortiz, Colorado Preschool Program & Results Matter Data
- Nan Vendegna, Early Childhood Initiatives, CDE
- Ron Ozga, Chief Information Officer, Colorado Department of Human Services
- Elizabeth Groginsky, Director, Adams County Head Start
- William Bonk, Research and Evaluation, CDE
- Renelle Darr, Insight Consulting
- Jan Rose Petro, Educational Data Advisory Council
- Josh Allen, Denver Public Schools
- Scott Lee, Wyant Data Systems
- Dale McCall, Centennial BOCES
- David Gestner, Colorado Department of Labor and Employment
- Lisa Escarcega, Chief Accountability and Research Officer, Aurora Public Schools
- Mike Miles, Superintendent, Harrison School District 2
- Rick Hammans, School Board Member, St. Vrain School District
- John Knapp, School Board Member, Rocky Ford School District

### **Organizations/Agencies Consulted in Developing SLDS Grant Application**

- Colorado Early Childhood Commission
- Colorado Department of Higher Education

- Colorado Department of Human Services
- Colorado Department of Labor and Employment
- Colorado Department of Revenue
- Colorado Department of Corrections
- Education Data eXchange Council
- Governor's Office of Policy and Research
- P-20 Education Council
- Longitudinal Data Work Group, Race to the Top
- Colorado Association of School Executives
- Colorado Education Association
- Colorado Association of School Boards
- Governor's Data Advisory Board
- Education Subcommittee of the Governor's Data Advisory Board
- Education Data Advisory Committee
- Colorado Department of Education Leadership
- School District Chief Information Officers

# **Project Narrative**

## **Project Narrative - Appendix B Resumes of Key Personnel**

Attachment 1:

Title: **Project Narrative - Appendix B** Pages: **17** Uploaded File: **SLDS AppendixB-FINAL.doc**



## APPENDIX B: RESUMES OF KEY PERSONNEL

### **Robert Hammond-Deputy Commissioner of Education – Executive Sponsor**

Robert Hammond has served as Deputy Commissioner since July 1, 2008. Before then, Mr. Hammond served the Boulder Valley School District as Chief Operations Officer for Administration and Operations beginning in January 2001, after serving as Associate Superintendent for Administration and Operations with the Wichita Public School District in Wichita, Kansas for many years. Mr. Hammond also held positions as Senior Vice President of Farm Credit Services in Wichita, Kansas, Assistant City Manager of Norman, Oklahoma, City Manager of Oskaloosa, Iowa, and Assistant City Manager of Parsons, Kansas before joining the public education arena. He received a Bachelor of Arts in psychology and sociology at Baker University, Baldwin, Kansas, in 1972. Mr. Hammond also holds a Master's Degree in Public Administration, Urban Management from the University of Kansas, Lawrence, Kansas, 1977.

## **Richard Wenning**

### **Professional Experience**

**Associate Commissioner, Colorado Department of Education (Denver, CO) 2008 to present.** Leads CDE's public policy development and the design and implementation of Colorado's educational accountability system, including the Colorado Growth Model. Responsible for the design and implementation of professional development associated with growth-based summative and interim performance evidence. Leads CDE's national policy advocacy work on the reauthorization of the Elementary and Secondary Education Act.

**Vice President, Quality and Accountability, Colorado League of Charter Schools (Denver, CO) 2003 to 2008**

Led the League's Quality and Accountability Division, which supports effective accountability and performance management policies and practices among charter schools in Colorado and the nation. Helped charter schools and their authorizers effectively gather, analyze, report, and use data on school and student performance. Managed the League's Accountability Program, which includes self-studies and school reviews, analysis of longitudinal growth in student achievement, data management support, and accountability policy development.

Served as an Executive on Loan to the Superintendent of Denver Public Schools and led the design of the district's School Performance Framework and helped strengthen the district's performance management practices. Served in a similar capacity at the Colorado Department of Education and led the design of the Colorado Growth Model. Participated in an advisory panel on longitudinal growth models convened by the U.S. Secretary of Education.

**President, Education Performance Network and Senior Vice President, New American Schools (Alexandria, VA) 2001 – 2003**

Established and led a division of the national nonprofit school design organization, providing consulting services to build the capacity of networks of new schools and the organizations and agencies that support and authorize them. The Division's services focus on helping networks of schools thrive at scale by enabling their educational, organizational, and financial viability. Specific services include (1) accountability and performance management, (2) new school formation and leadership development, and (3) teaching and learning designs.

**Founder and Managing Member, Choice Strategies Group LLC (Washington, D.C.) 1998 - 2001**

Founded and led a policy research and consulting firm focused on school design support and accountability-related information and tools. Provided services in (1) accountability and performance management, (2) school formation and implementation; (3) comprehensive school designs; and (4) special education. Clients included charter school developers, operators, resource centers, and authorizing agencies, as well as local and national organizations. (Acquired by New American Schools in 2001.)

**Director of Educational Accountability, District of Columbia Public Schools (Washington, D.C.) 1997 - 1998**

Directed the D.C. Public Schools' student assessment, pupil accounting, and research and evaluation departments. Measured educational outcomes including student achievement, student attendance, graduation, and dropout rates. Oversaw district-wide administration of the Stanford-9 Achievement Test. Developed and implemented new processes to conduct an accurate official enrollment count. Testified before Congress and the D.C. City Council.

**Senior Policy Advisor for Congressional and Intergovernmental Affairs, District of Columbia Public Schools, Office of the Chief Executive Officer (Washington, D.C.) 1997**

Formulated and implemented legislative and intergovernmental strategy for the Chief Executive Officer, including a successful \$36.9 million supplemental appropriations request to Congress. Prepared all testimony provided by the CEO before Congress and the D.C. City Council. Led implementation of D.C.'s charter school legislation, including activities related to the Federal charter schools grant program, facilities disposition policy, and per-pupil payments.

**Clerk, United States Senate, Committee on Appropriations, Subcommittee on the District of Columbia (Washington, D.C.) 1996 - 1997**

On behalf of the Committee Chairman, oversaw drafting and passage of the District of Columbia provisions of the FY 1997 omnibus appropriations bill, including legislation (1) privatizing the Student Loan Marketing Association and the College Construction Loan Insurance Association, resulting in \$40 million in proceeds for D.C. Public Schools' facilities repairs; (2) transferring responsibility and funding for school facility repairs to the D.C. Financial Control Board and the General Services Administration; (3) expanding the Congressionally established Control Board's authority over finance, personnel, and disposition of unused school property; and (4) amending provisions on charter schools to strengthen approval and oversight processes.

**Professional Staff, United States Senate, Committee on Appropriations, Subcommittee on Labor, Health and Human Services, and Education (Washington, D.C.) 1995 - 1996**

Managed appropriations accounts for charter schools, vocational and adult education, higher education, student financial assistance, and employment and training; participated in mark-ups, floor action, and conference proceedings for FY 1995 and FY 1996 appropriations bills. Prepared legislation (1) amending the Goals 2000: Educate America Act; (2) maintaining the Job Corps as a national program; and (3) authorizing the establishment of charter schools in the District of Columbia. Prepared numerous public statements for speeches and hearings.

**Senior Policy Analyst, United States Government Accountability Office, Education and Employment Issue Area (Washington, D.C.) 1987 - 1995**

Planned and managed studies on education policy issues including: (1) Title I Accountability, (2) private management of public schools, (3) charter schools, (4) school-based management and budgeting, (5) discriminatory ability grouping in public schools, and (6) effective schools programs. Prepared testimony for congressional hearings. Instructor in GAO's Training Institute for Evaluation Approach and Methodology Selection. Joined GAO as a Presidential Management Intern.

## **Daniel Domagala – Chief Information Officer**

### **Summary**

Information Technology Professional with over twenty years of progressive managerial and technical experience. Recent specialization in Data Warehouse design, architecture, and leadership. Other expertise includes systems analysis and design, applications development, data modeling, information security, and database administration.

### **Business Experience**

**Colorado Department of Education** Denver, Colorado 2004-present  
*Chief Information Officer*

- Direct the thirty-person Information Management Services unit. Provide leadership and direction for application development, business intelligence, data services, and network/database administration teams. Oversee budget and personnel decisions. Determine priorities and develop project plans while establishing an enterprise-wide technology vision for the Colorado Department of Education.
- Project Director for Colorado's \$4.2 million dollar Statewide Longitudinal Data System grant program. Initiated in 2007, this nationally acclaimed effort has rapidly expanded Colorado's education data warehouse to support alignment of data for performance management and leading-edge data visualization tools.
- Directed the design, development, and implementation of the Colorado Growth Model interface. This advanced web 2.0 application has been successfully deployed in school districts across the state, leading to detailed graphical representation of individual student academic growth and achievement.
- Managed and provided leadership for data warehouse team, guiding architecture, ETL, data validation, and business intelligence tasks. Directed and led the annual effort of producing and distributing statewide School Accountability Reports for all public K-12 schools in Colorado, accommodating legislative reporting mandates while providing parents and taxpayers with important school performance information.
- Implemented Cognos to provide a query window into the data warehouse and allow detailed analysis via customized reports and cubes. Replaced antiquated OracleReports and Discoverer infrastructure with a web-based Cognos solution, providing timely data and quality information to educational support units and local school districts.

**Cendant/Trip Network, Inc. (cheaptickets.com, trip.com)** Englewood, Colorado 2000-2004  
*Sr. Data Warehouse Architect/Warehouse Technical Lead, Business Intelligence*

- Conceptualized, designed, and led development of an enterprise data warehouse from the ground up, for on-line travel agency Trip.com, integrating customer profile data with travel transactions, financial records and website click-stream data.
- Integrated a second on-line agency (cheaptickets.com) into existing infrastructure, accommodating 25 million new customers and handling a ten-fold increase in search and purchase transactions, while also guiding expansion of Business Intelligence group from 2 members to 11.
- Introduced Brio as a data delivery tool, providing marketing, finance, and business analysts

an effective window into the warehouse data. Recruited and guided report developers to meet increasing demands for business intelligence.

- Constructed, implemented, and eventually led the development of hundreds of data Extraction-Transformation-Load (ETL) routines using DataStage and Informatica. Created ETL standards and automated nightly warehouse data processing, including leading and scheduling work of three ETL developers.
- Continuously evolved and tailored the enterprise data warehouse to keep pace with shifting business requests, new data sources and targets, and changing management teams. A flexible architecture built on conformed dimensions and single-grain facts provided a solid foundation capable of growing with the business.

**Jato Communications** Denver, Colorado

Feb 2000-Oct 2000

**Data Architect**, Operations Support Systems

- Designed and deployed enterprise-wide data warehouse, integrating data from disparate telecommunications systems and databases into a centralized repository. Incorporated dimensional modeling techniques, Sun hardware, Oracle database technology, and Oracle's Warehouse Builder software.
- Administered Oracle database systems including billing, order management, and data warehousing. Responsible for defining/implementing database hardware and software requirements related to purchased and developed applications.

**IHS Energy Group (formerly Petroleum Information/Dwights)** Denver, Colorado 1994-2000

**Database Analyst**, worldwide products

- Designed world's largest independent oil & gas data warehouse, effectively handling information on 3.2 million active and historic wells along with 2.8 million producing properties.
- Created data structures, validation routines, and relational dependencies to house massive amounts of oil and gas related exploration and production data.
- Designed and developed a commercial Internet-based application to browse and report oil and gas information. Devised a de-normalized dimensional-based model to improve data query performance and simplify program code for this and other database applications.
- Partnered with international offices and external organizations (such as the Public Petroleum Data Model association) to standardize and streamline data storage and retrieval, ultimately benefiting the entire oil and gas industry.

**CONOCO INC.**, Houston, Texas

1989-1994

**Systems Analyst**, Upstream Business Solutions

- Led development and implementation of million-dollar global property information system designed to guide executive management in portfolio investment decisions. Managed implementation phase of project, directing responsibilities for team members.
- Implemented a customized dual-language financial system in Moscow for a \$375 million Russian joint venture project. The system was a key component in this pioneering Russian/American petroleum development partnership. Trained Russian co-workers in the use and maintenance of the system.
- Installed and configured Oracle/UNIX based database in Oklahoma City division office, providing client/server application access for 200 employees. Teamed with local staff to

provide dependable database administration and application support.

**HEWLETT-PACKARD**, Fort Collins, Colorado 1988-1989

*Programmer Analyst - Intern*, Information Systems Department

- Provided Local Area Network (LAN) Administration to PC users throughout 2,000 user complex, effectively tying together PC workstations to allow sharing of software tools.

## **Education**

**M.B.A.** University of Colorado at Denver 1999

**B.Sc.** Computer Information Systems, Colorado State University 1989

Professional Training includes:

- Cognos ReportNet, Cognos Corporation
- Informatica Boot-camp, Core Integration Partners
- Data Warehouse World Conference, The Data Warehouse Institute
- Oracle Web Application Server, Oracle Corporation
- Oracle Database Administration, SageLogix/Oracle Corporation
- Introduction and Advanced UNIX, Miaco Corporation
- Oracle PL/SQL, Performance Tuning, TUSC, Inc.

Contributing Member of Education Information Management Advisory Consortium (EIMAC), a service of the Council of Chief State School Officers (CCSSO)

Frequent presenter for the National Center of Education Statistics (NCES) annual Management Information Systems Conferences

## **Expertise**

Relational Databases: Oracle, Sybase, SQLServer, DB2

Modeling Tools: QDesigner/PowerDesigner, ERWin, Oracle Designer

ETL: Informatica PowerCenter, Assential DataStage, Oracle SQLLoader

Reporting Tools: Cognos, Brio, Crystal Reports

Hardware: PC Workstations/Servers, Sun, IBM Mainframes, HP-3000, UNISYS 80

Operating Systems: LINUX, UNIX, OS/2, Windows

Languages: SQL, PL/SQL, Java, HTML, XML, C++, COBOL, FORTRAN, BASIC, SAS, JCL

## Dean Bixler – Data Warehouse Programmer

### Experience

**Colorado Department of Education** Denver, Colorado  
*Data Warehouse Programmer/Analyst*

February 2006-present

#### **Growth Summary Project**

- Utilizing a mockup of the report and some requirements, designed and developed School and District Growth Summary reports.
- Architected a solution to accommodate over 1,500 data points per school.
- Solution included six mappings that populated three datamart tables for school, district and state.
- Developed framework model with district security using OID groups.
- Using Report Studio, created two separate reports for School and District that included page sets and 250 conditional formats.
- Through the use of bursting and the Cognos SDK, provided a distribution solution that is referenced in CDE's schoolView.org.

#### **District Accreditation Scorecard Project**

- Interpreted requirements document, and subsequently planned, designed, developed and architected a solution for the District Accreditation Scorecard.
- Created nine mappings utilizing expression, aggregator, joiner, update strategy, and lookup transformations.
- Architecture design included nine staging tables combined into one final denormalized table for exceptional report performance.
- Developed framework model and package for metadata layer.
- Produced two separate scorecards to satisfy summary and detail level information.
- Reports utilized conditional styles, style variables, bursting, and complex grouping functionality.

#### **Colorado Education Data Analysis & Reporting System (CEDAR) Project**

- Responsible for all report development and modification utilizing Report Studio based upon user requirements and feedback.
- Creation and maintenance of all Framework Manager models, including the amending of fact and dimension tables.
- Implemented modifications to OLAP PowerPlay cubes to reflect current user requirements utilizing PowerPlay Transformer.
- Administrator of the Access Manager application, including the creation of new users, user classes, and school districts.
- Provide training to districts on how to use the CEDAR tool at various locations throughout Colorado; conducted 12 trainings consisting of 10-20 participants thus far.
- Helped reverse engineer Framework Standards (Radar Graph) report that was created in proprietary query tool. The end result was the data warehouse team being able to produce a better version of the report for CEDAR users.

- Develop and design data marts to improve report performance when deemed necessary.
- Respond to inquiries from users regarding data, navigation, and other inquiries.
- Revamped CEDAR homepage, including the creation of training documents and quick fix publications.

### **School Accountability Report (SAR) Project**

- Load and verify source data for fact and dimension tables utilizing Informatica and TOAD software applications.
- Modify the SAR report in Report Studio to comply with legislative bills and amendments.
- Coordinate and organize with printer all activities involved in the School Accountability Reporting Process including, but not limited to the publishing, proofing and distribution of these reports to 182 school districts and 1906 schools (public) in Colorado.
- Generate press packet for Governor's School Accountability Report Press Conference that is distributed to all interested media outlets.

### **Other Data Warehouse Duties**

- Modified Informatica mappings and workflows to meet data requirements per legislation that called for changes to the SAR involving Safety and Discipline categories and measures.
- Aided in the decision making process for the data warehouse to implement policy to remedy slowing changing dimensions.
- Created Informatica mappings and workflows to reflect mass changes in CSAP, CSAPA, and CELA universal file layout.
- Produce reports to fulfill data requests from a variety of sources utilizing TOAD (SQL) and/or Cognos.

**Coors Distributing Company** Denver, Colorado

September 1997 – February 2006

### ***IT Process Analyst***

- Administered Margin Minder server, including, but not limited to data integrity, training, and defining datasets.
- Implemented S4I/Edgar archive, messaging and retrieval tool which resulted in time and material savings.
- Successfully converted Route Accounting System – Descartes to VIP
- Executed 150 Pocket PC installations including the creation of training manuals, technical support, and upgrades.
- Ensured that interfaces along with data were in sync with one another across multiple data warehouses – DB2, Oracle, and Margin Minder.
- Point person for all data mining activity.
- Liaison between Pocket PC users and VIP programmers.
- Data Steward (CoorsNET) for Denver and Glenwood Springs facility.
- Set up Windows NT, Squid-Proxy, Exchange, RAS, and other user accounts for Boise, Denver, and Glenwood Springs.
- Audio/Visual support and troubleshooting for hospitality room events.
- Generate beer order and forecasting tools for sales managers and product procurement on a weekly basis.
- Designed and constructed company wide intranet for employees to access process flow



diagrams, company info, and other additional online resources.

- Manage and assist with Lanier print server.
- Revamped reporting process for beginning inventory, forecasting, and removals which resulted in a 2 hour weekly time savings.
- Completely managed the Cognos Impromptu Web server primarily used for Customer Reviews.
- Conducted annual retailer survey which highlighted areas of opportunities and emphasis for the following year.
- Provided all static and ad-hoc volume reporting for Sales Department.
- Started advertising tracking program that aided in the number one market share of liquor store advertising.
- Generated sales presentations regarding category management, creating partnerships, and brand acquisition.

## **Training**

**Adobe Flex 3: Developing Rich Client Applications**

**Live Cycle Data Services: Integrating with Data and Messaging**

**Oracle Database 10g: SQL Fundamentals I & II**

**Data Warehouse Architecture & Methodology Boot Camp**

**Cognos 8 BI – Content Administration**

**Cognos 8 BI – Server Administration**

**Mapping Colorado Communities: An Introduction to GIS & Community Analysis**

**Informatica PowerCenter 7: Level I Developer**

**Cognos ReportNET 1.1 – Metadata Modeling Part 1**

**Cognos ReportNET 1.1 – Report Authoring Part 2**

**Introduction to Microsoft Project**

## **Lisa Bradley – Project Manager**

### **TECHNICAL SKILLS**

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Project Management: PMBOK, Microsoft Project, RUP Methodology, MindMapper  
Languages: SQL, PL/SQL, Java, HTML, COBOL, Oracle Developer/2000  
Data Bases: Oracle 9i & 10g  
Tools: TOAD, Visual SourceSafe, MindMapper, MS Project, Oracle Forms,  
Microsoft Office Suite (Word, Access, Excel and PowerPoint)

### **PROFESSIONAL EXPERIENCE**

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#### **COLORADO DEPARTMENT OF EDUCATION**

##### **IT PROJECT MANAGER**

**JANUARY 2009 - PRESENT**

Serve as the first point of contact for all IT projects.

Established a project management methodology for the IMS Unit

Responsible for managing all IT related projects for the IMS Unit.

Ensures new IT projects are adequately planned, staffed and monitored for success.

#### **COLORADO DEPARTMENT OF REGULATORY AGENCIES (DORA)**

##### **IT MANAGER / PROJECT MANAGER (PROMOTION)**

**DECEMBER 2007 – JANUARY 2009**

Responsible for managing small to mid-sized web projects that range \$50K - \$200K and last 3 months up to 1.5 years.

Project managed a web project for the Division of Insurance that automated the collection of premium taxes. This web application takes in over \$170 million each year. This was a mid-sized project costing approximately \$200K and took 1.5 years to implement. By automating this project the Division of Insurance has saved a significant amount in resources used to manually intake premium taxes for insurance companies.

Project managed the Physician Profile web application for the Division of Registrations. This project was 3 months in length and cost approximately \$150K. The team size was 1 business analyst, 2 developers, and one QA person. The State of Colorado mandated that the Division of Registration collect profiles on all physicians practicing in Colorado. These profiles consist of any disciplinary actions taken against a physician and are made available online for the citizens of Colorado to search.

Project managed the E-filings project for the Public Utilities Commission (PUC). This project was 1.5 years in length and cost approximately \$150K. Prior to implementing this web application, the PUC accepted filings in paper form. Most of these filings are 100 pages in length and can be served to multiple utilities. This web application automated the entire process and saved the PUC as well as the public thousands of dollars in paper printing.

Responsible for establishing and implementing policies and strategies that further the mission of the department.

Responsible for developing standards and procedures for the development and deployment of information systems.

Create and maintain a project management culture throughout DORA by establishing policies and strategies that define how projects are initiated, planned, monitored & controlled, executed and closed.

Provide project management consulting services to executives, division directors and staff that include, developing time and cost estimates for projects; allocating resources to adequately support DORA's business goals and objectives.

For each web project, I'm responsible for assembling the team necessary to implement the project on-time and within budget.

Periodically perform quality assurance by gathering and documenting business requirements to define the work necessary and be able to trace requirements to final deliverables.

Ensure projects are delivered within specified timelines and budget, comply with DORA design and quality standards; and are in compliance with State law.

Manage client expectations through assessing and controlling project scope, project plans, work breakdown structures, requirement documents and project status reports.

Justify, request, interview and recommend web developers for employment, promotions, demotions or transfers.

## **COLORADO DEPARTMENT OF REGULATORY AGENCIES (DORA)**

### **WEB APPLICATIONS SUPERVISOR**

**SEPTEMBER 2004 – DECEMBER 2007**

Manage all phases of the project life cycle from project initiation to project close to bring web applications online.

Perform project scheduling and resource assignment for multiple projects running consecutively.

Manage project teams to ensure projects are; delivered within specified timelines and budget, comply with DORA design and quality standards; and are in compliance with State law.

Develop time and cost estimates for projects; allocate resources to support DORA's business goals and objectives.

Analyze project requests and determine feasibility by working closely with customers to define project requirements.

Assist in the "make or buy" decision process when determining if third party software can meet the needs of the customers, rather than in-house development.

Responsible for assessing and controlling project scope, project plans, WBS and requirement documents; setting and managing client expectations; and assessment and mitigation of project risks.

Provide team technical guidance and coordination, coordinated priorities, facilitate cross-functional communications, and provide performance reviews to a staff of seven developers.

Directed a team of 4 developers and 1 tester who successfully developed and implemented various new applications which resulted in significant cost reductions to the Public Utilities Commission by going paperless.

Designed and implemented web interface for the Division of Insurance (Premium Reports) which allows the citizens of Colorado to compare insurance premiums for auto, health, and homeowner to ensure they are getting the best insurance rates.

Designed and implemented web interface for the Division of Real Estate that allows administrative staff to determine the fingerprint results of Real Estate Agents/Brokers and decide whether or not to renew licenses. Designed and implemented web interface for the Colorado Information Management Association annual conference.

**COLORADO DEPARTMENT OF EDUCATION**  
**WEB DEVELOPER**

**NOVEMBER 2000 - SEPTEMBER 2004**

As a web developer for the Department of Education I was responsible for the end-to-end process of web development. Because the IT Unit was very small, I was responsible for defining processing requirements, developing, testing and implementing web applications for all 178 school districts in Colorado.

Defined processing requirements for the Student October Automated Data Exchange pilot project by working with school district and CDE personnel.

Assisted in the design and development of the Records Integration Tracking System that replaces the social security number as an identifier with a uniquely identifiable number.

Responsible for developing system specifications, coding, resolving programming problems, testing, and documenting applications systems.

Maintained and enhanced the School District Financing and Auditing system that allocates annual monies to all 178 school districts in Colorado.

**COMMITTEES**

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SECRETARY FOR THE COLORADO INFORMATION MANAGERS ASSOCIATION 2008 - PRESENT	OCTOBER
PLANNING COMMITTEE FOR COLORADO INFORMATION MANAGERS ASSOCIATION 2006 – OCTOBER 2008	OCTOBER
STATE OF COLORADO’S DATA PROTOCOL COUNCIL FEBRUARY 2009	SEPTEMBER 2008 –

**EDUCATION / PROFESSIONAL DEVELOPMENT**

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PMP CERTIFICATE (PROJECT MANAGEMENT PROFESSIONAL), PMI - 2007  
BS - INFORMATION SYSTEMS, UNIVERSITY OF PHOENIX - 2000

## Keith Glenn – Data Warehouse Manager

IT DIRECTOR / IT MANAGER / SYSTEMS ARCHITECT

Business Solutions Development / Project Management / Strategic Planning /  
Applications Management / CRM / Operations Management

**Technical Leader:** I have been fortunate to enjoy a classic IT and management career that has included key positions with ING and McDonnell Douglas Aircraft Company. Career track: Technical growth through such positions as Developer, Project Leader, Database Administrator, Data Administrator, Technical Consultant, and Director Technology & Architecture. **1986 McDonnell Douglas Most Valuable People award**

**Technical Experience:** Over the years I have been utilizing the technical expertise gained within these major corporations to build and design cost effective systems allowing the businesses to accurately track inventory, improve document processing, track all clients and their relationships, and keep history of communications with agents.

**Data Architecture Experience:** Experienced in development of Enterprise data models/data dictionaries to improve system design through data re-use and improved database design. Mapping of data models to physical databases and files to reduce cost of system maintenance and faster turnaround of system enhancements.

**Proven Record:** I have managed complex technical projects which have completed on time and within budget. I am skilled in the areas of employee management, including developing cohesive teams capable of high quality work, directing / coaching staff on career growth; working with employees on conflict resolution.

**B.S.** Southwest Missouri State University

### Selected ACHIEVEMENTS & SKILLS

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- ✓ **Key Skills:** Creating and maintaining strong business relationships. Analyzing complex business challenges and developing solutions to improve business efficiencies, enhance customer satisfaction, and increase sales. Managing complex technical systems. Analyzing and recommending strategic system direction. Directing tactical solutions to improve efficiencies and reduce costs.
- ✓ **Researched/evaluated/implemented/managed workflow & imaging system:** Led the technical team in researching various workflow & imaging systems to process all mail received by ING/Security Life. Including evaluating hardware requirements, network capacity, and operational requirements. Implemented recommended solution and managed day-to-day operations, support staff, and budget.
- ✓ **Appointed the ING representative to IBM's IAA (Insurance Application Architecture) enterprise data analysis project:** This required working with other Insurance company data architects in the development of the IAA data model and data dictionary. The data model and data dictionary was created as a means of standardizing data and integration between insurance/financial services company systems.
- ✓ **Assumed responsibility for diverse teams of SalesLogix support staff:** Took three segregated teams of SalesLogix CRM developers & support staff and created a cross-trained, highly functional single team. Provided a better support environment and made visible opportunities for the business to use sales techniques previously unaware of.

Integrated SalesLogix with Blackberries, enabling a faster/easier mechanism to contact sales prospects.

- ✓ **Client Data Warehouse:** Led the ING team in the development of a Client Data Warehouse, based on IBM's IAA data architecture. By integrating the Client Database with mainframe and server based insurance based applications ING/Security Life was provided with the ability to track all relationships ING/Security Life has with clients. This provided ING/Security Life an extremely valuable marketing and information tool.

*Career History*

**Director, Technology & Architecture, ING.** Managed \$5 M budget and 23 employees.

**Technology Architect, ING**

**Data Administrator/DBA, ING / McDonnell Douglas**

## **Governor's Office of Information Technology – Business Stakeholders**

The business stakeholders in the Governor's Office of Information Technology represent the state's interests, standards and methodologies. They will assist in providing technical oversight and guidance on the various projects such as the interoperability and data exchange with other state agencies.

### **Michael W. Locatis - State Chief Information Officer**

Mike Locatis was appointed by Governor Bill Ritter as State CIO in January 2007. Prior to becoming the Chief Information Officer for Colorado, Mike was CIO for the City and County of Denver where he was recognized nationally by the Public Technology Institute for consolidating twenty disparate information technology departments into a single city-wide Technology Services Division. Mike's Technology Service team delivered new enterprise applications including 3-1-1 a comprehensive "one-stop shop" constituent service offering available today in Denver.

Before joining the City and County of Denver, Mike was the Senior Director of Enterprise Technology Strategy for Time Warner Cable. In this capacity, he managed the technology strategy and architecture development - responsible for transforming customer service delivery systems, including the alignment of call center, ERP, web and retail systems.

### **Micheline Casey – Chief Data Officer**

Micheline Casey is Chief Data Officer (CDO) and Director of Identity Management in the Colorado Governor's Office of Information Technology (OIT). As CDO, she is responsible for developing and executing the State's enterprise data strategy, and developing the strategic plan for implementing a data governance and data management framework across the State's Executive Branch agencies. She coordinates OIT legislative and policy actions as necessary for this strategic effort. In this role, Ms. Casey also chairs the Government Data Advisory Board, a legislatively mandated, Governor-appointed Board which was established to advise the State Chief Information Officer on matters related to enterprise data management and service delivery.

Ms. Casey also leads OIT's efforts in developing Identity, Credential and Access Management as a common framework and shared service across the State. She chairs the Governor's Office Working Group on First Responder Credentialing, and leads the State's efforts on implementing a standardized, interoperable credentialing program for first responders. She also is responsible for developing the State's strategy on implementing identity as service for the State.

Prior to joining the Governor's Office, Ms. Casey was Senior Director of Identity Management for ChoicePoint Government Services. In that capacity, Ms. Casey was responsible for the division's strategy and Federal public policy efforts in the Identity Management space. She also worked in the company's Insurance Services division, and was responsible for policy and business development in the state government market. Ms. Casey is a 15 year veteran of the technology industry, working in strategy, marketing, and business development roles.

Ms. Casey earned her M.B.A from the University of Georgia's Terry School of Business and a B.S. in Marketing from the Pennsylvania State University. She has been a featured speaker at such events as Colorado Digital Government Summit, FOSE, FiXS, and the Federal Trade Commission Identity Theft Task Force Conference.

### **Kelley Eich - Chief Technical Officer**

Kelley Eich, Chief Technical Officer, brings over 25 years of state experience in the social and human services information technology field to OIT. Prior to joining OIT, Kelley served as the Chief Technology Officer for the Colorado Department of Human Services (CDHS), managing a complex diverse IT infrastructure supporting the state's 64 county departments of social/human services, the state's public mental health system, Colorado's system of services for people with developmental disabilities, the state's juvenile corrections systems and all state and veterans' nursing homes, through more than 5,300 employees and thousands of community-based service providers. Kelley is highly regarded as a leader and communicator, demonstrating ingenuity and thoughtful strategic planning.

As Chief Technical Officer for the state, Kelley is focused on defining the state's vision and strategy in support of OIT's mission to increase the effectiveness of government through the use of shared information and technology; continually researching new ways of conducting business, providing services, and leveraging technologies to better support our customers and ultimately the citizens of the State of Colorado.

### **Paul Lewin, CIO OIT-Department of Corrections**

In 2003, Paul became the acting Chief Information Officer for the Department of Corrections and in April 2004 promoted to CIO. Paul has been active with the Colorado State CIO Forum, National Consortium of Offender Management Systems (NCOMS) and is president elect of the Correctional Technical Association (CTA). Paul has implemented many new correctional technological systems in Colorado and is considered a leader in designing and implementing state of the art systems for the Colorado Department of Corrections.

### **Leah Lewis - Chief Enterprise Architect**

Leah Lewis has twenty years of experience in Information Technology and Geographic Information Systems. She has worked and consulted for a variety of organizations including: the National Oceanic and Atmospheric Administration and the National Geophysical Data Center in Boulder, Colorado, the United Nation's World Meteorological Organization, and the International Standards Organization in Geneva, Switzerland. Leah spent 15 years in the Colorado Department of Natural Resources building the Division of Water Resource's IT systems and three years as the Chief Information Officer before becoming OIT's Chief Enterprise Architect in July 2009.

### **Ron Ozga, CIO OIT-Department of Human Services**

Ron has over 30 years of experience within the Information Technology field. He has held IT Director level positions within a number of private companies. His experience has included



strategic plan development, project management, software application development and operations management.

Ron joined the Colorado Children, Youth and Families (CYF) Automation Project, Colorado's SACWIS Project, in August 1998. His initial responsibility was as Technical/Project Manager, managing the installation of the CYF infrastructure across the State of Colorado along with providing project management support as backup to the CYF Project Director. In February 2001, Ron was appointed to the CYF Project Director position. After the implementation of Colorado's SACWIS project, Ron was appointed the Applications Director for Children, Youth and Families Services and Child Support Enforcement Services, responsible for the applications that support the Child Welfare, Youth Corrections, Child Care and Child Support Enforcement program areas in Colorado.

In December 2005, Ron was appointed the Deputy Chief Information Officer for the Colorado Department of Human Services, having overall responsibility for all applications within the agency. As of July 2008, Ron was appointed the Departmental Chief Information Officer under the Governor's Office of Information Technology for the Colorado Department of Human Services.

### **Gerald W. Smith, CIO OIT-Department of Labor & Employment**

Manager with 30 plus years of experience in private industry organizations with 100 or more persons in their IT departments. Twelve years with IBM Global Services in both Distribution and Production Industries. Twenty-one years with Pathmark Stores Incorporated. Specializing in the development of IS strategic and operating plans, data center operations, commercial account management, and customer relations' management. Special focus on budgets, cost control, and the delivery of business applications to internal and commercial customer sets.

Participates as a member of the information technology organization's leadership team and directs the customer and technical support personnel that ensure the efficient, secure, and stable day-to-day operations of CDLE's information technology applications and infrastructure. Create, implement and monitor compliance with standards, policies, and procedures related to hardware, software, and support of information technology applications and infrastructure. Establish of criteria for performance monitoring, benchmarking, and continuous process improvement are included within these standards. Works with peers to ensure that new applications and infrastructure are adequately documented and transitioned to support personnel and that disaster recovery and business continuity plans are modified and tested accordingly. This position also has responsibility as the Deputy Chief Information Officer and as such will make decisions and/or guide the organization in the Chief Information Officer's absence.

# **Project Narrative**

## **Project Narrative - Appendix C Current Status of State's Longitudinal Data System**

Attachment 1:

Title: **Project Narrative - Appendix C** Pages: **4** Uploaded File: **SLDS.AppendixC-FINAL.doc**

APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
<b>Data System Capabilities</b>		
The system must enable States to examine student progress and outcomes over time. Must include data at the individual student level from preschool through postsecondary education and into the workforce.	<p><b>In Progress.</b> In August 2008, Colorado released the student-level Colorado Growth Model (v1.0) to school districts. 2009 marked the release of the public-facing version. This model has received national attention as one of the most capable longitudinal data systems in the country for tracking and providing interactive analysis of individual K-12 student progress. Planned enhancements for v2.0 include expanding the application to show how much improvement (catch-up, keep-up) is needed for each student to reach postsecondary readiness, connect teacher and student records, incorporate postsecondary metrics, and to provide enhanced diagnostic information to students, parents, teachers and administrators. The Colorado Department of Higher Education developed a high quality longitudinal data system over the last three decades and can provide guidance on issues surrounding relevant indicators and research with longitudinal data.</p> <p>Funding from CDE's 2007 SLDS grant award was used to support the development of individual student reports and warehouse modifications for this effort. The Colorado Governor's office continues to support this effort by providing \$2.5M in discretionary funds. Funding from this application award will be used to continue the development of this item, with an estimated completion date of June 2011.</p>	1.1, 1.6, 2.1, 2.2
The system must facilitate and enable the exchange of data among agencies and institutions within the State and between States so data may be used to inform policy/practice.	<p><b>Planned.</b> Legislators authorized the state's executive branch departments to share unit-level records (HB 08-1364) and created the state's first Government Data Advisory Board (HB 09-1285) to implement the state's interdepartmental data sharing protocols. Conversations between agencies (CDE, CDHE, Labor, and Human Services) are underway to implement a process to align multiple IDs into a State system ID in order to share data.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2011.</p>	1.1, 2.1, 2.2
The system must link student data with teachers.	<p><b>Planned.</b> Initial requirements to link students and teachers have been identified for such projects as the Colorado Growth Model, IEP management system, and student and teacher performance metrics. Discussions are occurring regarding modifications to various CDE systems required to link data once Educator IDs can be created.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2013.</p>	2.3, 1.4
The system must enable matching of teachers with information about their certification/preparation.	<p><b>Planned.</b> Initial requirements regarding teacher certification and preparation have been identified. These include teacher effectiveness, evaluation of teacher education programs, new teacher remediation metrics, and others. Discussions are occurring regarding modifications to various CDE and CDHE systems required to link data once Educator IDs can be created. CDHE currently captures longitudinal information on students who are enrolled in teacher preparation programs.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2012.</p>	1.8, 1.9, 2.2

APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
The system must enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers, and school leaders on the achievement of their students.	<p><b>In place; being improved.</b> SchoolView™, launched in August 2009, is a web portal used to create, maintain, and publish student, school, school district, and state performance reports and supporting data. Planned enhancements to SchoolView will feature a document management and workflow system, including forms, records and content management, and online training and help. It will automate collection of performance metrics to provide most of the data required for state and federal reports.</p> <p>Limited funds from Colorado’s 2007 SLDS grant were used to develop SchoolView™. Funding from this application award will be used to continue the development of this item, with an estimated completion date of June 2013.</p>	3.2, 3.3, 3.4, 4
The system must ensure the quality and integrity of data contained in the system.	<p><b>In place; being improved.</b> Colorado’s current data system reflects a “collections-based” approach that over time has created redundancies and placed enormous burdens on districts. The need and opportunity is to migrate to a service oriented architecture that enables real-time, streamlined data exchange among information systems. Development of state standards (i.e., course codes) and definitions for data is included in this effort. The State’s framework for data quality includes defining the requirements, inspection policies, measures, and monitors that reflect changes in data quality and performance. In addition to these steps, a data governance framework for data quality will be established.</p> <p>Funding from this application award will be used to develop this item, with an estimated completion date of June 2012.</p>	5.1, 5.2, 5.3, 5.4
The system must provide the State with the ability to meet reporting requirements.	<p><b>In place; being improved.</b> Colorado is completing and submitting 2007-08 and 2008-09 ED Facts submissions. While CDE is able to submit the collections, only 50% of the required data elements exist in the warehouse; others are stored in various spreadsheets and data stores.</p> <p>Funding from CDE’s 2007 SLDS grant award was used to support the initial development of warehouse modifications in order to capture reporting requirements. Funding from this application award will be used to continue and improve upon this capability, with an estimated completion date of June 2011.</p>	1.3
<b>Required Data System Elements</b>		
A unique statewide student identifier that does not permit a student to be individually identified by users of the system (except as allowed by Federal and State law)	<p><b>In place; being improved.</b> CDE implemented a unique state assigned student identifier (SASID) for all public P-12 school students in 2002. This system provides schools the ability to validate and/or generate student IDs when a student enrolls in a district. The SASID is attached, encrypted and personal information removed for student level data reported to CDE. SB 06-024 required the higher education system to adopt the use of the student identifier for the purpose of sharing student record information across the state’s data systems for College Opportunity Fund purposes. Currently, this data is provided to CDHE through CD-ROMs.</p>	2.1

APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
	Funding from this application award will be used to develop this item with an estimated completion date of June 2011.	
Student-level enrollment, demographic, and program participation information	<p><b>In place; being improved.</b> Enrollment information is collected from local education agencies through specific, single-point-in-time file-based manual collections that drive financial allocations. This data is stored permanently by the state so that it can be used in subsequent years to determine continuous improvement, but requires extensive manual effort to reduce redundancies in reporting and coordinating data between multiple systems.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	1.2, 1.4, 1.5
Student-level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs	<p><b>In place; being improved.</b> The state currently collects student-level graduation data by diploma type and student-level dropout data (including the ability to identify exiting students as graduates, dropouts, transfers or GED recipients.). However, the current system for tracking mobility is antiquated. State legislation (SB 08-212; CAP4K) requires extending data collection through postsecondary and workforce development systems.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	2.1, 2.2
The capacity to communicate with higher education data systems	<p><b>Planned.</b> CDE and CDHE presently share data using a manual (e.g. disk or email) format. Recently enacted legislation supports the development and implementation of P-20 data sharing and reforms. CDE and CDHE staffs are actively engaged in discussions regarding data system needs, function and focus and representatives from both organizations participate on several joint data committees.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	2.2
A State data audit system assessing data quality, validity, and reliability	<p><b>In place; being improved.</b> CDE's Automated Data Exchange (ADE) has an audit mechanism to review the accuracy of data submitted by schools and districts. All current data collection processes employ rigorous validation procedures and data edits. Business rules are documented and data models are in place. The system only allows for an "all or nothing" load; therefore, if a district needs to correct any error, they must reload the entire file.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	5.3
Yearly test records of individual students with respect to assessments under section 1111(b) ESEA	<p><b>In place; being improved.</b> The data system collects yearly test records of individual students and matches individual students' test records from year to year to measure academic growth. The data system must evolve to track the attributes and support implementation of new standards and assessments developed through SB 08-212 (CAP4K) legislation.</p> <p>Funding from this application award will be used to develop this item with an estimated completion date of June 2012.</p>	1.1, 1.2

APPENDIX C: REQUIRED DATA SYSTEM CAPABILITIES AND ELEMENTS		
System Requirements	Current Status	Relevant Grant Outcomes
Information on students not tested, by grade and subject	<b>Completed.</b> The state collects and maintains individual records on each untested student in a tested grade with specific explanations why each student was not tested; this function will continue as new assessments are developed and implemented.	
A teacher identifier system with the ability to match teachers to students	<b>Planned.</b> HB 09-1065 created the political mandate for an Educator Identifier System and directed the establishment of the Quality Teachers Commission to oversee its design and implementation. Discussions regarding requirements are in the early stages and an initial deployment is planned during the current (2009-2010) academic year for the creation of an ID. The Governor's office (\$800K) and private funders (Rose Foundation and Williams Fund – \$300K) are supporting this initiative. Funding from this application award will be used to extend the development of this item with an estimated completion date of June 2012.	1.8
Student-level transcript information, including information on courses completed and grades earned	<b>In Progress.</b> CDE has implemented and continues to develop the Colorado Transcript Center web application. Development, testing and production were completed in late November 2008. Current work focuses on building membership and helping district and postsecondary institutions become active members through various marketing and outreach strategies. The key is capturing transcript data at the state level. Funding from CDE's 2007 SLDS grant award is supporting the development of the exchange of transcript data, with an estimated completion date of June 2013.	1.7
Student-level college readiness test scores	<b>Completed.</b> As part of its state assessment/accountability system, Colorado requires all 11th grade students in Colorado public schools to take the ACT test and collects and maintains these data on an individual student basis. The ACT is the standardized, curriculum-based, achievement, college entrance examination selected by CDE.	
Data that provide information regarding student transition from secondary school to postsecondary education	<b>Planned.</b> SB 08-212 (CAP4K) is a landmark reform initiative that creates a truly aligned Colorado preschool to postsecondary educational system. To date, CDE and CDHE have jointly held meetings with stakeholders and have approved a postsecondary and workforce readiness definition for Colorado students. Discussions are currently underway between CDE and CDHE to expand the Colorado Growth Model to display student transition metrics. Funding from this application award will be used to develop this item with an estimated completion date of June 2013.	2.2
Data that provide other information necessary to address alignment and adequate preparation for success in postsecondary education	<b>Planned.</b> SB 08-212 (CAP4K) facilitated extensive statewide conversations regarding the skills and competencies students need to succeed after high school to be prepared to enter college and the workforce and to compete in the global economy. One significant outcome was the revision of Colorado's P-12 education standards to address postsecondary and workforce readiness standards. Next steps include the alignment and design of new assessments for the standards. Funding from this application award will be used to develop this item. Est. completion June 2013.	1.4, 2.2, 2.3, 3.2

# **Project Narrative**

## **Project Narrative - Appendix D Letters of Support**

Attachment 1:

Title: **Project Narrative - Appendix D** Pages: **17** Uploaded File: **SLDS combined Letters of Support.pdf**

MICHAEL F. BENNET  
COLORADO

COMMITTEES:  
AGRICULTURE, NUTRITION, AND FORESTRY

BANKING, HOUSING, AND  
URBAN AFFAIRS

HEALTH, EDUCATION, LABOR,  
AND PENSIONS

SPECIAL COMMITTEE ON AGING

## United States Senate

WASHINGTON, DC 20510-0609

WASHINGTON, DC:  
702 HART SENATE OFFICE BUILDING  
WASHINGTON, DC 20510  
(202) 224-5852

COLORADO:  
2300 15TH STREET  
SUITE 450  
DENVER, CO 80202  
(303) 455-7600

<http://www.bennet.senate.gov>

December 3, 2009

The Honorable Arne Duncan  
Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I write to express my strong support for an application submitted by the Colorado Department of Education (DUNS# 187406538) for funding made available through the U.S. Department of Education's Statewide Longitudinal Data System grant program.

I know how critical good data systems are in meeting the needs of students. Colorado's education system currently lacks the data system it needs to fully implement its policy priorities and meet the needs of all students. I witnessed this first-hand at Denver Public Schools: Too many students slip through the cracks and fail to graduate, and too many students graduate unprepared for postsecondary education and the workforce. A quality Statewide Longitudinal Data System will allow us to put data in the hands of parents and guardians, educators, researchers, policymakers and other stakeholders that will equip them with the necessary tools to make positive change.

I know the U.S. Department of Education has made Statewide Longitudinal Data Systems a priority and set funding aside for competitive grants. Colorado had the foresight to adopt policies and garner the necessary support to hit the ground running with an infusion of funds. The proposal submitted for this SLDS grant, called the SchoolView Project, will build a system that ultimately will enable all stakeholders to have the necessary information and skills to better support all of Colorado's students and educators.

I encourage you to recognize Colorado's strengths and consider us a worthy investment. Thank you for your consideration.

Sincerely,



Michael F. Bennet  
United States Senator



**JOHN T. SALAZAR**  
3RD DISTRICT OF COLORADO

326 CANNON HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
202-225-4761  
202-226-9669 (FAX)



COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON  
ENERGY AND WATER  
  
SUBCOMMITTEE ON  
MILITARY CONSTRUCTION AND  
VETERANS' AFFAIRS

**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515**

December 2, 2009

**Arne Duncan, Secretary of Education**  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan:

As a proud representative of Colorado to the U.S. House of Representatives, I write to express support for Colorado's Statewide Longitudinal Data System grant application.

Colorado has successfully laid the groundwork for an effective longitudinal data system. Policies are in place; innovative practices have been established; and education stakeholders are supportive of the development of this system. With additional funds, the Colorado Department of Education (CDE) will be able to partner with other agencies and provide a robust picture of Colorado's students that will equip policy makers, researchers, educators, parents/guardians, and students with the data necessary to make informed decisions.

As the Congressman from Colorado's Third Congressional District and a sixth generation native of the San Luis Valley in Southern Colorado, I represent some of the most rural school districts in the state. The ideas outlined in CDE's School View Proposal for this SLDS grant would help facilitate important growth in the way those school districts and higher education organizations can serve their students. These funds would help provide an infrastructure that equips all educators with tools to effectively increase student achievement.

Colorado is a worthwhile investment, and I hope you will seriously consider this proposal. Thank you for your time and consideration. Please keep my Alamosa office informed of any developments with this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. Salazar".

John T Salazar  
United States Congress

134 WEST B STREET  
PUEBLO, CO 81003  
719-543-8200  
719-543-8204 (FAX)

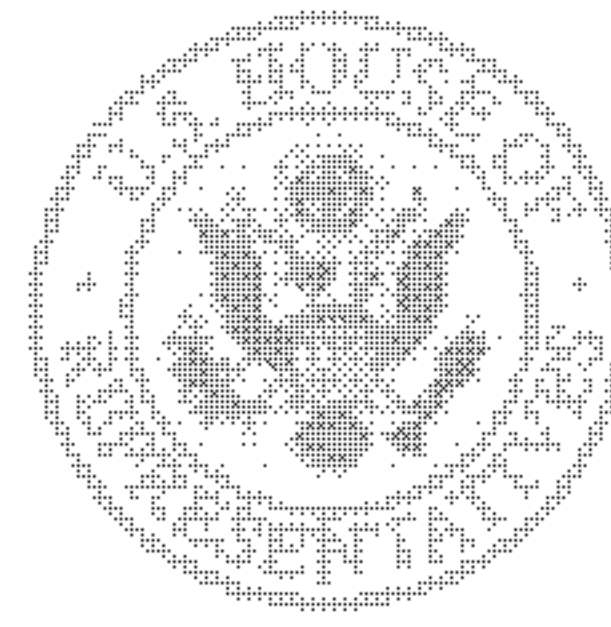
225 NORTH 5TH STREET, STE 702  
GRAND JUNCTION, CO 81501  
970-245-7107  
970-245-2194 (FAX)

609 MAIN STREET, #6  
ALAMOSA, CO 81101  
719-587-5105  
719-587-5137 (FAX)

813 MAIN AVENUE, STE 300  
DURANGO, CO 81301  
970-259-1012  
970-259-9467 (FAX)

COMMITTEE ON AGRICULTURE

SUBCOMMITTEE ON GENERAL FARM COMMODITIES  
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COMMITTEE ON  
TRANSPORTATION & INFRASTRUCTURE

SUBCOMMITTEE ON RAILROADS, PIPELINES  
AND HAZARDOUS MATERIALS  
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT,  
PUBLIC BUILDINGS AND EMERGENCY MANAGEMENT

**BETSY MARKEY**

4TH DISTRICT, COLORADO

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I write you to express my support of the Colorado Department of Education's SLDS grant application. Colorado's legislators, working in partnership with Governor Ritter, have consistently acted to ensure a legislative framework exists to foster data sharing among state agencies in ways that raise student achievement. Further, the Colorado Department of Education has implemented innovative practices, such as SchoolView and the Growth Model, that help make student growth and achievement visible and actionable.

Colorado's proposal builds on the valuable work already underway throughout the state. As an elected official from an area that is home to universities, community colleges and K-12 schools, I am confident that the U.S. Department of Education's investment in Colorado would make a substantively positive impact on my constituents.

I urge you to seriously consider Colorado's proposal and thank you in advance for your consideration.

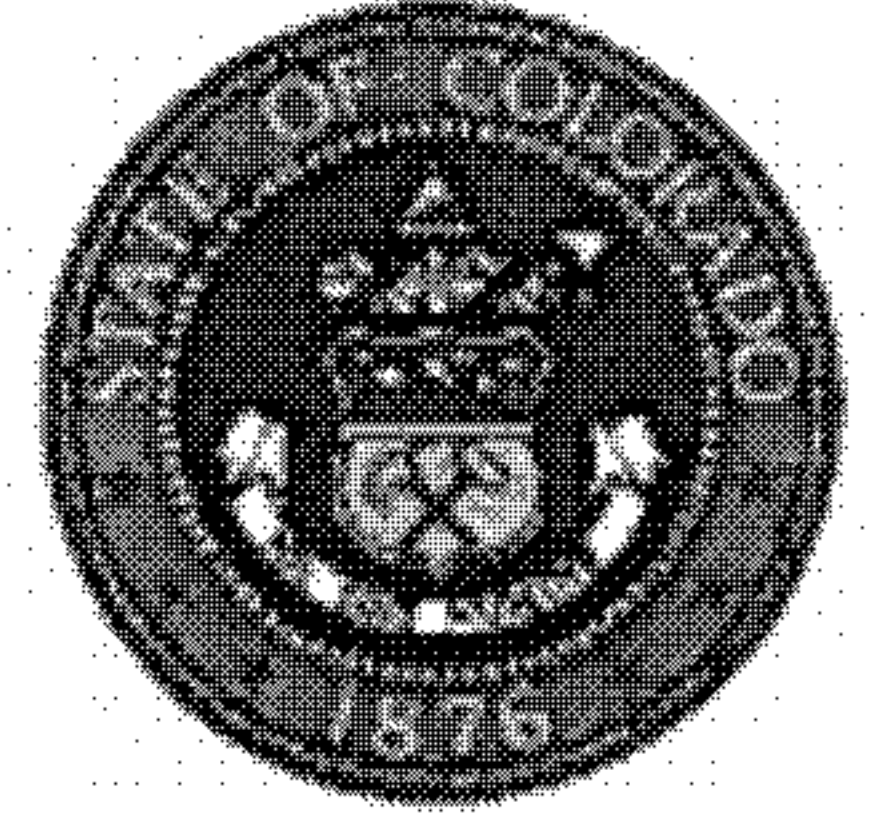
Sincerely,

Betsy Markey  
Member of Congress

# STATE OF COLORADO

## OFFICE OF THE GOVERNOR

136 State Capitol Building  
Denver, Colorado 80203  
(303) 866 - 2471  
(303) 866 - 2003 fax



**Bill Ritter, Jr.**  
Governor

December 3, 2009

Mr. Arne Duncan  
Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

Since taking office three years ago, creating longitudinal data systems has been one of the highest priorities of our administration. Since 2007, we supported and passed legislation creating the Colorado Growth Model, legislatively authorized all state administrative departments to share unit-level data, created an educator identifier system that will match student outcomes to teachers and teacher preparation programs, expanded the use of a common student identification number across all publicly funded education systems, and created the Government Data Advisory Board to govern the exchange of unit-level records across state agencies and research organizations. Without question, improving state longitudinal data systems has been central to our administration.

In addition to supporting reform-oriented data legislation, and in spite of the recent economic downturn, we have continued to make the development of robust, longitudinal data systems a state budgetary priority. Recently, using State Fiscal Stabilization Funds – Government Services Funds, we funded enhancements to the state’s growth model—which has been or is in the process of being adopted by several other states—and launched the development of the state’s educator identifier system. These investments were matched by nearly \$600,000 in private support from Colorado-based philanthropic foundations.

We strongly believe that Colorado is among a handful of states currently poised to make immediate progress toward the vision of an aligned data system articulated in the American Recovery and Reinvestment Act. In other words, the enclosed proposal represents a true “shovel-ready” data system project.

Secretary of Education Arne Duncan

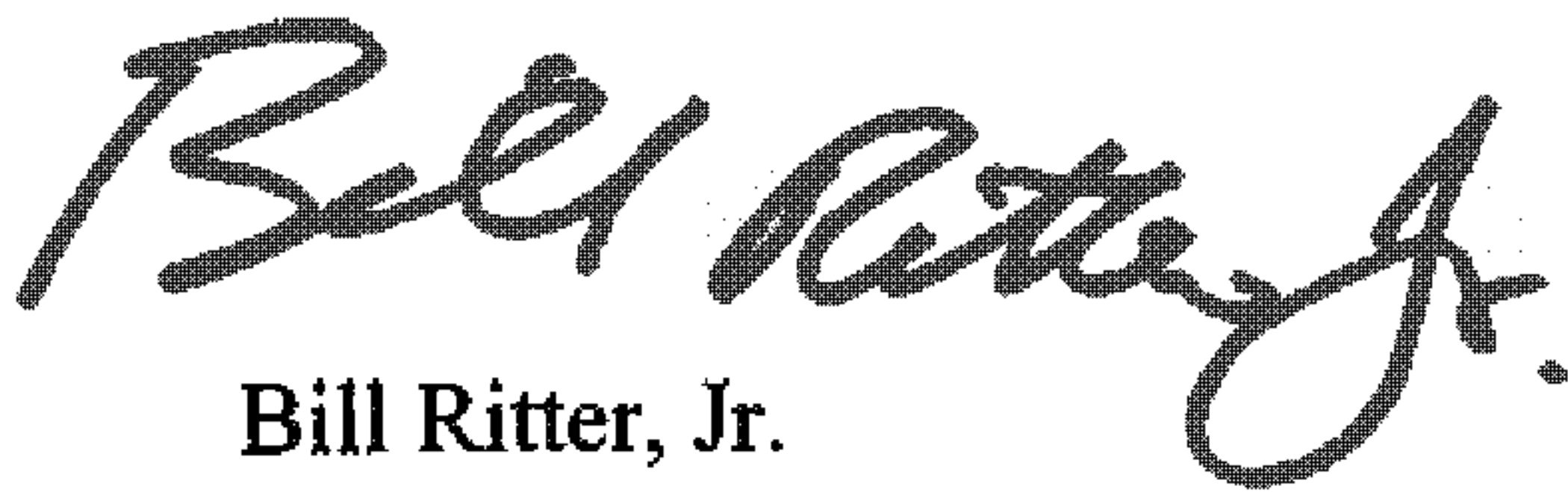
December 3, 2009

Page 2

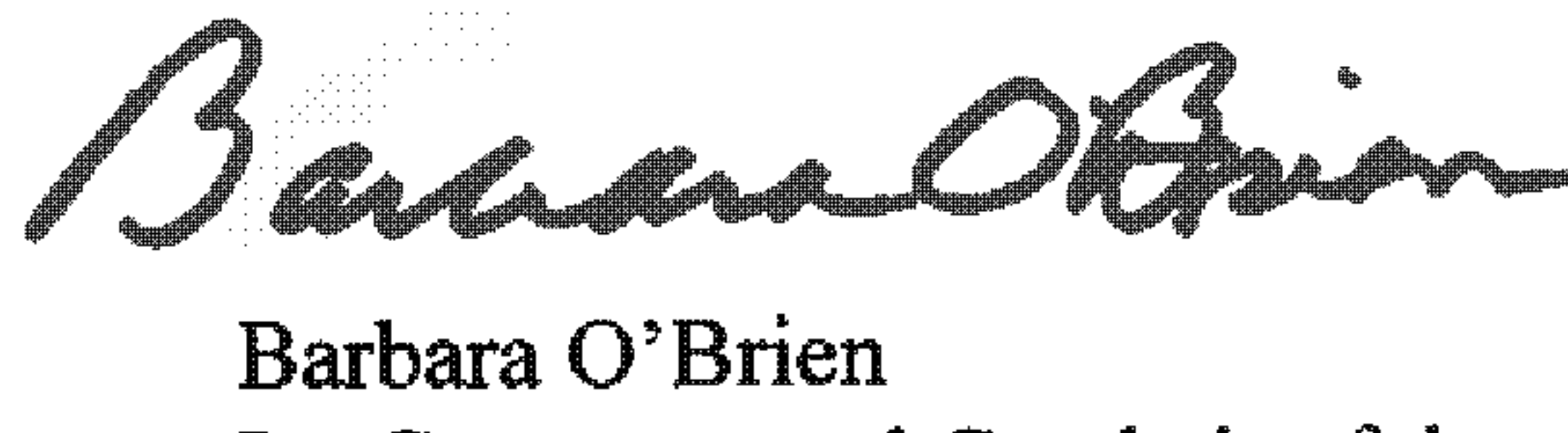
We strongly support the enclosed State Longitudinal Data Systems (SLDS) grant proposal. It represents the culmination of years of effort from our administration and thousands of hours of collaboration among Colorado educators, policymakers, and state departments, including education, higher education, and information technology. If funded, the enclosed proposal would enable the development of a model longitudinal data system.

We hope that you will give the Colorado State Longitudinal Data System proposal your most earnest consideration, and we thank you for the opportunity to participate in the competition.

Sincerely,



Bill Ritter, Jr.  
Governor



Barbara O'Brien  
Lt. Governor and Co-chair of the  
Colorado P-20 Council

State Representative  
DEBBIE BENEFIELD  
8370 Yarrow St.  
Arvada, CO 80005  
Capitol: 303-866-2950  
Home: 303-425-1360  
E-mail: debbie.benefield.house@state.co.us



Chair:  
House Services  
Committee  
Member:  
Education Committee  
Finance Committee

**COLORADO**  
**HOUSE OF REPRESENTATIVES**  
STATE CAPITOL  
DENVER  
80203

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I write to express my support of the Colorado Department of Education's proposal to the U.S. Department of Education for a State Longitudinal Data System ("SLDS") grant.

Having served in our state's House of Representatives since 2004, I have had the honor to support numerous bills providing the framework for Colorado's longitudinal data system. Working together with Governor Ritter, legislators have continuously demonstrated a commitment to building the policy base for an effective data system that helps raise student achievement statewide. I am proud of what we have accomplished together and am confident that support will continue into the future.

The Colorado Department of Education has demonstrated the will to be innovative, stretching the realm of what was previously possible. Serving as examples of that innovation, Colorado's SchoolView project and Colorado Growth Model provide invaluable tools for stakeholders and are seen as a model to other states. These programs, coupled with our policy base, make Colorado a great investment.

I strongly support Colorado's proposal for the SLDS grant and believe it will advance our efforts in raising student achievement and closing the achievement gap. Thank you for your consideration.

Sincerely,

Representative Debbie Benefield  
Colorado House of Representatives

# STATE OF COLORADO



DEPARTMENT OF HIGHER EDUCATION

Bill Ritter, Jr.  
Governor

D. Rico Munn  
Executive Director

November 30, 2009

To whom it may concern:

I am writing today to express the utmost support for the Colorado Department of Education's (CDE) State Longitudinal Data System (SLDS) grant application. Here in the Colorado Department of Higher Education we have a long history of longitudinal data development and analysis and we approve of and are in sync with the extensive CDE plan to develop their own longitudinal system and to unite it with ours. We are poised to make this happen given the current Colorado legislative environment, national policy guidance, and a spirit of collaboration between agencies. Our work in developing this grant application with colleagues at CDE leads us to conclude that with the help of this grant, our state can rapidly move to the leading edge of tracking students through the education pipeline and begin using the data to refine educational outcomes across the P-20 landscape. Our overarching goal in public higher education is "to and through" --to increase the number of students entering postsecondary education and then completing a degree. We believe this system will facilitate our goal by 1) providing data from pre-school through graduate school and 2) allowing for the use of data to inform policy to eliminate barriers to student success and aspiration throughout the pipeline.

As you will discover in the grant application, Colorado's efforts to establish shared data for analysis and improvement contains a unique caveat in that this was recently legislated to happen. State Legislation created a centralized governance authority, the Government Data Advisory Board (GDAB), to formalize policy on the State's data sharing needs. A subcommittee of this board, the Education Data Subcommittee, has been created and stands ready to provide the guidance and governance of all the underlying issues of policy surrounding the development of a cross agency longitudinal data system like the one Colorado proposes to build. The Colorado Department of Higher Education is represented on both these boards and is assisting, and indeed witnessing, the development of a culture of trust, data stewardship, and data sharing.

The ingredients are all in place to accomplish the goals set forth in your RFP, save one: Finance. The lack of a resource base to advance rapidly on these issues is a real barrier in today's fiscal landscape. This is why the SLDS investment is so vital to our progress. We expect to create an educational system with a holistic approach to education from pre-K through the labor force that continually diagnoses and then responds to barriers to student success and improves the development of the State's human capital. In this grant application, we have identified a crucial step toward that expectation and we ask that every consideration be made on behalf of Colorado's citizens.

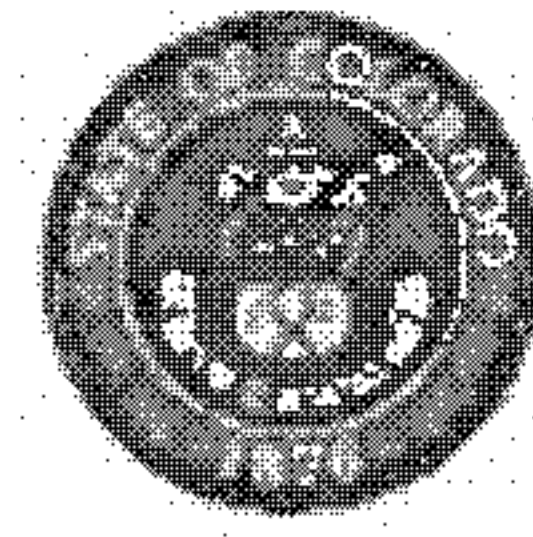
Sincerely,

Rico Munn  
Executive Director  
Colorado Department of Higher Education

# STATE OF COLORADO

## GOVERNOR'S OFFICE OF INFORMATION TECHNOLOGY

601 East 18th Avenue, Suite 250  
Denver, Colorado 80203  
Phone (303) 764-7700  
Fax (303) 764-7725  
www.colorado.gov/oit



Bill Ritter, Jr.  
Governor

Michael Locatis  
State Chief Information Officer

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

This letter is sent on behalf and support of Colorado Department of Education's SLDS grant application. Since taking office in 2007, Governor Bill Ritter and the Colorado Legislature have enacted several pieces of legislation to encourage and allow data sharing between state agencies, with a particularly strong emphasis on education and workforce-related data ties. The Governor's Office of Information Technology (OIT) sits squarely in the middle of all State information technology programs, and has been designated via legislation to oversee and govern all policies, processes, standards and architecture related to enterprise technology and information sharing initiatives.

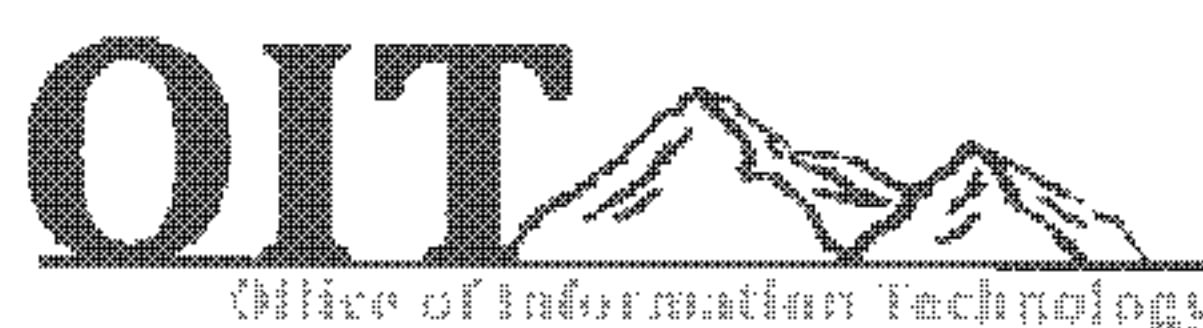
OIT provides a framework to manage the connections among state agency systems, providing enterprise architecture, governance, and data management standards that will facilitate cross-agency collaboration. OIT will be integrally involved in all aspects of the planning, development and implementation of the SLDS. Pursuant to state law, OIT implements the Enterprise Governance Committee (EGC) structure to provide senior governance for large-scale, multi-agency initiatives such as Project SchoolView™. This model has been effective in providing management expertise across the state by identifying risks, ensuring collaboration across agencies, and helping resolve critical issues. OIT is delighted to be the technology partner of the Colorado Department of Education for this exciting and critical initiative.

The Governor, Legislature, and Department of Education have established a clear vision and direction for enabling data sharing to impact student performance. What is lacking is the associated funding required to implement this vision with strong, well-architected technology infrastructure. Colorado is a state where your investment can help build this solid infrastructure that is consistent with our direction and supported by all stakeholders. I strongly support the proposal and thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink that reads "Michael W. Locatis".

Michael W. Locatis  
Executive Director  
State Chief Information Officer  
Governor's Office of Information Technology



Office of Information Technology

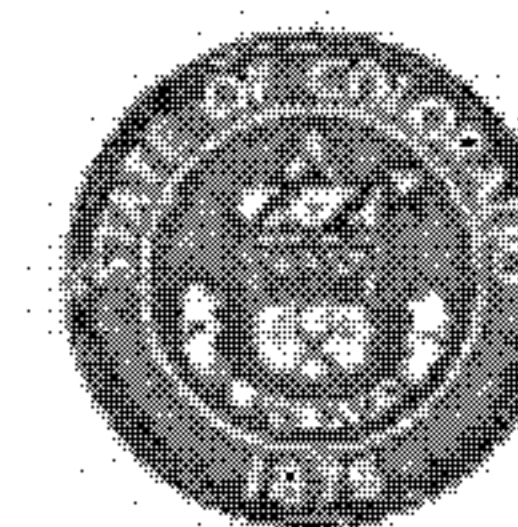
*Increasing the effectiveness of government through information technology*

# STATE OF COLORADO

**GOVERNOR'S OFFICE OF INFORMATION TECHNOLOGY**

**GOVERNMENT DATA ADVISORY BOARD**

601 East 18th Avenue, Suite 250  
Denver, Colorado 80203  
Phone (303) 764-7700  
Fax (303) 764-7725  
[www.colorado.gov/oit](http://www.colorado.gov/oit)



Bill Ritter, Jr.  
Governor

Michael Locatis  
State Chief Information Officer

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

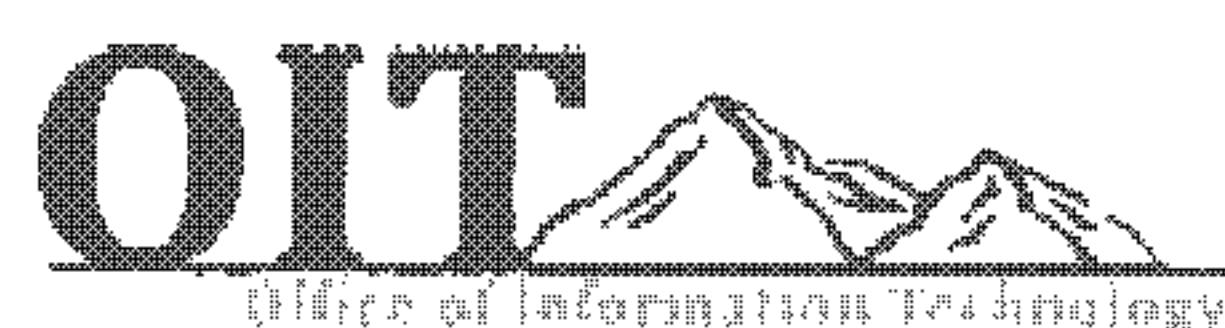
Dear Secretary Duncan,

This letter is sent on behalf and support of Colorado Department of Education's SLDS grant application. Since taking office in 2007, Governor Bill Ritter and the Colorado Legislature have enacted several pieces of legislation to encourage and allow data sharing between state agencies. They recognized the needs that educators, schools, districts, parents, and the State have to analyze longitudinal data regarding factors including improving teaching and learning, informing public policy, fostering a culture of evidence-based decision making, conducting research, evaluating system and program effectiveness, and providing reports to various stakeholder groups.

Among many separate P-20 initiatives, two bills (HB 08-1364 and HB 09-1285) in particular have directed these data sharing initiatives. HB 09-1285 created a multi-agency central governance authority, the Government Data Advisory Board (GDAB), to advise the State Chief Information Officer and Chief Data Officer on the State's data strategy, policies, standards, architecture, and issues management. The Board is comprised of representatives of twelve State agencies, local governments, non-governmental organizations and research institutes, and a wide variety of education stakeholders.

The Board's mission over the next ten years is to provide guidance and recommendations on how the State should govern and manage data and data management systems to improve the efficiency and effectiveness of State government, citizen service delivery and policy-making. The goals of the Board are consistent with and supportive of the SDLS challenge to move from a collection-driven system to an enterprise-based, data sharing system. The commitment is to build a state-of-the-art data system using industry exemplars within and outside of education that is both student-centric and equips users with the necessary information and tools to positively impact student learning. The GDAB will work with the Colorado Department of Education to develop the governance framework required to ensure the long-term success of this initiative.

The SLDS grant arrives at an ideal time to fulfill immediate needs while capitalizing on current strengths. Colorado is poised to translate the investment of SLDS funds into a next generation data system. The converse is also true: without immediate financial investments that advance the capacity of the state's education data system infrastructure, the state's reform agenda cannot be fully realized.



*Increasing the effectiveness of government through information technology*



Thank you for the opportunity to support Colorado's SDLS grant application.

Sincerely,

A handwritten signature in black ink, appearing to read "Micheline Casey". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Micheline Casey  
Chair, Government Data Advisory Board  
Chief Data Officer  
Governor's Office of Information Technology

Dedicated to Excellence



Cherry Creek  
Schools

**Dr. Elliott Asp**

Assistant Superintendent  
Educational Services Center  
4700 South Yosemite Street  
Greenwood Village, Colorado 80111

November 29, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

I have the honor of serving as the Chair of the Data Sub-committee for Colorado's P-20 Council and the Assistant Superintendent for Performance Improvement for Cherry Creek Schools. I write to you in support of the Colorado Department of Education's (CDE) proposal for a State Longitudinal Data System grant.

As a P-20 Council, we set out a broad agenda for improving our policy framework behind the state's data systems, moving toward creating an infrastructure that would allow information sharing across agencies and with all stakeholders. Colorado's legislature and Governor successfully worked together to put this policy foundation in place. CDE has built on that framework and instituted powerful practices that help shape how we are able to serve our students. However, our work is not yet done. We still need to create a truly integrated state data system that will allow us to track the progress of students from pre-school to post-secondary education and the work force.

I have been involved in the process of Colorado's development of this SLDS proposal, and I am confident that the ideas articulated will have a powerful impact on student learning. CDE's proposal, the SchoolView Project, builds on existing state successes and creates a system that will meet the needs of students, educators, parents/guardians, researchers and policy-makers. Further, it will help facilitate a powerful change in the way the state agency and districts can work together, producing important cultural and structural shifts in the partnership.

We have worked hard in the Cherry Creek Schools to provide data that teachers and building administrators can use to improve instruction and increase achievement. This longitudinal data system proposed in the grant will greatly enhance our efforts and those of our colleagues across the state.

Colorado is a valuable investment: the policies are in place, the will to implement is clear, and the opportunity to positively impact student achievement is immense. I thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Elliott Asp".

Elliott Asp  
Assistant Superintendent for Performance Improvement  
Cherry Creek Schools

**University of Colorado Denver**  
**School of Education & Human Development**

**Office of the Dean**

Lynn K. Rhodes, Dean  
1380 Lawrence Street, 1149  
P.O. Box 173364  
Campus Box 106  
Denver, CO 80217-3364  
Office: 303-315-6343  
Office Fax: 303-315-6349

November 30, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

As an educator committed to improving the effectiveness of Colorado's teaching force, I would like to express my strong support for the application submitted by the Colorado Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

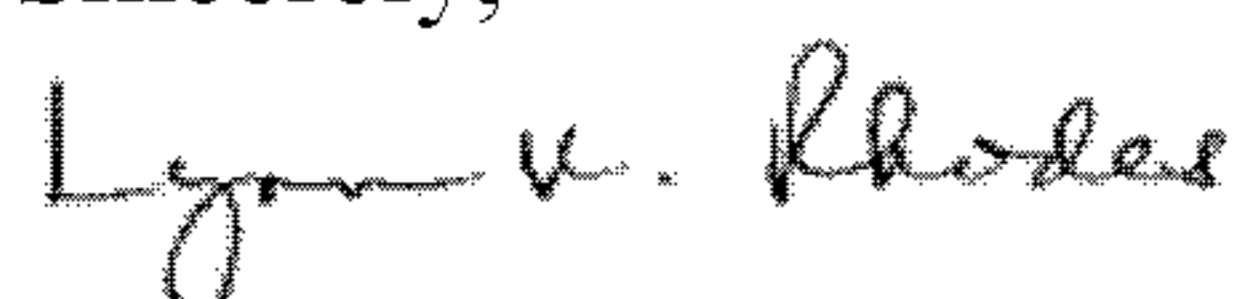
I have provided input in the development of the proposal, and have read drafts and suggested changes that were designed to ensure that educator providers could access and effectively utilize data to improve the preparation of teachers and other educators. I am confident that the plans expressed in Colorado's proposal will help increase student achievement statewide and will help Schools of Education as well as alternative providers better understand their roles in doing so.

The proposal by the Colorado Department of Education, the SchoolView™ Project, focuses on data system infrastructure development. Taking the Colorado Department of Education's progress in this area to the next level, this application outlines the development of a knowledge management system that will allow stakeholders, including Schools of Education, to create and apply knowledge in educational decision making.

The strategic objectives of this proposal will equip users to manage and use information for informed decision-making ensuring that all students in Colorado are ready for post-secondary workforce success. I am particularly interested in using the data to understand how more than a dozen programs in the School of Education and Human Development at the University of Colorado Denver serve the schools and districts in the Denver area: the persistence of our graduates in the profession and in high-need schools in particular, the impact of our graduates' work in schools on K-12 student learning, our graduates' performance in their positions, and our graduates' leadership roles in schools and districts, especially where that leadership positively influences educational equity. In addition to leading this work in my own School at UC Denver, I am leading the work of the Colorado Council of Deans of Education to share and discuss data with a focus on improving educator preparation and ultimately, K-12 student achievement.

With continued efforts in the area of providing comprehensive and meaningful data, Colorado educators, and the organizations that train them, will have additional tools in their efforts to help all children reach their educational potential. Thank you for your consideration.

Sincerely,



Lynn K. Rhodes, Dean and Professor



Colorado Association of School Boards  
1200 Grant Street  
Denver, Colorado 80203-2306  
Phone: (303) 832-1000 • (800) 530-8430  
Fax: (303) 832-1086

November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan:

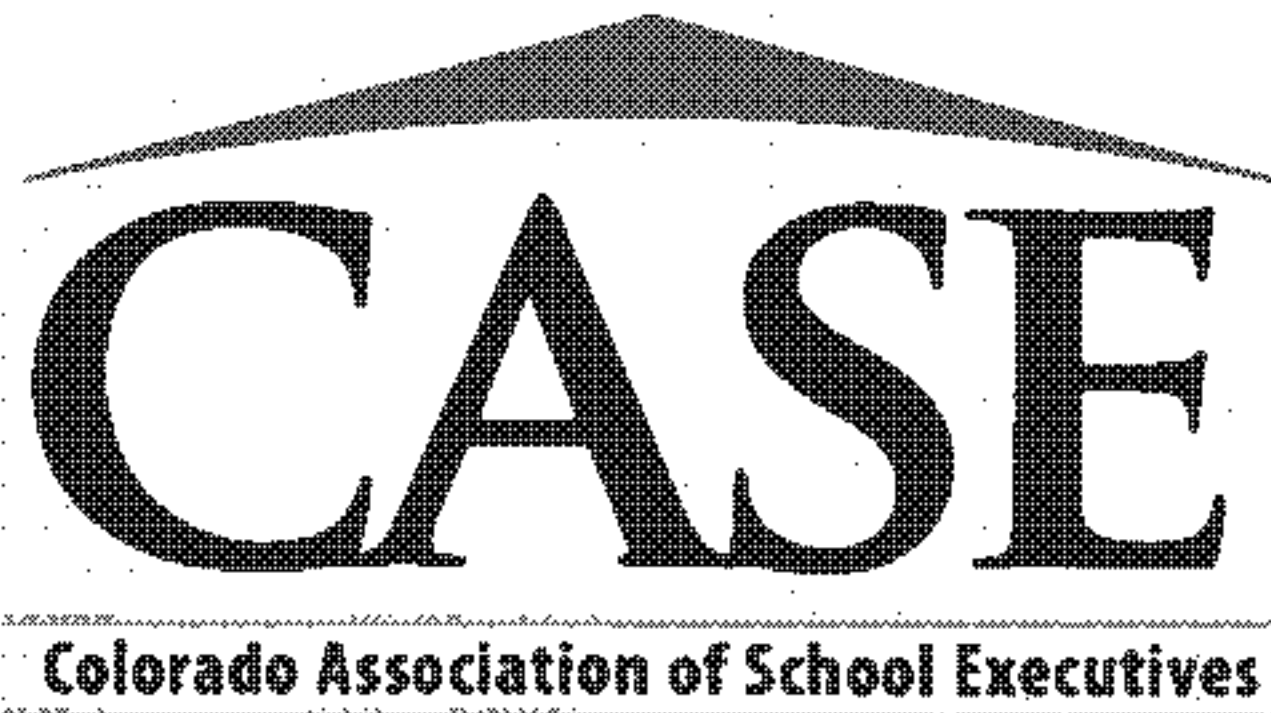
As Executive Director of the Colorado Association of School Boards, I am writing to express my support for the application being submitted by the Colorado Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

It is a strategic objective of the Colorado Department of Education as well as the Colorado Association of School Boards to provide the best possible educational advantage for all students. In that endeavor, a continuing commitment to academic rigor, relevance and accountability along with a level of cooperation and collaboration between and among our education system and other segments is critical. This proposal will equip users to manage and use information for informed decision-making ensuring all students in Colorado are ready for post-secondary education and workforce success.

The Colorado Association of School Boards supports the commitment of the Colorado Department of Education to provide comprehensive and meaningful data to Colorado educators in their efforts to help all children reach their educational potential. I hope you will consider Colorado's proposal and see what a valuable investment you could make in our state.

Sincerely,

  
Ken DeLay  
Executive Director



November 30, 2009

Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

As a professional association dedicated to promoting public education and supporting its leaders, the Colorado Association of School Executives (CASE) would like to add our strong support for the application by the Colorado Department of Education for a Statewide Longitudinal Data System (SLDS) grant. CASE has long been a leading voice for the move to longitudinal growth as a sensible way to measure student progress—instead of focusing only on a static growth measure, which sometimes punishes low income students unfairly.

CASE helped draft and pass a measure in the Colorado legislature several years ago to put longitudinal growth measurements in place and we have been extremely pleased by the progress made by the Colorado Department of Education. But this progress in designing a longitudinal growth system needs additional financial support to create the platform for better collection, dissemination and display of this critical educational information.

The proposal by the Colorado Department of Education, the SchoolView™ Project, focuses on data system infrastructure development. Improved systems are critically important in providing the ability to understand student strengths and target areas for improvement. The strategic objectives of this proposal will equip users to manage and use information for informed decision-making to help ensure all students in Colorado are ready for post-secondary education and workforce success. This strategic outcome for all school districts in Colorado has become a top priority for school administrators.

With continued efforts in the area of providing comprehensive and meaningful data, Colorado educators will have another tool in their efforts to help all children reach their educational potential. Thank you for your consideration.

Sincerely,

John Hefty  
Executive Director  
Colorado Association of School Executives

**CASE Departments**

CAES Colorado Association of Educational Specialists \* CAESP Colorado Association of Elementary School Principals \* CALET Colorado Association of Leaders in Educational Technology  
CASPA Colorado Association of School Personnel Administrators \* CASSA Colorado Association of Superintendents and Senior Administrators  
CASSP Colorado Association of Secondary School Principals \* DBO Department of Business Officials

November 30, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

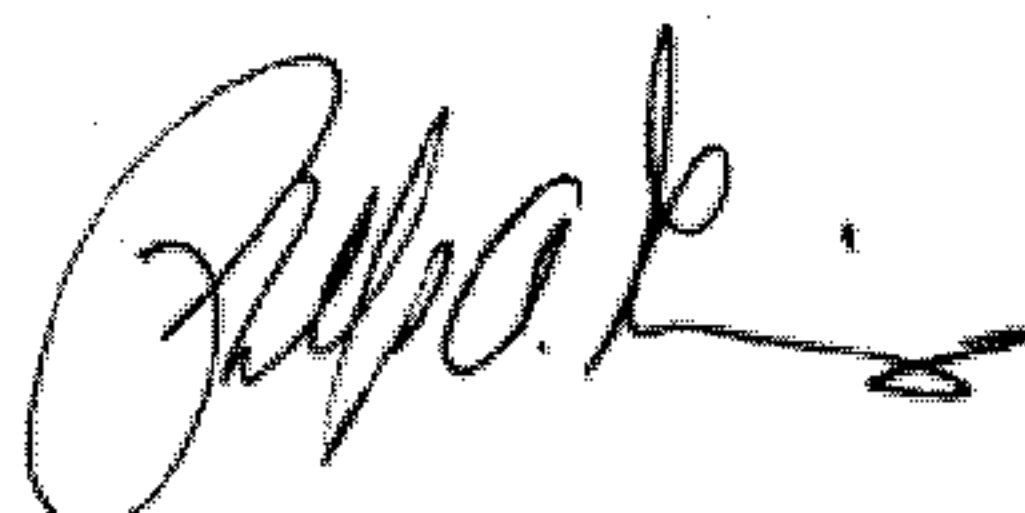
I write to express support for Colorado's application to the U.S. Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

Rose Community Foundation has invested \$150,000 in Governor Ritter's P-20 Council and more than \$300,000 in the development of Colorado's unique educator identifier system, including much of the political work that led up to the creation of what ultimately became successful legislation. I am confident the foundation community will continue to be active in Colorado's efforts to raise student achievement statewide. While the foundation community in Colorado is robust and consistently supports important education initiatives, additional funds are necessary to implement the system described in the Colorado Department of Education's SLDS proposal.

The proposal by the Colorado Department of Education, the SchoolView™ Project, clearly outlines the priorities and plans established by the P-20 Council, legislators, Governor Ritter and the Colorado Department of Education. The strategic objectives of this proposal will equip users to manage and use information for informed decision-making ensuring that all students in Colorado are prepared for post-secondary education and the workforce.

Coupled with Colorado's existing conditions, a grant from the U.S. Department of Education would pave the way for an effective data system that will help build knowledge and capacity among all of education's stakeholders. I am confident that Colorado is a valuable investment and thank you in advance for your consideration.

Sincerely,



Phil Gonring  
Senior Program Officer



# DANIELS FUND

December 2, 2009

Mr. Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Secretary Duncan,

Please allow me to express my support for Colorado's application submitted to the U.S. Department of Education for a Statewide Longitudinal Data System (SLDS) grant.

The Daniels Fund, where I serve as Senior Vice President of the Grants Program, has provided financial support for Governor Ritter's P-20 Council, the development of a teacher identifier, and many other critical K-12 education initiatives aimed raising the level of academic achievement of all Colorado students.

The data system outlined in this proposal will equip users to manage and use information for informed decision-making, ensuring that all students in Colorado are prepared for post-secondary education and the workforce. The foundation community in Colorado is consistently committed to initiatives to improve education; however, additional funds will be necessary to implement the system described in the Colorado Department of Education's SLDS proposal.

A grant from the U.S. Department of Education would pave the way for an effective data system that will help build knowledge and capacity among all of education's stakeholders. I am confident that Colorado is a valuable investment and thank you in advance for your consideration.

Sincerely,

Barbara Danbom  
Senior Vice President, Grants Program  
Daniels Fund



# COLORADO DEPARTMENT OF EDUCATION

201 East Colfax Avenue • Denver, Colorado 80203-1799  
303.866.6600 • www.cde.state.co.us

**Dwight D. Jones**  
Commissioner of Education

**Robert K. Hammond**  
Deputy Commissioner

**Kenneth R. Turner**  
Deputy Commissioner

December 1, 2009

The Honorable Arne Duncan, Secretary of Education  
U.S. Department of Education  
400 Maryland Ave.  
Washington, D.C. 20202

Dear Mr. Secretary:

I would like to express my support of the Colorado Department of Education's (CDE) State Longitudinal Data System (SLDS) grant application. Establishing a flexible P-20 data system in Colorado is a critical component of our comprehensive reform strategy focused on readying all students for postsecondary and workforce success. This system will play an essential role in (1) enabling the instructional connection to standards and assessments, (2) ensuring that there is a clear and common understanding of which schools comprise our lowest 5 percent and which serve as exemplars for replication, and (3) facilitating a highly effective human capital management strategy that supports great teachers and leaders.

The effective implementation of a P-20 longitudinal data system will provide crucial decision support for the leadership of educational improvement. Our vision is that this decision support will be routinely accessed and enhanced by users that strengthen their capacity to effectively manage those aspects of personal, school, district or state performance over which they have the greatest collective leverage. This requires access to high-quality and timely information and digital content, unprecedented transparency of information about student, classroom, school, district and state performance for all stakeholders, and maximized use of social collaboration tools and open-source application programming interfaces.

Our overarching goal is to continuously build the performance and knowledge-management capacity of students, parents, educators, administrators, policymakers, researchers and the public at large so that conditions support innovation and are ripe for self-sustaining continuous improvement. This environment will allow educators to learn and improve their practice, encourage students to learn and to understand their progress, and cause the public to develop informed perspectives about school performance and to become knowledgeable choosers of schools and educational programs.

I enthusiastically support Colorado's plan for the development of our information and knowledge management system and thank you for your consideration of this application.

Most sincerely,

Dwight D. Jones, Commissioner

cc: Robert K. Hammond, Deputy Commissioner



# Budget Narrative

## Budget Narrative - Budget Justification

Attachment 1:

Title: **Budget Narrative** Pages: **4** Uploaded File: **SLDS.BudgetNarrative-FINAL.doc**

**BUDGET NARRATIVE**

The Colorado Department of Education (CDE) is requesting a total of \$17,886,993 over three years for Project SchoolView™. Project SchoolView™ encompasses three key initiatives that are outlined below along with associated costs. The Foundational outcomes include activities that cross initiatives and that will take place throughout the project including training, change management, and enterprise data management strategies.

<b>Outcome</b>	<b>Goal</b>	<b>SLDS Grant</b>
Capture	P-20 Student-focused data is effectively and efficiently collected across multiple sources	\$7,412,400
Link	Data is effectively shared and exchanged across multiple state, agencies and school districts.	\$8,036,900
Provide	Stakeholder users are provided with understandable, timely and reliable information	\$1,140,400
Foundational	Enterprise Data Management Strategy	\$180,000
Foundational	Leading and Managing Change	\$955,750
	Indirect Costs	\$161,543
<b>TOTAL SLDS Grant Funding Request</b>		<b>\$17,886,993</b>

Detailed costs are directly tied to the project plan and are included in the section below. Cost assumptions are included in ED 524-Section C. Project responsibilities and anticipated FTE counts are included in the overall Project Narrative on pages 25-31.

<b>Project SchoolView™ - Capture</b>		
<b>Outcome</b>	<b>Year 1</b>	<b>SLDS Grant</b>
1.1, 1.2, 1.3	Define and publish statewide data collection standard	\$50,000
1.5, 1.6	Define and publish Unique ID Strategy (Student, Educator, Program)	\$500,000
1.8, 1.9	Develop and implement new standardized operational data store (Educator and Program Data)	\$1,900,000
1.7	Project Management	\$194,133
1.4	Contractor Workspace	\$16,000
	Training	\$190,667
	Travel	\$3,333
	<b><i>Year 1 Project Total- Capture</i></b>	<b><i>\$2,854,133</i></b>
	<b>Year 2</b>	
1.5, 1.6	Design system to capture educator data in the new standardized ODS	\$500,000
1.8, 1.9	Develop and implement “pull” data Collection Mechanisms &ETL to post from standardized ODS to EDW	\$1,725,000
1.4	Implement Capture Finance Data	\$312,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$190,667
	Travel	\$3,333

	<b><i>Year 2 Project Total - Capture</i></b>	<b><i>\$2,941,633</i></b>
	Year 3	
1.5, 1.6	Develop and implement and capture program data in new, standardized ODS.	\$650,000
1.5	Rewrite Legacy Program Reports that point against existing ODS.	\$250,000
1.4	Implement Capture Finance Data	\$312,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$190,667
	Travel	\$3,333
	<b><i>Year 3 Project Total - Capture</i></b>	<b><i>\$1,616,633</i></b>
	<b>Project SchoolView™ - Capture Total</b>	<b>\$7,412,400</b>

<b>Project SchoolView™ - Link</b>		
Outcome	Year 1	SLDS
2.1	Finalize and Publish Unique ID Architecture and Cross-Agency Requirements	\$175,000
2.1	Implement Centralized Unique ID Architecture and Application	\$2,400,000
2.2	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$127,917
	Travel	\$3,333
	<b><i>Year 1 Project Total - Link</i></b>	<b><i>\$2,916,383</i></b>
	Year 2	
2.1	Continue implementation efforts of the Centralized Unique ID Architecture and Application	\$2,400,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDE)	\$715,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDLE)	\$417,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$127,917
	Travel	\$3,333
	<b><i>Year 2 Project Total - Link</i></b>	<b><i>\$3,873,883</i></b>
	Year 3	
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDHE)	\$368,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDHS)	\$119,000
2.2	Implement Unique ID Interfaces at Initial State Agencies (CDLE)	\$417,500
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Training	\$127,917
	Travel	\$3,333
	<b><i>Year 3 Project Total - Link</i></b>	<b><i>\$1,246,633</i></b>
	<b>Project SchoolView™ - Link Total</b>	<b>\$8,036,900</b>

<b>Project SchoolView™ - Provide</b>		
Outcome	Year 1	SLDS
3.1, 3.2, 3.3, 3.4, 3.5	SchoolView™ Portal Enhancements	\$100,000
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Travel	\$3,333
	<b><i>Year 1 Project Total - Provide</i></b>	<b><i>\$313,467</i></b>
	Year 2	
3.1, 3.2, 3.3, 3.4, 3.5	SchoolView™ Portal Enhancements	\$100,000
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Travel	\$3,333
	<b><i>Year 2 Project Total - Provide</i></b>	<b><i>\$313,467</i></b>
	Year 3	
3.1, 3.2, 3.3, 3.4, 3.5	SchoolView™ Portal Enhancements	\$300,000
	Project Management	\$194,133
	Contractor Workspace	\$16,000
	Travel	\$3,333
	<b><i>Year 3 Project Total - Provide</i></b>	<b><i>\$513,467</i></b>
	<b>Project SchoolView™ - Provide Total</b>	<b>\$1,140,400</b>

<b>Foundational: Enterprise Data Management Strategy</b>		
Outcome	Year 1	SLDS
5.1	Data governance policies, processes and standards are established to manage the flow of data from capture to use	
5.4	Robust, sophisticated access and authentication technology and processes ensure the privacy and security of data	
	Training	60,000
	<b><i>Year 1 Project Total - Data Management</i></b>	<b><i>\$60,000</i></b>
	Year 2	
5.2	Master Data Management technology is implemented to ensure the quality, reliability and integrity of the data	
	Training	60,000
	<b><i>Year 2 Project Total - Data Management</i></b>	<b><i>\$60,000</i></b>
	Year 3	
5.3	Data stewards provide data quality audits as part of the ongoing monitoring of data quality on a daily basis via a user interface in the Master Data Management application	
	Training	60,000
	<b><i>Year 3 Project Total - Data Management</i></b>	<b><i>\$60,000</i></b>

<b>Foundational: Enterprise Data Management Strategy - Total</b>		<b>\$180,000</b>
<b>Foundational: Leading and Managing Change</b>		
<b>Outcome</b>	<b>Year 1, 2 and 3</b>	<b>SLDS</b>
6.1, 6.2	Dedicated change management leader is in place to ensure change processes are instituted throughout the entire implementation process Program reporting measures readiness and effectiveness of change mechanisms.	\$955,750
<b>Foundational: Leading and Managing Change - Total</b>		<b>\$955,750</b>
<b>Indirect Cost</b>		<b>\$161,543</b>
<b>TOTAL SLDS Grant Funding Request</b>		<b>\$17,886,993</b>

The State of Colorado will commit additional funding to successfully build and sustain Project SchoolView™. These funds will be in addition to the SLDS grant funds and will help provide operational funding for the longer term. These funding sources include:

- A state funding allocation of \$1.1M to develop and support the Educator ID program.
- Colorado's Race to the Top application will request additional funds to further advance the Project SchoolView™ - Provide outcome.
- The state will invest existing personnel and capital to implement and sustain this work.

Refer to the project narrative for a discussion regarding the sustainability of the proposed work.

# Budget Narrative

## Budget Narrative - ED 524 Section C Spreadsheet

Attachment 1:

Title: **Budget Narrative - ED 524 Section C** Pages: **4** Uploaded File: **SLDS.524SectionC-FINAL.doc**

**Project SchoolView™ - Form 524 Section C - Itemized Budget Breakdown**

		YEAR ONE	YEAR TWO	YEAR THREE	TOTAL
<b>1 PERSONNEL</b>					
	<b>SUBTOTAL PERSONNEL</b>	\$0	\$0	\$0	\$0
<b>2 FRINGE</b>					
	<b>SUBTOTAL FRINGE</b>	\$0	\$0	\$0	0
<b>3 TRAVEL</b>					
	Airfare, lodging, per diem and registration for two Project SchoolView™ representatives to attend two national conferences relevant to the proposed work in each project year, including the annual IES conference for SLDS grantees	\$10,000	\$10,000	\$10,000	\$30,000
	<b>SUBTOTAL TRAVEL</b>	\$10,000	\$10,000	\$10,000	\$30,000
<b>4 EQUIPMENT</b>					
	<i>SchoolView™-Capture</i> : Operational data store hardware	\$37,500	\$37,500	\$0	\$75,000.00
	<i>SchoolView™-Capture</i> - software costs	\$50,000	\$50,000	\$0	\$100,000.00
	<i>SchoolView™-Link</i> : Hardware for unique ID implementation calculated at 12% of development costs	\$100,000	\$100,000	\$0	\$200,000.00
	<i>SchoolView™-Link</i> : Software costs	\$150,000	\$150,000	\$0	\$300,000.00
	<b>SUBTOTAL EQUIPMENT</b>	\$337,500	\$337,500	\$0	\$675,000
<b>5 SUPPLIES</b>					
	Contractor workspace and supplies (\$2000 per year per contractor for space, phone, and internet connection in leased space), contractors will provide own laptop and software	\$48,000	\$48,000	\$48,000	\$144,000
	<b>SUBTOTAL SUPPLIES</b>	\$48,000	\$48,000	\$48,000	\$144,000
<b>6 CONTRACTUAL</b>					
	Project Management - 2 FTE x \$140/hr	\$582,400	\$582,400	\$582,400	\$1,747,200

	Data Modeling - continuing current process funded through 6/30/2010 for remaining 3 months to completion	\$50,000	\$0	\$0	\$0	\$50,000
	Change Management/Leadership - 5% of <i>SchoolView</i> <sup>TM</sup> - <i>Capture/Link</i> budget (equivalent to approx 2 FTE)	\$318,583	\$318,583	\$318,583	\$318,585	\$955,751
	Implement standardized Operational Data Store and capture student data: (1) Develop and implement new standardized Operational Data Store (\$1,225,000 total allocated over two years) (2) develop and implement 'pull' data collection mechanisms (\$1,725,000 total allocated over two years) (3) Migrate legacy student reports (\$500,000 total allocated over two years)	\$1,725,000	\$1,725,000	\$1,725,000	\$0	\$3,450,000
	Implement and capture educator data: A current project is underway to capture educator information, which will be completed before the Operational Data Store. This cost item covers posting of educator data to new ODS as referenced above.	\$500,000	\$500,000	\$500,000	\$0	\$1,000,000
	Implement and capture program data: (1) Develop, implement, and capture program data in new, standardized ODS (\$650,000) (2) Rewrite legacy program reports that point against existing ODS (\$250,000)	\$0	\$0	\$0	\$900,000	\$900,000
	Implement and capture finance data: (1) Design, develop, Implement, and capture finance data in new, standardized ODS (\$50,000 total allocated over two years) (2) Design, develop, and implement Colorado State Equal system (\$575,000 total allocated over two years)	\$0	\$312,500	\$312,500	\$312,500	\$625,000
	Publish Unique ID architecture and cross agency requirements - budgeted at 1% of overall <i>SchoolView</i> <sup>TM</sup> - <i>Link</i> budget	\$175,000	\$0	\$0	\$0	\$175,000



	SchoolView™ Portal enhancements: Add cross identifier reporting (student v. educator v. course v. agency)	\$100,000	\$100,000	\$300,000	\$500,000
	Implement Unique ID architecture: (1) Integration - SOA and Service Bus (\$1,100,000 total allocated over two years) (2) Identity, access, authentication management (\$3,200,000 total allocated over two years)	\$2,150,000	\$2,150,000		\$4,300,000
	Implement Unique ID interfaces/CDE - One time data conversion program to assign unique ID based on current file of all SASIDs (\$.50/record x 1,430,000 records (815,000 currently enrolled students + 560,000 seven prior years of graduates @ 80,000 graduates/year + 55,000 administrators/educators/staff.)) SASIDs are the state assigned student ID numbers currently used by CDE for K-12 students.		\$715,000		\$715,000
	Implement Unique ID interfaces/CDHE: (1) Match and data verification for Colorado Department of Higher Education records (\$1.25/record x 255,000 records (200,000 currently enrolled students + 50,000 four prior years of graduates + 5,000 administrators/educators/staff) = \$318,750 (2) .5 FTE for one year to resolve initial near-matches @ \$25 per hour = \$50,000.			\$368,750	\$368,750
	Implement Unique ID interface/CDHS - (1) Match and data verification for Colorado Department of Human Services records (\$1.25/record x 75,000 records = \$94,000) (2) .25 FTE for one year to resolve initial near-matches @ \$25 per hour = \$25,000			\$119,000	\$119,000
	Implement Unique ID interface/CDLE - Match and data verification for Colorado Department of Labor and Employment records (\$1.25/record x 668,000 records = \$835,000 allocated over two years)		\$417,500	\$417,500	\$835,000
	<b>SUBTOTAL CONTRACTUAL</b>	<b>\$5,600,983</b>	<b>\$6,820,983</b>	<b>\$3,318,735</b>	<b>\$15,740,701</b>

<b>8</b>	<b>OTHER</b>						
	Training for existing CDE staff and other users on technologies for sustainability budgeted at \$60,000 per year + 8% of <i>SchoolView</i> <sup>TM</sup> - <i>Capture</i> budget + 5% of <i>SchoolView</i> <sup>TM</sup> - <i>Link</i> budget	\$378,583	\$378,583	\$378,583	\$378,583	\$378,583	\$1,135,749
	<b>SUBTOTAL OTHER</b>	\$378,583	\$378,583	\$378,583	\$378,583	\$378,583	\$1,135,749
<b>9</b>	<b>TOTAL DIRECT COSTS</b>	<b>\$6,375,066</b>	<b>\$6,375,066</b>	<b>\$7,595,066</b>	<b>\$3,755,318</b>	<b>\$3,755,318</b>	<b>\$17,725,450</b>
<b>10</b>	<b>INDIRECT COSTS</b> – Years 1 and 2 calculated at \$536,583 (Travel, Supplies and Other categories + \$100,000 of Equipment costs) x the approved rate of 10.7%. Year 3 calculated at \$436,583 (Travel, Supplies and Other cost categories) x the approved rate of 10.7%.	<b>\$57,414</b>	<b>\$57,414</b>	<b>\$57,414</b>	<b>\$46,715</b>	<b>\$46,715</b>	<b>\$161,543</b>
<b>11</b>	<b>TRAINING STIPENDS</b>						
	<b>SUBTOTAL TRAINING STIPENDS</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>12</b>	<b>TOTAL COSTS</b>	<b>\$6,432,480</b>	<b>\$6,432,480</b>	<b>\$7,652,480</b>	<b>\$3,802,033</b>	<b>\$3,802,033</b>	<b>\$17,886,993</b>