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 # R384A100037

Closing Date: NOV 19, 2009

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This application was generated using the PDF functionality. The PDF functionality automatically numbers the pages in this application. Some pages/sections of this application may contain 2 sets of page numbers, one set created by the applicant and the other set created by e-Application's PDF functionality. Page numbers created by the e-Application PDF functionality will be preceded by the letter e (for example, e1, e2, e3, etc.).

Application for Federal Assistance SF-424 Version 02

* 1. Type of Submission	* 2. Type of Application:	* If Revision, select appropriate letter(s):
[ ] Preapplication	[X] New	
[X] Application	[ ] Continuation	* Other (Specify)
[ ] Changed/Corrected Application	[ ] Revision	

* 3. Date Received:	4. Applicant Identifier:
12/4/2009	

5a. Federal Entity Identifier:	* 5b. Federal Award Identifier:
	84-384A2009

State Use Only:

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

8. APPLICANT INFORMATION:

* a. Legal Name: Virginia Department of Education

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
546001771	809740129

d. Address:

* Street1:	101 N. 14th Street
Street2:	
* City:	Richmond
County:	
State:	VA
Province:	
* Country:	USA
* Zip / Postal Code:	23219

e. Organizational Unit:

Department Name:	Division Name:
Office of Educational Information Management	Division of Technology and Career Education

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

Prefix:	Mrs.	* First Name:	Bethann
Middle Name:	H		

* Last Name:	Canada		
Suffix:			
Title:	Director of Educational Information Management		
Organizational Affiliation:			
* Telephone Number:	(804)225-2951	Fax Number:	(804)786-0101
* Email:	BETHANN.CANADA@DOE.VIRGINIA.GOV		

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:

Statewide Longitudinal Data System Recovery Act Grants

13. Competition Identification Number:

84-384A2009

Title:

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

Virginia school divisions.

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

Longitudinal Data System Expansion - linking to Workforce and Postsecondary

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: all * b. Program/Project: all

Attach an additional list of Program/Project Congressional Districts if needed.
Attachment:
Title :
File :

17. Proposed Project:
* a. Start Date: 4/1/2010 * b. End Date: 9/30/2013

18. Estimated Funding ($):

a. Federal	**$ 17692564**
b. Applicant	**$**
c. State	**$**
d. Local	**$**
e. Other	**$**
f. Program Income	**$**
g. TOTAL	**$ 17692564**

*** 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.
[X] c. Program is not covered by E.O. 12372.

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

[ ] Yes [X] 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)**

[X] ** 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:	Mrs.	* First Name:	Bethann
Middle Name:	H		
* Last Name:	Canada		
Suffix:			

Title:	Director of Educational Information Management

* Telephone Number:	(804)225-2951	Fax Number:	(804)786-0101

* Email:	BETHANN.CANADA@DOE.VIRGINIA.GOV

* 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:
Virginia 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	$ 576,666	$ 588,199	$ 599,963	$ 0	$ 0	$ 1,764,828
2. Fringe Benefits	$ 197,645	$ 201,275	$ 205,460	$ 0	$ 0	$ 604,380
3. Travel	$ 67,000	$ 62,000	$ 2,000	$ 0	$ 0	$ 131,000
4. Equipment	$ 122,992	$ 0	$ 0	$ 0	$ 0	$ 122,992
5. Supplies	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
6. Contractual	$ 4,518,420	$ 6,234,801	$ 2,098,942	$ 0	$ 0	$ 12,852,163
7. Construction	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
8. Other	$ 2,000,000	$ 0	$ 0	$ 0	$ 0	$ 2,000,000
9. Total Direct Costs (lines 1-8)	$ 7,482,723	$ 7,086,275	$ 2,906,365	$ 0	$ 0	$ 17,475,363
10. Indirect Costs*	$ 79,844	$ 70,502	$ 66,855	$ 0	$ 0	$ 217,201
11. Training Stipends	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
12. Total Costs (lines 9-11)	$ 7,562,567	$ 7,156,777	$ 2,973,220	$ 0	$ 0	$ 17,692,564

***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 8.28%

(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%

ED Form No. 524

U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:
Virginia 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: Bethann H. Canada
Title: Director of Educational Information Mgt
Date Submitted: 11/20/2009

Approved by OMB 0348-0046 Exp.

Disclosure of Lobbying Activities

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

1. Type of Federal Action:	**2. Status of Federal Action:**	**3. Report Type:**
[ ] Contract [X] Grant [ ] Cooperative Agreement [ ] Loan [ ] Loan Guarantee [ ] Loan Insurance	[X] Bid/Offer/Application [ ] Initial Award [ ] Post-Award	[X] Initial Filing [ ] Material Change **For Material Change only:** Year: 0Quarter: 0 Date of Last Report:
4. Name and Address of Reporting Entity: [X] Prime [ ] Subawardee Tier, if known: 0 Name: Virginia Department of Education Address: PO Box 2120 City: Richmond State: VA Zip Code + 4: 23218- **Congressional District, if known:**	**5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:** Name: Address: City: State: Zip Code + 4: - **Congressional District,** if known:	
6. Federal Department/Agency: US Department of Education	**7. Federal Program Name/Description:** National Center for Education Statistics CFDA Number, if applicable: 84.384A	
8. Federal Action Number, if known: 84-384A2009	**9. Award Amount,** if known: $0	
10. a. Name of Lobbying Registrant (if individual, last name, first name, MI): Address: City: State: Zip Code + 4: -	**b. Individuals Performing Services** (including address if different from No. 10a) (last name, first name, MI): Address: City: State: Zip Code + 4: -	
11. 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: Bethann H. Canada Title: Director of Educational Information Mgt Applicant: Virginia Department of Education Date: 12/03/2009	
Federal Use Only:		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	
Virginia Department of Education	
PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: First Name: Bethann	Middle Name: H
Last Name: Canada	Suffix:
Title: Director of Educational Information Mgt	
Signature: _____	Date: 11/20/2009

ED 80-0013 03/04

SUPPLEMENTAL INFORMATION REQUIRED FOR DEPARTMENT OF EDUCATION GRANTS

1. Project Director:

Prefix:	* First Name:	Middle Name:	* Last Name:	Suffix:
Mrs.	Bethann	H	Canada	

Address:

* Street1: 101 N. 14th Street

Street2:

* City: Richmond

County:

* State: VA* Zip / Postal Code: 23219 * Country: **USA**

* Phone Number (give area code)	Fax Number (give area code)
(804)225-2951	(804)786-0101

Email Address:

BETHANN.CANADA@DOE.VIRGINIA.GOV

2. Applicant Experience

Novice Applicant [ ] Yes [X] No [ ] Not applicable

3. Human Subjects Research

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

[X] Yes [ ] No

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

[X] Yes Provide Exemption(s) #: 1,5

[ ] No Provide Assurance #, if available:

Please attach an explanation Narrative:

Attachment:
Title : Exempt Research Narrative
File : E:\DraftDocuments\Exempt Research Narrative.doc

Exempt Research Narrative

VDOE is proposing to conduct research studies involving human subjects: a study that will provide estimates of individual teacher impact in the classroom, a study of students' postsecondary outcomes, and a study of individual students' state assessment results in an effort to measure student growth from year to year. Both studies will involve using individual student assessment results.

These research activities are covered by exemptions number 1 and 5. The research involves normal educational processes – the testing of students; and is designed to evaluate educational programs.

Project Narrative

Project Narrative - Project Abstract

Attachment 1:
Title: **Virginia LDS Grant Project Abstract** Pages: **1** Uploaded File:
F:\AllTheARRADocuments\FinalProducts\VirginiaLDSProjectAbstract.pdf

Virginia's Longitudinal Data Systems Enhancement Project

The Virginia Department of Education (VDOE) —in partnership with the Office of the Governor, the State Council of Higher Education (SCHEV), the Virginia Community College System, the Virginia Information Technologies Agency, and Virginia's workforce agencies— proposes to expand on the advancements we have made through our current Statewide Longitudinal Data Systems (SLDS) grant. VDOE, SCHEV, and several workforce agencies have completed the work needed to meet two of the seven data system capabilities and eight of the 12 data system elements required by the America COMPETES Act, and we have partially met another four capabilities and two elements. In order to establish a comprehensive, longitudinal P-20 data system, we propose to:

- **Create an integrated K-12 student-teacher information system that matches individual teachers to students**. We will accomplish this by developing and validating course enrollment/completion and teacher/principal evaluation data collections, upgrading the existing teacher licensure system, and developing a needs-based competitive grant program for local school divisions to support their efforts towards system integration.
- **Create a longitudinal data linking and reporting system with the ability to link data among state agency data sources, including K-12, higher education, and workforce systems**. Using a federated system to merge data across agencies, we will: develop a rubric to document data element definitions, data requirements, and technical requirements for de-identified data sets that can be linked among agencies; build a central linking directory based on data sharing agreements in place or established as part of the grant project; and establish a query process for authorized user access that uses the linking directory to anonymously join individual-level records from multiple data sources.
- **Develop a web-based portal to provide one-stop access to education and workforce data by policymakers, educators, the public, program directors, researchers, etc**. To increase the accessibility of existing data, we propose a portal with different levels of access for publicly-available data and reports, as well as access to non-public data for authorized users.
- **Design a data management and control system that enables us to maximize data quality, ensure accessibility with appropriate security, and enhance the usefulness of the data in both existing and proposed systems**. We plan to develop and implement comprehensive cross-agency data sharing policies and practices and standards for data exchange, as well as data security measures that maintain privacy of personally identifiable information, and clear protocols for role-based data access at all levels. We also intend to enhance existing data audit systems to improve data quality, validity, and reliability.
- **Develop a mechanism for postsecondary institutions to receive transcript data**. We propose to develop a secure mechanism to permit postsecondary institutions to receive high school transcript data electronically, and are proposing to use grant funds to carry out a pilot project with VCCS and selected four-year institutions for electronic transfer of transcript data to them, and for integration of those data into existing systems.

For each outcome, we plan to develop and implement customized live and electronic training tools to meet a variety of user needs. Completion of the proposed project will propel Virginia's data collection, reporting, and analytic capabilities far beyond current levels, and will result in a statewide longitudinal data system that will be fully able to meet all the required data system capabilities and data elements.

Project Narrative

Project Narrative - Project Narrative

Attachment 1:
Title: **Virginia LDS Narrative** Pages: **31** Uploaded File:
G:\AllTheARRADocuments\FinalProducts\VirginiaLDSNarrative.pdf

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(a) NEED FOR PROJECT

Virginia began establishing a statewide longitudinal data system in 2002. Since that time, the system has evolved significantly to enable the Commonwealth to meet state and federal reporting requirements while providing significant data and information to educators throughout the Commonwealth and to the public. In the 21st century and beyond, we must increase our citizens' education and training levels to support their quality of life and economic stability. To accomplish this, it is critical that policymakers, program directors, educators, researchers, and citizens have access to high-quality information to make informed decisions as they direct and navigate the education and workforce training system. Such information can only come from state-of-the art data and reporting systems. This request for funding was developed through a partnership among the Governor's office and Virginia's education, workforce, and information technology agencies, to propel Virginia's data collection, reporting, and analytic capabilities far beyond current capacities.

Current status of the State's statewide, longitudinal data system

Virginia established its statewide longitudinal data system in part to meet the data collection and reporting requirements of the Elementary and Secondary Education Act (ESEA). As the data collection tools were being established, state leaders recognized the critical role the state should play to ensure that all of our school systems—including those in small, rural, economically depressed communities, and others that have not invested in local data warehouses—had secure access to current and historical student level data in ways that would directly impact instruction at the local level. Virginia's solution to meeting this need is the Educational Information Management System (EIMS) managed by the Virginia Department of Education (VDOE). The EIMS system leverages the data collected for reporting requirements to provide rich decision support tools to Virginia school division[1] personnel.

Appendix C shows the status of Virginia's data systems as they relate to the required capabilities and key elements defined in the request for applications (RFA). A review of Appendix C shows that VDOE, the State Council of Higher Education for Virginia (SCHEV), and several workforce agencies have completed the work needed to meet two of the seven required capabilities and eight of the 12 required elements. We have partially met another four capabilities and two elements; and continue to have two unmet data system elements—student-level transcript information and other information determined necessary to address alignment and adequate preparation for success in postsecondary education. Even with significant progress, Virginia has the following limitations with respect to our longitudinal data system:

- Student course enrollment data in K-12 is limited to course enrollment for students in grades 6-12 in mathematics and science; VDOE does not currently collect course outcomes;
- K-12 teacher data are collected individually and are linked to schools and the names of courses they teach (i.e., their work assignments). Teacher data cannot be connected to individual students.
- There is no electronic means to link teacher course assignments to their preparation programs. As well, there are known data quality issues in the system that must be addressed to improve our ability to use the data for high quality research.[2]
- VDOE's lack of a statewide link between students and teachers hampers our ability to

[1] In Virginia, the term "division" is synonymous with the term "district" used by other states.
[2] There are no known data quality issues for data elements required for federal reporting.

provide historical data on teacher impact in the classroom. Currently, school leaders have the option of including a unique teacher identifier on the student's assessment record and an effort under the current LDS grant will optionally provide teacher access to historical data on current students only. School divisions that choose these options can access historical assessment data by teacher.

- There is no systematic or automated approach to de-identifying data for analytic use in the education and workforce agencies;
- While required on the high school transcript, the K-12 unique identifier must be manually entered into postsecondary data systems, resulting in poor data quality when data between the state agencies are required for merge;
- Virginia's P-20 data systems span several state agencies, and there is no automated system for secure linking of student-level information across agencies;[3]
- Not all reports and data are available from a single, user-friendly web portal, and reports that can be made available to the public must be created in an ad-hoc manner by agency staff—an inefficient, labor-intensive process that can largely be automated;
- The development of cross-agency data sharing policies and practices is in its early stages—the "initial" level on the Capability Maturity Model[4]—and no training programs are available for agency or local school personnel on appropriate cross-agency data sharing practices; and
- Agencies responsible for workforce development have significant challenges meeting their accountability requirements due to inconsistent data definitions between agencies and inefficient processes available to link and analyze data.

Despite these significant limitations, Virginia has accomplishments that demonstrate our commitment to continuously enhancing the data system and to appropriate use of prior longitudinal data system grant funds. These include:

- Institutionalizing the assignment of a unique identifier to each student;
- Integrating multiple reporting requirements into a single state student record collection; and
- Establishing and continuously enhancing the warehouse making data accessible to authorized school division personnel.

The data warehouse, available to all school divisions, contains nine years of data from high stakes assessments required for state and federal accountability purposes within the K-12 public school system. Recognizing the significant limitations in local data capabilities for many of our school divisions, our goal is to provide to our schools the most reliable and comprehensive information available. The warehouse currently permits users to disaggregate overall assessment and sub-strand results by student and includes students' longitudinal assessment history.

Virginia's current Longitudinal Data Systems Expansion project, funded in 2007 at $6.05 million and scheduled to be completed by the end of Federal fiscal year 2010, has:

- Established a standard electronic student record for transfer from school-to-school.
- Adopted a standard electronic transcript for high schools to use electronic systems to

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[3] The development of a system to link early care and education to the K-12 system is in process with funding from the US Department of Health and Human Services.

[4] Paulk, Mark C., Weber, C.V., Curtis, B., Chrissis, M.B. (1994). The Capability Maturity Model: Guidelines for Improving the Software Process. New York: Addison-Wesley Professional.

automatically generate and send paper, pdf, and electronic transcripts to higher education.

- Provided additional data types and reports in the data warehouse, including:
  - The Preliminary Scholastic Aptitude Test (PSAT)
  - The Scholastic Aptitude Test (SAT)
  - Advanced Placement (AP) Tests
  - The ACT tests
  - Pre-literacy screenings
  - Postsecondary enrollment and completion information
- Supported school divisions in addressing data quality issues through comprehensive training to enhance awareness of the need for quality data and accountability for quality data.
- Developed a "watch list" report that enables K-12 educators to identify students at risk of not succeeding in school using indicators such as attendance, performance in reading and math, age, and retention.
- Developed the capability for school divisions to optionally upload schedules that will allow teachers access to data on current students (in progress).
- Engaged stakeholders and subject matter experts in statewide workshops that resulted in topical advisory papers on topics such as:
  - Workforce readiness
  - Linking students to teachers
  - Data exchange best practices
  - Academic and career plans

In enhancing the longitudinal data system, we have recognized the power of the Schools Interoperability Framework Association's (SIFA) specification to improve data quality and reduce local administrative burden. SIF specifications define the rules for how software programs transmit data objects from one data system to another. Virginia has provided software, installation, and training to 120 of the Commonwealth's 132 school divisions to help them adopt SIF-certified software and use it to reduce administrative burden. VDOE staff are active members of SIFA, serving on the Executive Board and the Student Record Exchange/e-Transcript Task Force. A Virginia school division employee serves on the elected Technical Board, and VDOE has purchased memberships in SIFA for all Virginia school divisions. State monies fund the software licensing for the Zone Integration Server and the Student Information System Agent—which together, permit data to be transferred seamlessly from one data system to another, and enables school divisions to obtain student identifiers for new and transferring students without human intervention. The success of this effort in Virginia has prompted 62 school divisions to expand their use of the SIF specification for local "horizontal" use, resulting in improved quality of local data and further reduced administrative burden. VDOE's contract permits school divisions to use the server and agent for horizontal SIF-applications at no cost.

Using data to support educational goals in Virginia

The establishment of and enhancements to the longitudinal data system have played a key role in supporting policymakers' ability to use data to inform state educational goals. Our accountability system is a woven blend of state and federal requirements that include:

- State school accreditation standards and public reporting (K-12);
- Federal accountability and reporting requirements, which cover the lifespan and several education and workforce agencies and many federally funded programs (e.g., the Elementary and Secondary Education Act, as amended; the State Fiscal Stabilization Fund (SFSF); the Perkins Act; the Individuals with Disabilities Act (IDEA); Workforce Investment Act; and Title IV of the Higher Education Act.
- State-established Institutional Performance Standards for state institutions of higher education as required by Virginia's Higher Education Restructuring Act of 2005.

Virginia's two primary educational communities—K-12 and higher education—maintain separate longitudinal data systems through separate executive branch agencies. The data systems currently permit the state to calculate all of the required components of state accreditation and federal accountability and reporting requirements; many but not all of the proposed SFSF requirements, and many of the reporting mandates from the state and federal government.

Virginia's education improvement goals, which are directly aligned with the educational principles of the American Recovery and Reinvestment Act of 2009 (ARRA), include: eliminating the achievement gap and increasing the academic success of all students; assisting chronically low-performing schools in meeting state and federal accountability standards and supporting all schools to reach excellence goals; supporting efforts to help all children enter kindergarten with the skills they need for success; improving teacher effectiveness; increasing the college and career readiness of high school students; developing approaches to improve transitions among levels of education, promoting student success, and encouraging students to continue their education; developing strategies for data systems that provide information about students at all educational levels; and maximizing higher education access and affordability. Below we provide examples of how Virginia's longitudinal data system (LDS)—current and proposed—supports our work to meet these goals as aligned with the ARRA principles.

Making progress toward rigorous college- and career-ready standards and high-quality assessments that are valid and reliable for all students.

Virginia established a standards and assessment program in the mid-1990s with a commitment to continuous quality improvement. Our LDS permits Virginia's leaders to conduct research and analysis to inform this process. For example, in partnership with Virginia Tech, VDOE has studied the links between postsecondary enrollment and state assessment results, and we are currently assessing the associations between first-year college outcomes and state assessment data. The broad goal of these studies is to better understand the kind of preparation Virginia's students need to achieve postsecondary success—and then use this information to inform and support parents, educators, as they strive for educational excellence to maintain or enhance their quality of life. Moving forward, we plan to further connect college readiness to the state assessment program by conducting analyses of specific content standards that, when met, describe the type of work that students must achieve to be ready for postsecondary education.

Establishing pre-K to college and career data systems that track progress and foster continuous improvement.

The LDS has allowed Virginia to provide aggregate data and information to the public and policymakers, while the data warehouse provides confidential and sensitive data to authorized education personnel to help drive school improvement.

State officials rely on the data to provide policymakers and program directors the information they need for continuous improvement. Policymakers, including the Governor, General Assembly, Virginia Board of Education, and officials at VDOE, SCHEV, workforce development agencies, and institutions of higher education, including the Virginia Community College System (VCCS) rely on LDS data to inform their work. For example, VDOE creates an annual report that provides state lawmakers with performance indicators associated with 12 state

funded educational programs for at-risk students.[5] Virginia also uses the longitudinal data system to complete portions of reports required by lawmakers, such as a 2007 study of high school dropout and graduation rates.[6] While we have begun an analysis of the first cohort of students for which high school and postsecondary course outcomes will be linked, the current process is extremely labor intensive. Our proposed data linking and reporting tools will enable agency staff to invest more time in other critical needs across the P-20 education system.

VDOE's program offices work with VDOE's Office of Educational Information Management (OEIM) to develop technical applications that meet program-specific needs. For example, our Office of School Improvement has the capability to provide schools with information about students who have failed state-wide assessments for two or more years in a row; our gifted education specialist has devised a reporting tool to support school divisions' ability to reduce disproportionality in identification of gifted students; the VDOE office that administers Title I and several programs under ESEA uses the data to evaluate the impact of various education programs on student achievement; and VDOE's centralized participation in the EdFacts program has enhanced data quality and reduced the reporting burden on program offices.

The SCHEV Student Data Warehouse is used extensively for standard and ad hoc reporting on postsecondary education. For example, SCHEV reports on enrollment, retention, and degrees awarded; costs of college enrollment; financial aid; and the number and percent of students who participate in remedial coursework in Virginia's higher education system, including VCCS.

Publicly available data

A standard set of reports are publicly available on VDOE's website (http://www.doe.virginia.gov/VDOE/Publications/), including summary data for required and commonly requested information such as numbers of students enrolled, graduated, dropped out, and participating in special educational instructional services. Virginia also provides public access to an assessment outcomes tool, which enables users to specify the state assessment outcomes of interest (e.g., by state, division, school, grade level, content area, etc.). The data are disaggregated by student subgroups where permissible under privacy policies. Other summary data are available through a wide variety of links and web-based tools, such as school-, division- and state-level report cards; aggregate data on discipline, crime, and violence in Virginia's schools; on-time graduation rates for student cohorts; and special education performance reports. This information is often used to inform statewide and school division policy and program improvement, and provides researchers with access to information for school, division, and state-level analysis.

Due to technological and resource limitations, VDOE data available to the public via our web site are "siloed." Data are available by type of dataset (graduation/completion, assessment, discipline, free-reduced eligibility, etc.), but are not accessible in a manner that easily allows them to be linked for further analysis. Under the current system, new data requests—even for publicly available data—typically require significant person-hours to complete due to dated systems and an overall lack of automated reporting capabilities. For example, a researcher interested in the pass rates on statewide assessments in schools with a population of students where 80 percent or more are eligible for free or reduced lunch would have to download several

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[5] see http://sfc.state.va.us/pdf/Jt%20Sub%20Education/October%2022%202008/IIIa%20-%20Joint%20Subcommittee%20At-Risk%20Programs%20Funding%2010-22-08.pdf

[6] Available online: http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/SD162007/$file/SD16.pdf

separate datasets and perform a manual match.

The modernized web-based portal and reporting tools we propose will make more data available to a broader audience, and streamline the ad-hoc reporting process. Upon completion of the proposed project, the majority of ad-hoc data requests will be completed by the user, who will develop custom reports without significant time investments from agency staff. VDOE and our technology development partners at Virginia Information Technologies Agency (VITA) Enterprise Applications Division (EAD) recently pilot-tested the feasibility of using the proposed data tool in tabular, graphic, and geographic information systems (GIS) formats. The pilot test results may be viewed at https://test.veap.virginia.gov/DOEDemo/rdpage.aspx.

Quite significantly, the data tools proposed in this application will provide authorized users in Virginia's education and workforce agencies with streamlined data merging and reporting tools. The tools will result in richer data reports and greater analytic capability than currently available—while reducing staff work. By merging de-identified data, we will be compliant with state and federal privacy laws, while meeting critical data reporting requirements and policy-development needs.

Secure and restricted use data availability

Virginia's K-12 data warehouse was developed with a more focused goal of providing data and information that informs instructional practices at the state, division, school and, optionally to the teacher levels. The data warehouse provides school divisions and schools with secure access to yearly and longitudinal data and information at the student or aggregate level depending on the users' interests. Users have a wide variety of reports to access, and have filter options to specifically review information from students with different characteristics or outcomes, including filters for student subgroups (e.g., race/ethnicity; gender; disability and English language learner status); performance levels on state assessments; and credential type for high school graduates and completers. The initial warehouse development focused on providing authorized users with access to state assessment outcomes. Currently, the warehouse includes nine years of assessment data at the student level, with the last five being longitudinal. As described earlier in this proposal, we have recently added several new indicators of college readiness, college enrollment, early literacy, high school assessments passed (i.e., verified credits) and an early warning indicator report.

Our schools regularly use the data warehouse to support instructional improvement, as evidenced by ongoing usage of the system—the longitudinal performance reports were accessed 2686 times by users in all 132 of our local school divisions in the 30 day period ending November 16, 2009. Continued requests for training and the regular feedback Virginia's EIMS users provide to the state also support continuous system improvement. Recently, one of our large school divisions requested that the VDOE provide technical assistance so it could evaluate certain aspects of its special education instructional program. As part of the work, VDOE provided a wide range of data from the VDOE LDS including staff counts, endorsements, and placement types; and student outcomes, demographics, and educational program placement. The data allowed the LEA to consider its staffing model in conjunction with student outcomes in comparison to the models used in other large school divisions in Virginia. As a result, VDOE staff are sharing the indicators with other school divisions to determine whether they would find it useful for VDOE to develop comparable indicator reports.

School division personnel are enthusiastic about the potential upgrades to the data warehouse, at least in part because nearly all updates are at their request. We recognize, however, that school

division personnel are concerned about the new data reporting burdens needed to meet federal requirements. To partially address this issue, we have requested funds for a need-based competitive grant award for school divisions in the proposal to help them develop efficiencies in data collection and reporting (e.g., expansion of SIF-compliant technology) and to enhance educators' successful transition to using the new data to support instruction. Our vision for the proposed school division grant program will have applicants propose data system efforts that support one or more of the four ARRA reform areas; for example, a division may propose to improve their human resources system to include teacher and principal evaluation data, to implement an instructional improvement system, or to offer professional development for teachers and principals on data for decision-making.

Making improvements in teacher effectiveness and in the equitable distribution of qualified teachers for all students

Virginia is committed to improving teacher effectiveness and in the equitable distribution of qualified teachers. The Commonwealth has adopted licensure requirements that offer potential teachers flexibility with regard to their route to licensure and endorsement, including a robust career-switcher program. The state provides funds to teachers who become nationally board certified and for mentoring, and incentive funds to increase the quality of Virginia's middle-school mathematics teachers. Our current LDS permits Virginia to meet federal reporting requirements for highly qualified teachers.

Nonetheless, the use of the LDS to support improved teacher effectiveness is one of the significant gaps we intend to fill with the proposed project. We have just begun the work required to maximize the potential of teacher data in a statewide LDS. For example, we have partnered with researchers at the University of Virginia to study the variables that impact teacher retention to develop an understanding of the characteristics of staff retention in schools. This work has helped us identify data quality issues and to identify as additional critical variables that we need to collect and validate to ensure we are maximizing the value of the data to improve educational decisions. Our proposal includes the development of a new data collection system that links students to course enrollment, course grades, and to the teachers providing instruction in each course. We also propose to develop measures of student growth and teacher impact that can be applied to the new data; so we can move beyond documenting the minimum expectation for our teachers to using teacher effectiveness data to support continuous improvement.

Providing intensive support and effective interventions for the lowest-performing schools

Virginia is committed to effective intervention in low-performing schools, and has a track record of success to build on. We define chronically low-performing schools as those schools that do not meet state accreditation requirements for three or more consecutive years. In the 2006-2007 school year, 58 Virginia schools were defined as chronically low performing; in the current year, we have only 11 chronically low-performing schools, despite increasing performance benchmarks. Based on federal ESEA accountability, we currently have six Title I schools sanctioned for five or more years in English and two schools sanctioned for five or more years in mathematics. The results are at least in part attributable to effective leadership from our state Board of Education, Superintendent of Public Instruction, and the VDOE Office of School Improvement (OSI); all of these groups rely on LDS data. For example, OSI has established a suite of data tools that support the State Board, Superintendent, and VDOE staff in understanding student outcomes available from the state, including assessment outcomes, graduation rates,

student retention/promotion, and teacher retention and turnover. The state Board requires data to support a variety of decisions they need to make regarding school accreditation status; and the schools and school divisions use the data available in EIMS to support their school improvement work.

Other data uses that support low-performing schools include several statewide longitudinal analyses that VDOE has conducted in recent years. In 2008, we conducted an historical analysis of dropouts in the 2007-2008 school year. The results have informed our development of the watch-list report in the data warehouse, and VDOE has presented the findings to educators throughout the Commonwealth and outside the state to demonstrate potential uses of the LDS. The analysis is continuing in 2009 with a greater emphasis on understanding how state assessment data relate to the probability that students will drop out of school.

Required data system capabilities and key elements to be developed or improved

Virginia has invested significant resources to meet the educational goals described above by providing a) quality standards; b) program requirements based on research findings; c) expert technical assistance; d) financial resources; and e) available data to support educational improvement. The additional LDS capabilities we propose will provide critical support to the state's efforts to meet these and other educational goals.

The Commonwealth plans to develop or enhance each of the **seven required capabilities of a statewide, longitudinal data system**, as described below.

- *Enhance the Commonwealth's ability to examine student progress and outcomes over time by linking individual-level student data from K-12 education, postsecondary education and the workforce system; and*
- *Enable the exchange of data among agencies and institutions within the State and between States to inform policy and practice.*

Linking K-12 and higher education systems

The proposed data system enhancements will provide information with more breadth and depth than is available today to policy makers, program directors, and localities to help drive funding decisions into high priority areas. For example, by linking high school performance indicators such as course enrollment, course grades, and end-of-course assessments to higher education enrollment and outcomes data, the state can improve the quality of guidance offered to students, parents, educators and leaders in terms of college readiness indicators; provide a more detailed definition of indicators associated with students who are prepared for college; and improve support to communities with strong high school achievement but low college-going rates.

Once completed, the proposed data merging and reporting tools will provide users with an efficient tool to access to disparate data sources currently available from separate sources within and across agencies . The new tools will also provide Virginia with an ongoing process to continuously validate and expand upon initial research and analytic findings in a cost-effective manner. Our proposed reporting system will give users access to a variety of output types including traditional spreadsheet and flat files, graphs and charts, and mapping capabilities.

Collaboration with workforce agencies

As encouraged in the RFA, we have established collaborations with workforce agencies in Virginia to design a system that meets the educational requirements and currently meets workforce needs for longitudinal data to evaluate workforce system performance. VDOE has already engaged stakeholders to obtain their input and advice on the topic of collecting and using

data to study workforce readiness.[7] One recommendation was to ensure that employment indicators can be linked to student data. The Virginia Employment Commission (VEC) collaborated on this proposal and will provide employment outcomes and wage data through the proposed data linking tools. In addition to using these data to measure employment outcomes for authorized for educational programs, we are proposing to use these tools to support accountability and legislatively mandated evaluation requirements for a myriad of workforce development programs in Virginia. As part of the grant work, we propose to leverage the fixed costs required to build the tools to meet the requirements of the educational longitudinal data system to continue Virginia's work towards the development of integrated performance indicators for its workforce programs using available administrative data. We view this as a cost-effective approach to evaluate the impact of educational and training programs Virginia provides to adults to improve employment retention, wage gains, and attainment of postsecondary credentials. The proposed data linking tools are scalable—in the future they may to be used to link data from other agencies such as health/social services—although we are not requesting funds to make these links in this proposal.

We have included funds need to begin applying recommendations made in a previous evaluation of workforce programs conducted in 2007 by the Upjohn Institute for Employment Research. The evaluation recommended the following to enrich and make the evaluation results more informative as envisioned by the state legislature: (1) add a benefit-cost indicator in order to compare program performance on a cost efficiency basis; (2) standardize several program definitions to ensure that outcome indicators meaningfully compare programs; and (3) identify research issues that are of paramount interest to policy makers over and above the performance indicators and determine the data needed to answer these issues. Much of the work required to automate reporting for workforce evaluation purposes must be completed in any case to build an automated system to meet federal educational program reporting and accountability requirements. As such, our work will be informative to the education, workforce, and training community for program accountability purposes, as well as workforce policy and resource allocation decisions, and is congruent with the purpose of the Institute for Education Sciences (IES) Statewide Longitudinal Data System (SLDS) Grant Program.

- *Linking student data with teachers primarily responsible for providing instruction.*

Teacher quality is critical to improve student learning. Research suggests that measuring teacher quality requires more information than is available from licensing systems—teacher credentials and years of experience have limited predictive power in determining teacher quality.[8] Our proposed work to link student data to the teachers who provide classroom instruction is a first step in providing teachers, school administrators, policymakers, and researchers with critical information about the quality of teachers in Virginia's classrooms. We propose to build a data collection and reporting system to collect course enrollment and course outcomes by student and teacher. The data will be used to connect state assessment data and course enrollment and outcomes to all teachers. This work will enable VDOE to meet the SFSF requirement to link

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[7] CIT Connect (2009). Workforce readiness: Data governance/data element definition final report (A7). Paper prepared for the Virginia Department of Education, April 30, 2009.

[8] Rivkin, S.G., Hanushek, E.A., & Kain, J.F., (2005). Teachers, Schools, and Academic Achievement. *Econometrica*, 73, 417-458; Kane, T.J., Rockoff, J.E., & Staiger, D.O. (2008). *Economics of Education Review, 27*, 615-631.

students to teachers as well as the requirement to capture student-level transcript information. We will work with researchers to develop a growth model and a valid method of estimating individual teacher impact on student achievement in reading and mathematics for students in grades three through eight. The data collection and reporting system will enable VDOE to provide teachers and other authorized school division personnel with access to student growth measures, teacher impact estimates, student course taking information, and other performance indicators.

We also plan to develop a training program to inform users of appropriate ways to make use of the estimates and available reports. Our training program will include live and electronic training tools to support a variety of user needs. We have already engaged our key stakeholders on this issue to learn about their needs and concerns, and will use the information gathered through our stakeholder engagement and research project[9] to inform our proposed enhancements.

- *Enable the matching of teachers with information about their certification and teacher preparation programs*

Leveraging the proposed student-teacher data linking system, we plan to further connect these data to teachers' preparation programs. Currently, SCHEV collects individual records on postsecondary students in Virginia's teacher preparation programs including course-level enrollment, financial aid, and degree and certificates awards. VDOE issues teacher licenses and maintains the data documenting teacher's place of employment and work assignments. Noting that only 44 percent of Virginia's teachers earned their bachelor's degrees in Virginia, we are requesting funds to enhance VDOE's licensure system. We propose to collect data on teacher's route to licensure and endorsements (which may differ from their place of bachelor's degree) and to establish much needed edit checks in the system to enhance the data quality. SLDS grant funds will permit VDOE to capture transcript information from teachers applying for licensure, new endorsements, and recertification in Virginia. The combination of SCHEV's data, the new data collected with the proposed system enhancements, and our linking tools will provide the information needed to develop a web-based reporting system to inform teacher preparation programs across the country of the classroom outcomes of their recent graduates.

- *Enable data to be easily generated for continuous improvement and decision-making*

One major objective of Virginia's proposed LDS project is to create a comprehensive web-based portal that will allow a variety of audiences (e.g., policymakers, the public, and researchers) to access the wealth of publicly available data from the K-12, postsecondary education, and workforce agencies. The portal will provide pre-developed and publicly available reports created by VDOE, SCHEV, and other agencies. Users will also be able to develop custom reports by combining data from multiple publicly available datasets, and to request data products in multiple formats. We propose to gather stakeholder input and feedback on content and layouts for the portal, and on the content of new reports, to enhance their usability for parents, educators, administrators, policymakers, researchers and the public. We have incorporated into the proposal an incentive program to develop new and unique data tools to be available to the public.

- *Ensure the quality and integrity of data contained in the system*

Existing SCHEV and VDOE data systems use extensive edit and validity checks to ensure data

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[9] CIT Connect (2009). *Data Governance/Data element definition final report—second workshop (A9): Analysis of Linked Student-Teacher Data.* Submitted to the Virginia Department of Education, May 31, 2009.

integrity. As part of the project, we will enhance existing edit and validation checks and establish new models for all new data and reports that are collected, and to ensure cross-agency validity of the data. Further, the collection of new data on course enrollment will enable VDOE to more accurately report participation in statewide assessments. Our proposed data management and control system will enable the participating agencies to develop cross-agency rules for data sharing, common data definitions, and standards for data sharing, using existing de-jure and de-facto national data standards. Our standards-based approach improves data quality as well as comparability and enables the base system developed with this grant to be scalable to other agencies in Virginia as well as across state lines.

- *Enhance the Commonwealth's ability to meet reporting requirements of the U.S. Department of Education.*

The existing educational data systems enable Virginia to meet current federal and state reporting mandates. The proposed LDS enhancements will create efficiencies for some of our reporting requirements, and enable the Commonwealth to meet all reporting requirements of the SFSF.

With respect to the **12 elements prescribed by the American Competes Act**, *Virginia has completed (C) or has made progress (P) in addressing the following data system elements:*

- 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) (C)
- Student-level enrollment, demographic, and program participation information (C)
- Student-level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs (C)
- The capacity to communicate with higher education data systems (P)
- A State data audit system assessing data quality, validity, and reliability (P)[10]
- Yearly test records of individual students with respect to assessments under section 1111(b) of the Elementary and Secondary Education Act of 1965 (C)
- Information on students not tested, by grade and subject (C)
- Student-level college readiness test scores (C)
- Data that provide information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework (P)

Within this proposal, we have requested funds to develop (D) or enhance (E) the following key data system elements for the statewide, longitudinal data system

- Student-level transcript data, including courses enrollment, completion, and grades. (D)
- A teacher identifier system for K-12 with the ability to match teachers to students (D)
- The capacity to communicate with higher education data systems (E)
- A State data audit system assessing data quality, validity, and reliability (E)
- Data that provide information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework (E)
- Data that provide other information determined necessary to address alignment and adequate preparation for success in postsecondary education. (E)

[10] Virginia has an established data audit process. Improvements and updates are instituted regularly, particularly when new data and reports are established.

Training or technical assistance needs to be addressed through the grant

There are a wide variety of training needs that will be addressed by this project. Our program will ensure full training and technical assistance are provided as new data and tools become available, and that the training programs can be sustained over time. For each outcome, system users and stakeholders will require ongoing training to ensure that data, information, and systems are used appropriately and in compliance with data security laws, regulations, and policies. We recognize that stakeholders vary widely depending on the outcome, and include teachers and administrators, researchers, public data users, advocacy groups, and state agency staff.

For each project outcome, we plan to develop both electronic training tools onsite training programs to support diverse audiences. For example, upon institutionalizing growth models and teacher impact estimates, we will develop a training and technical assistance program for teachers, principals, and other school leaders to ensure they have the information on the appropriate uses and limitations of the estimates. We will develop training modules as part of the data linking system to provide users with training in using the system to meet their needs. We plan to develop a tiered training program that will be available electronically, and provide training for users with different levels of interest and sophistication in using the tools. We also plan to develop institutional training programs for agency staff on how to access and use the secure data tools and the data security policies or practices that must be followed by system and data users. In addition to in-person and web-based training, we wish to explore additional tools such as the new ***Virginia on iTunes U***[11] and podcasting.

Using the system to address the requirements of the State Fiscal Stabilization Fund

The proposed enhancements will enable Virginia to meet the following SFSF requirements:

1. Reporting on the systems used to evaluate teachers and principals.
2. For teachers and principals who receive performance ratings or levels through an evaluation system, reporting the number and percentage of teachers and principals rated at each performance rating or level.
3. For teachers of reading/language arts and mathematics in tested grades, growth data for current students and the students they taught in the previous year, and estimates of individual teacher impact on student achievement, in a manner that is timely and informs instruction. Our grant proposal includes funds to develop a data collection system that links students to teachers, which is necessary to meet this requirement. In addition, we have included funds for a research project to be conducted in collaboration with subject matter experts from university and non-profit research institutions to develop valid and reliable measures of growth on Virginia's statewide assessments and estimates of teacher impact. The proposal also includes funds to develop timely and meaningful reports that will be provided to teachers through a secure system, and funds to develop a sustainable training program for teachers, principals and other school leaders to appropriately use the estimates
4. Virginia is currently able to meet the SFSF requirement to report the number of high school graduates who enroll in two- and- four year colleges using data from the National Student Clearinghouse. The proposed longitudinal data linking and reporting tool will merge data between K-12 and higher education data systems and provide the information required to report the number of high school graduates who enroll in state institutions of higher education and complete at least one year's worth of college credit within two years.
5. Our proposal also requests resources to enhance Virginia's automated reporting capability to

[11] See http://www.doe.virginia.gov/VDOE/NewHome/pressreleases/2009/apr7.html

generate reports required under the SFSF and ESEA; support institutional response to key aspects of the Higher Education Opportunity Act; and create efficiencies in meeting state reporting requirements.

6. Virginia's accountability requirements for several other federal education programs, including ESEA, IDEA and Perkins, will also be fulfilled more efficiently through the use of the proposed data linking and reporting tools. For example, IDEA reporting requires states to report the percent of youth with individualized education plans (IEPs) who are no longer in secondary school and who have been competitively employed, enrolled in some type of post-secondary school, or both, within one year of leaving high school. Currently, Virginia's public school divisions conduct follow-up surveys of all students with IEPs who exit Virginia's high schools to meet the reporting requirements. The proposed tool that merges K-12, higher education, and employment data will provide Virginia with more reliable data and more efficient and cost-effective means to collect and report this information.

(b) Project Outcomes Related to System Requirements and Implementation

Outcome 1: Create an integrated K-12 student-teacher information system

We propose to develop and validate a data collection system that matches individual teachers to students and includes student course enrollment and outcomes information within the K-12 system. This outcome also supports school divisions' data system efforts.

We will use this information to provide teachers with access to information about the academic outcomes of their students, including student growth on state assessments in reading and mathematics, course taking history and outcomes as required for the SFSF by September 30, 2011. We will also engage outside experts to develop valid methodology for measuring student growth and teacher impact on student achievement as measured by state assessments.

The proposed information system will also include reporting capabilities available to teachers and other authorized school division personnel to provide estimates of student growth and teacher impact on student performance on state assessments in reading and mathematics. VDOE will develop additional reports for use by authorized personnel in the existing data warehouse to inform decisions. The data to be collected for the student-teacher information system, combined with information already collected at the student level for the EIMS, will also be used to develop reports that provide comparison of end-of-course grades with performance on state assessments, and additional information on students not tested by grade and subject.

Another component of the proposed integrated student-teacher information system is an upgraded teacher certification system to enable VDOE to electronically capture information on the teachers' preparation programs. We will link this information to the proposed course completion data and a richer set of information available from teachers educated in Virginia's institutions of higher education via the longitudinal data linking and reporting system (see Outcome 2). This will enable us to provide teacher preparation programs (both within and outside of Virginia) with information on the classroom outcomes related to their completers and to school administrators to inform personnel practices.

To meet the SFSF reporting requirement, VDOE will build a data system that collects information on school divisions' teacher and principal evaluations, including the distribution of performance ratings of teachers for each school and of principals for each division. The resulting reports from the data collection will be available to the public via the VDOE web site.

We will also develop live and online training programs to support system and report users with

respect to access and appropriate use of the available data. We will involve representatives from stakeholder groups in developing the reports and training programs to better serve users' needs.

The proposed linked teacher-student data system will be comprised of four separate system development efforts: 1) Development of a course enrollment and completion data collection; 2) Development of a teacher/principal evaluation data collection; 3) Upgrade of the current teacher licensure system; and 4) a needs-based school division competitive grant award program.

Development of the Course Enrollment/Completion Data Collection

VDOE will work with school division advisors to develop a file specification that meets the requirements of the course enrollment data collection and is least burdensome for school divisions to report. Again, working with school divisions, VDOE will develop valid values, edits, and business rules to be applied to the data upload. Using SIF and NCES Handbook data standards where applicable, and the computing environment and programming tools described later in this section, we will develop a data collection application within our secure portal.

We plan to conduct the course enrollment/completion data collection at several time-points during the year: in the fall for first semester enrollment, in the spring for second semester enrollment, and at the end of the school year for course completion information. Using existing statewide course codes, at a minimum, the following information will be collected:

- Division and School identifying information
- Unique Student Identifier
- State Course Identifier
- Section Identifier
- Local Course Identifier and name (optional)
- Final Grade (end-of-year only)
- Teacher Identifier of the primary teacher
- Teacher Identifier of other teachers assisting the primary teacher(for use in team-teaching situations)

Including the unique student identifier in the data collection will enable us to link the course-taking information to existing student demographic, state assessment, program participation, exit, and attendance data, and through our proposed data linking tools, to outcomes beyond the K-12 system. The teacher identifier will enable us to link the teacher to the students' state assessments and provide the basis for developing a methodology to measure teacher impact on student achievement. When the current Teacher Licensure system is upgraded to capture information on teachers' preparation programs, the linked teacher/student data will be used to create feedback reports that inform teacher preparation programs. The data linking tools described in Outcome 2 will eventually enable VDOE to link data with SCHEV, and a richer set of analyses will be possible for teacher preparation programs in Virginia. Once the Student/Teacher Course Enrollment/Completion is institutionalized in school divisions' daily business practices, we envision expanding the collection to include the data elements necessary to report highly qualified teachers; enabling VDOE to retire the existing process.

Development of the Teacher/Principal Evaluation Data Collection

VDOE will work with school divisions to define the requirements, such as data elements and best time of year to conduct a Teacher/Principal evaluation data collection. It is envisioned that this data collection will be a data entry collection rather than a file upload collection. Data entry would take place via our secure portal. Again working with school divisions, VDOE will develop web site report formats that will be useful and informative for school divisions and the public. Using the computing environment and programming tools described below, VDOE will develop the data collection data entry forms and public web site reports.

At the VDOE, enterprise-wide data collection from school divisions is web-based; through

online data entry or file upload. VDOE provides a single point of access to internal systems for Virginia school division personnel through a secure, web-based portal. Portal account management and application access is managed at the local level, according to local policies. VDOE proposes to use this portal to develop the Course Enrollment/Completion and Teacher/Principal Evaluation data collections.

The VDOE computing architecture is standards-based and scalable to meet future needs. To maximize staff skill sets, the VDOE has standardized on one database and programming environment. Three identical but distinct environments - development, integrated test, and production – enable the VDOE to perform rigorous application testing. The proposed data collections will be developed using this architecture.

Upgrade of the Teacher Licensure System

VDOE's division of Teacher Education and Licensure proposes to enhance the teacher education and licensure applications as described below. The objectives of these enhancements are: 1) to provide additional longitudinal data to track the route(s) to licensure and teacher endorsement(s) resulting in the ability to link teachers to their preparation programs; 2) to leverage business process engineering to improve service delivery to the public and reduce the burden of paper/document handling and of data entry by licensure personnel; and 3) to leverage state-of-the-art Web-based technology, encryption software, and imaging technology in support of the data security, data quality, and business continuity standards, and in support of cost containment with regards to data storage and data processing. The proposed enhancements include:

1) Providing a public Web application that enables prospective and current licensees to request a number of actions regarding teacher licensure, such as applying for an initial teaching license, requesting a change to personal information, requesting to add educational degree information or a teaching endorsement, requesting to change a license type or renew a license, obtaining a duplicate copy of one's license, or verifying license status.
2) Migrating the current back-office licensure application from a desktop computer-based application to a web-based application, leveraging Web presentation capabilities to optimize and reengineer the associated licensure processes.
3) Providing a mechanism to capture longitudinal data for tracking route(s) to licensure and teaching endorsement(s) and licensure.
4) Providing a secure and robust mechanism to receive data via the Web and/or as an import file in support of licensure processing for applicants and licensees, including but not limited to:
    a) Endorsement and education data for approved program completers from institutions of higher education (IHEs) that are approved program providers.
    b) Transcript data from IHEs utilizing such standards as the XML-Postsecondary Electronic Standards Council (PESC) standard.
    c) Instructional assessment data from national educational testing entities that administer licensure assessments required by Virginia.
    d) Disciplinary action against educational personnel data as reported by states via the National Association of State Directors of Teacher Education and Certification (NASDTEC) clearinghouse.
5) Providing an encryption/decryption mechanism for storing/displaying personal identifiable information, including, but not limited to, social security number and imaged data.
6) Providing a mechanism to generate, store, and index images of dated correspondence produced by the application and sent to the applicants and licensees during the processing of their licensure requests.

7) Reengineering licensure processing modules to remove or modify processing requirements, report displays, screen displays, and data links that utilize the full social security number.

School Division Competitive Grants

VDOE will develop a needs-based competitive grant program to assist school divisions or consortia of school divisions with meeting data and information requirements that support their efforts in one or more of the four ARRA reform areas. VDOE will consult with school divisions on the most effective way to structure and administer the grant programs, and will administer the grant program in a manner similar to the way IES administers the SLDS grant program—requiring periodic reports as well as timeline and budget status updates.

Outcome 2: Create a longitudinal data linking and reporting system

A key requirement of the grant program, and from Virginia's perspective a critical component of understanding the successes and challenges of our students, is the ability to link data between state agency data sources, including K-12, higher education, and workforce systems.

Virginia stands out as a special case study in the difficulties of combining data from multiple agencies for the purpose of evaluating policy and program effectiveness while also complying with federal and state privacy requirements. In addition to many layers of complexity that arise in any public-sector, multi-agency data integration effort, Virginia-specific privacy laws and Virginia's historical system of "locally administered, state supervised" public services, a model used to varying degrees in many state agencies, create additional challenges. This complex network of technological, regulatory, and structural impediments to the integration of individual-level data makes a traditional approach—consolidation of data in a central 'warehouse'—untenable. To successfully coordinate Virginia's set of heterogeneous data sources within a continually shifting legal environment focused on the protection of personal privacy, we propose to take a federated data systems approach.

Federated data systems

A federated data system is a system that interacts with multiple data sources on the back-end and presents itself as a single data source on the front-end. Users querying a federated data system cannot tell that they are in fact querying many different data sources at the same time. The key to linking up the different data sources is a central linking apparatus. Generally, this is a database management system that has been set up with access privileges to each data source and that houses a 'linking-table' populated with the unique identifiers that will be used to 'join' the tables together into one large data set. (See Appendix A, Item 8.)

Using a federated system to merge data across agencies

The special requirements imposed on the establishment of a federated data system between public agencies dictate that individual privacy be maintained. While it may be acceptable for any system user to retrieve information showing that a certain individual participated in a certain program (e.g., William Smith went to Virginia Tech), it would not be acceptable if that same user could link that person to a particular detail specific to that program (e.g. William Smith received a grade of "F" in Calculus). However, for the purposes of longitudinal research, it is that latter information that is needed (e.g., we don't care about William Smith, but we do want to know how many males failed Calculus in a particular year). Therefore, what is needed is a system that will permit the linking of data relevant to longitudinal research that does not allow personal identification of any of the individuals in the data set. The proposed solution has two distinct processes, one for establishing and maintaining an anonymous 'linking directory,' and

one that uses the linking directory to join data sources and return a 'de-identified' data set to the user.

We are requesting funds to build the two processes that will allow Virginia to prepare regularly needed reports and merged data sets for analytic use. We propose to create a cross-agency data linking and reporting system that can be used in a manner that maintains the confidentiality of individual student/teacher/employee data, can be used for accountability and analytic purposes, and meets the requirements of State and federal privacy laws. In Virginia, state law (§2.2-3800-§ 2.2-3816) currently prohibits state agencies from sharing personal information across state agencies except under specific circumstances. In order to meet SLDS program requirements, the requirements of SFSF, and the needs of the collaborating state agencies, we have developed a methodology that will permit multiple state agencies to merge de-identified individual-level data using a federated data system model. The methodology, developed in conjunction with Virginia's Office of the Attorney General to link data between K-12 and higher education, will permit the two education systems and the many agencies that house workforce education and training programs to link unit-level records through the use of de-identified data sets. The data sets will be used to prepare regularly needed reports and merged data sets for analytic use. The system will also provide Virginia with a set of adaptable tools that can be used to link data across additional state agencies (and, even across states) moving forward. Below is a list of the specific system components that support the broad outcome of establishing Virginia's longitudinal data linking and reporting system.

Moving from siloed agencies to a federated data system

Moving from the siloed agencies to a federated data system model includes three major tasks:

1) **Develop a rubric** to document data element definitions, meta-data requirements, and technical requirements needed for state education and workforce agencies to prepare de-identified data sets that can be linked to other agency's data for authorized purposes. The rubric, currently in working form for workforce agencies, will form the basis of the data elements required to develop algorithms to de-identify and merge data across agencies. This rubric will also be needed by other states and local agencies interested in using the Virginia tool to merge data. More details of this basis for the data linking system is described in the data management and control outcome.

2) **Build the central linking directory** based on data sharing agreements in place or established as part of the grant project. Data sharing agreements and Memorandums of Understanding are discussed further in the data management and control outcome portion of this proposal. The partner agencies will establish the central linking directory working with the data elements defined in the rubric. The central linking directory contains a record for each individual served by the public agencies participating in the federated system. The linking directory contains only an encrypted hash value[12] of the unique identifier(s) that can be used by multiple agencies for update purposes, and an entry for each internal unique id used by each system for which the individual has an entry. The directory assigns a common but unique identifier to individuals in the data sets. The new number will have no meaning other than linking unique individuals across agency or program datasets. The identifier will not linkable to other data or information, even at the local level, because the number will not be the unique id used locally or in raw state

[12] The hash value will be generated using a one-way cryptographic hash function – a procedure that takes data as input and returns a value.

datasets. Furthermore, it will not contain any personal information that can be traced back to individuals, and there will be no way to reverse-engineer the value such that a meaningful/otherwise linkable number can be derived from the new and de-identified id.

3) **Establish the data query process** for authorized user access. The de-identified data query process uses the linking directory to anonymously join data records at the individual level from multiple data sources using the internal identifiers used by each source. It relies on a set of established data elements and meta-elements identified by partner agencies as available for merge and defined in the rubric discussed above. The query product returned to the user is a single table of de-identified, individual-level data. All query specifications and resulting data sets are discarded after processing. No resulting data sets are permanently stored. We are proposing to build query tools with drag and drop functionality; that enable users to save and share queries; that permit the user to specify the output format (e.g., XML; tab-delimited); and, when necessary to have expert technical assistance available to support more complex queries. (See Appendix A, Item 9.)

The query process will require the requester to clearly define the individuals of interest; the records for this base set will then be joined via a web service[13] using de-identified data. For example, suppose the cohort of interest is college students who entered Virginia's community college system for the first time in 2006, and the independent and dependent variables of interest are participation and outcomes on statewide assessments in high school; credential information as of August 31, 2009; and employment outcomes since the student left high school. Using the data element definitions in the rubric, the user will define the cohort and variables to include in the dataset. Then, the system will identify students identified for study in the central directory, and, using the hashed identifier in that directory, join data from participating agency systems. Finally, the joining tools will replace the identifier in the central directory with another unique hash value for each individual in the dataset, and deploy the final de-identified data in the format specified by the user.

Salient features of the federated system

The partner agencies will continue to house source data in their respective databases. Additional capabilities will be developed within each agency to store query results, scrub and prepare the data for linking, and offer and receive data in XML format. The proposed solution will utilize non-proprietary technologies based on the SIF and PESC specifications, and the proposed SIF web services specification that will allow heterogeneous agency information systems to participate in the data linking process. It will consist of a message broker to manage Web Services, processes to queue and manage multiple requests from different participants, and a database to house a linking directory and the data source registry. Processes will be developed to manage workflow between new and existing data sources. Web services will be developed to implement the de-identifying logic, update the linking directory, and process queries. A front-end application will enable the partner agencies and other stakeholders to log in, and create or execute queries based on previously defined data sharing agreements or rules built into the system. Other applications will manage the web services and user access. Reporting and ad-hoc query will be enabled using an off-the-shelf business intelligence tool. Charts depicting the federated system may be found inAppendix A, Items 8 and 9.

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[13] Web services are a suite of protocols that operate over the Internet allowing the disparate computing environments of the partner agencies to interoperate and share data.

Outcome 3: Develop a web-based portal to access education and workforce data

The real value of the data is in its use—by policymakers, educators, the public, program directors researchers, and advocates. While we have taken great strides in making more data available to more users over the past decade, more must be done. To increase the accessibility of available data, we propose a new portal with different levels of access that will provide one-stop access to data and reports available to the public, and provide access to non-public data for authorized users. The public portal will serve as an executive-level decision support system for Virginia's policymakers and permit the public, including researchers, advocates, and educators with greater, more transparent, and efficient access to publicly available data and reports.

We propose to develop a state-of-the-art tool that will include access to publicly releasable reports created from the longitudinal data linking and reporting system, and will include web-based tools for creating "ad hoc" reports from publicly available datasets that link data from several agencies to create custom reports. By way of example, the custom data tool would enable a user to create a single dataset that included, for each high school in Virginia in the years specified by the user, the pass proficient and pass advanced rates on Virginia's statewide assessments; the number of students enrolled; the number of high school graduates; the number of students who enrolled in postsecondary education programs; and, for those students who enroll in public and non-profit higher education institutions, the number and percent who required developmental education courses in math, reading, and writing. All of this information is currently available from VDOE and SCHEV upon request, but it would take a citizen or researcher at least two phone calls and significant staff time from the agencies to meet the request. The new tool would automate this process.

Reports will be available in a variety of formats depending on the user's preferences. Tables, charts, and graphs will be presented to provide different views of the data. Maps will also be used to provide a geographic perspective. GIS data layers, including county and city boundaries, roads, schools, school districts, and related information such as census counts and income levels will be integrated with the geographic reports to provide contextual information for the data and for further analysis. For example, are there certain geographic areas of the state that have lower standardized test scores than others? How does the availability of broadband Internet relate to school performance? How do scores differ in urban areas? These are the kinds of questions that can be answered using geographic data in combination with education data.

As with all the proposed outcomes, we intend to develop online training modules for portal users. As well, queries will be saved and made available to other users which increases the replicability of research studies and also provides users with a wealth of ideas for queries.

In further support of increasing citizen and policymaker access to data, we have included Virginia's Innovation and Entrepreneurship Investment Authority (IEIA) as a supporting agency in this proposal. IEIA will support our work to develop "Virginia Apps for Education." This concept is modeled on the successful "Apps for America" competition on Data.gov, and is intended to support Virginia's data accessibility efforts as well as government transparency. Publically available data from the LDS could be made available with other State sources of data to allow developers and researchers to conduct their own analysis and make their own combinations of data and application tools, which would in turn be made widely available. Through this process, we intend to increase our return on investment for building a more broad set of data tools. IEIA will lead this aspect of the work, develop protocols modeled on the federal project and Virginia's Innovation Partnership, which also awarded minimal development

funds through a competitive process. Throughout this and all of our work, developers will consider the use of social networking tools such as Twitter, Facebook, and Linkedin to engage a wider community of data users.

Outcome 4: Design a data management and control system

Data and reports are only as good as the quality of the data themselves. Further, as we increase the volume of data collected and stored, and increase the number of individuals with access to the data, we simultaneously increase the risks we are taking with individual and organizations' sensitive data. In order to maximize data quality, ensure accessibility with appropriate security, and usefulness of the data in both existing and proposed systems, we plan to develop and implement comprehensive cross-agency data sharing policies and practices and standards for data exchange. It will also be critical to develop and implement data security measures to maintain privacy of personally identifiable information (consistent with applicable privacy protection laws), and to establish clear protocols for role-based data access at all levels, and to enhance existing data audits. Using the previously-mentioned on-line, web-based approach to training, we will also develop and implement state and local level training programs focused on data security policies and practices internally and with regard to cross-agency data sharing requirements.

Data Management

One of the immediate tasks for the project is to develop a lexicon of the data language used by each agency. The reason for this twofold. First, this exercise will make clear where concepts are consistent across agencies and where they diverge. For example, in VDOE, gender is a binary term (male/female). Within SCHEV's data collection, gender has evolved into a quadrary data point to handle "Unreported/Refused" and "Transgender." While the definitions and coding will be reflected in the data dictionary, conceptual differences must be reflected in the lexicon. Similarly, race/ethnicity will have definitions in common across systems, but in the postsecondary data it includes the concepts "nonresident alien" and "unreported" which may not exist or exist in the same way as in K-12 or workforce data. Second, the lexicon provides the conceptual mapping that defines how users may retrieve data. For example, users will be able to define a group of students who graduated from high school in 2009 and retrieve data from multiple sources (e.g., higher education, employment) for this group of students. Development of the comprehensive data dictionary (via the rubric described earlier) provides the necessary common and uncommon definitions for each object in each database. This is important not only because it is the key to organized data storage, but also because the dictionary drives the ability of the proposed system to retrieve, recode, and organize data according to the user's request.

Data Control

Establishing data control requires quality control, access control, and system security.

Quality Control encompasses a variety of activities (ranging from design analysis to statistical process controls to stress testing) intended to ensure that data quality meets or exceeds required levels. Although data modeling and related activities will be encompassed in the other outcomes, the quality control process will be kept separate, both as means of providing a standardized approach, and to maintain the integrity of the control processes. Quality control will be a significant element in the planning and design phases. During development and implementation quality assurance efforts will be conducted, and post-implementation, quality control will be maintained via a "data governance" model (see "Project Management and Governance" section, below).

Access Control here refers both to the systems, tools and processes for system interfaces and data exchanges, and to the authorities and rules regulating the establishment, administration, and revocation of user access to and privileges with LDS data. Virginia is proposing to use role-based access controls (RBAC). Each component of the LDS will require access controls, based on methods and procedures for identification, authentication, authorization, and accountability—including such elements as role definitions (including role assignment and authorization), credentialing, control points/gates, transaction authorizations, alert systems, and audit capabilities. In an RBAC, the permissions are assigned to roles, and apply to operations/ activities, rather than directly to data objects. This provides a high degree of flexibility to meet user needs, while also maintaining separation of duties (to avoid security breaches).

System security will be implemented in accordance with *Commonwealth Information Security Standard SEC 501-01* which establishes minimum standards for information security. Virginia's Information Security Program consists of the following component areas:

- Risk Management
- IT Contingency Planning
- Information Systems Security
- Logical Access Control
- Data Protection
- Facilities Security
- Personnel Security
- Threat Management
- IT Asset Management

These component areas provide a framework of minimal requirements that agencies shall use to develop their agency information security programs with a goal of allowing agencies to accomplish their missions in a safe and secure environment. Each component listed above contains requirements that, together, comprise this *Information Security Standard.* During the course of the project, partner agencies will update their agency information security programs to ensure they comply with or exceed current Information Security Standards established in Virginia. Essentially, this *Standard* embraces the 'least privilege' approach for access and establishes strong controls for accounts and processes.

Outcome 5: Develop a secure mechanism for post-secondary institutions to receive high school transcripts in the form of electronic data

Virginia's high schools and institutions of higher education are interested in creating system efficiencies, and in increasing their ability to understand factors that lead students to increased success in postsecondary institutions. To meet both of these goals, we propose to develop a secure mechanism to permit postsecondary institutions, including all 23 institutions in the VCCS, to receive high school transcript data electronically. We plan to leverage the electronic transcript capability developed with funding from the current SLDS grant to develop the capability for VCCS and institutions of higher education to consume the electronic transcript as data. We are proposing to use grant funds to carry out a pilot project with VCCS and selected four-year institutions for electronic transfer of transcript data to them, and for integration of those data into existing data systems.

e Transcripts

We will build on the e-Transcript capability developed under the previous IES SLDS grant by demonstrating that community colleges and institutions of higher education can accept high school transcripts as data (currently the only electronic format being used in postsecondary is pdf). We are currently able to create a high school transcript that meets the requirements of the PESC specification. We are proposing to purchase or build "adapters" for postsecondary institutions' information systems that enable the transcript data to be automatically inserted into the system rather than hand-entered. By adopting a national standard such as PESC, we are also preparing for transmission of student transcripts as data across state lines when other states adopt

the same standard. As well, we will explore the feasibility of providing transcript data to the armed forces. If they currently use or are able to adopt PESC standards, it will be possible to share Virginia's transcript data with the military.

Virginia currently uses the National Transcript Center (NTC) as the clearinghouse for electronic transcripts. NTC serves as the portal that school counselors use to upload transcripts and that admissions offices use to retrieve transcripts. Using the SIF transcript standard, school divisions' transcript data is uploaded to EIMS. There, it is transformed into the PESC transcript standard and sent to the NTC. School counselors log in to NTC and select the institutions a student has designated to receive the transcript. Institutions log in to NTC and can see a list of student transcripts that have been designated for them. They can then view the transcript in pdf format or, with the proposed adaptors, automatically insert the transcript as data into their student information systems.

VDOE will enter into agreements with VCCS and selected postsecondary institutions to fund the purchase or development of software adaptors that interface with the institutions' student information systems. We propose to include institutions with different student information systems (we have identified Datatel, Banner, and PeopleSoft as potential product candidates) so the solution from this demonstration project can be replicated at other institutions at a later time. Participating institutions—James Madison University, George Mason University, and Norfolk State University—represent both public and private institutions, include an historically black college, and vary in size (see their letters of commitment in Appendix D).

The proposed software adaptors will insert the PESC XML transcript data elements into appropriate fields in the institution's student information system. In order to do this, institutions (with grant funding) will map the PESC transcript data elements to the data elements in their student information system. If they do not already exist, some data elements may have to be added to the student information system. Institutions may also have to develop reports for their admissions offices based on the transcript data elements.

(c) Timeline for Project Outcomes

VDOE intends to collaborate with VITA, VCCS, SCHEV, several Virginia institutions of higher education, and local school divisions to accomplish the desired outcomes. While VDOE will provide oversight using an established governance plan (see "Project Management and Governance" section), individual partners will staff, execute and manage one or more projects for each of the outcomes. The following timelines summarize the major tasks, the parties responsible, and estimated initiation and completion dates for each proposed outcome. Detailed timelines for each outcome are included in Appendix A.

Outcome 1: K-12 Student/Teacher Integrated System (Appendix A, Item 10)

Task Description	Agency	Start Date	End Date
Preplanning and administrative functions	DOE	Apr-10	May-10
Build Data Collection System for Upload of Course Enrollment and Outcome Information		Jun-10	Jul-11
Determine File Layouts, Edits, and Business Rules	DOE	Jun-10	Aug-10
Conduct research to develop growth model and methodology for teacher impact estimates	DOE	Apr-10	Jul-11
Develop software programs to upload and receive the files and	DOE	Aug-10	May-11

to link the student and teacher information			
Develop and Implement online and in person training programs	DOE	Sep-10	Apr-11
Build reports for Academic Outcomes and Performance Standards	DOE	Jun-10	Nov-10
Conduct first linked Student/Teacher Data Collection	DOE	Jul-11	Jul-11
Build Data Collection System for Teacher /Principal evaluation		Jun-10	Aug-12
Determine Data Elements and process for data capture	DOE	Jun-10	Oct-10
Develop Web Applications for data collection	DOE	Oct-10	May-12
Develop online and in person training programs	DOE	Sep-11	May-12
Launch full production capability	DOE	Aug-12	Aug-12
Build Teacher Licensure System		Jul-10	Aug-12
Build a public-facing Web application for licensees	DOE	Jul-10	Dec-11
Modernize current back-office licensure application	DOE	Nov-10	Mar-12
Build a process to capture longitudinal data for tracking route(s) to licensure	DOE	Dec-10	Mar-12
Provide a secure mechanism to receive and store data.	DOE	Mar-11	Mar-12
Develop online and in person training programs	DOE	Sep-11	May-12
Launch full production capability	DOE	Aug-12	Aug-12
School Division Grant Program		Jul-10	Aug-13
Work with school divisions to develop grant application requirements	DOE	Jul-10	Aug-10
Post grant applications / Select application review committee.	DOE	Oct-10	Feb-11
School Divisions develop responses and submit applications	DOE	Nov-10	Feb-11
Responses are evaluated, Awards announced	DOE	Mar-11	Jun-11
Create MOUs between DOE and School Divisions and Begin Projects	DOE	Jul-11	Sep-11
Projects end & Program Evaluation	DOE	Apr-13	Sep -13

Outcome 2: Longitudinal Data linking and Reporting System (Appendix A, Item 11)

Task Description	Agency	Start Date	End Date
Preplanning and administrative functions		Apr-10	May-10
Meetings with Stakeholders and Focus Groups	DOE	Jun-10	Oct-10
Develop rubric to document data element definitions, meta-data requirements, and technical requirements.	EAD	Sep-10	Jun-11
Create Data sharing agreements	DOE	Jun-10	Jun-11
Provision Infrastructure & licenses	EAD	Jun-10	Jun-11
Build the central linking directory and data source registry. .	EAD	Jun-10	Nov-10
Establish the data query process for authorized user access	EAD	Jan-11	Feb-12
Additional capabilities within each agency to store query results, scrub and prepare the data for linking, and offer and receive data in XML format.	EAD / Agencies	Nov-10	Feb-12
Implement Message Broker and web services	EAD	Feb-11	Feb-12
Data Linking capability achieved		Feb-12	Feb-12

A front-end application will enable the partner agencies and other stakeholders to log in, and create or execute queries based on previously defined data sharing agreements or rules built into the system.	EAD	Feb-11	May-12
Create and implement training plan	EAD	Jul-11	May-12
Build reporting capabilities	EAD	Feb-11	May-12
Build Reports derived from cross-agency linked data	EAD	Jan-12	Aug-13
Conduct a pilot to test the Linking and reporting capabilities	EAD	Jun-12	Aug-13

Outcome 3: Web-based Reporting Portal (Appendix A, Item 12)

Task Description	Agency	Start Date	End Date
Preplanning and administrative functions		Apr-10	May-10
Create comprehensive data reporting portal for public and Agency Users			
Design and build the web portal	EAD	Jun-10	Jan-11
Work with agencies to add existing 'data sets' and reports from different agencies (education and workforce) to the reporting portal - One stop shopping for the users.	EAD	Oct-10	Jul-13
Create a role based user registration and access module	EAD	Aug-10	Jan-11
Launch the Reporting Portal	EAD	Feb-11	Feb-11
Enhance reporting infrastructure	EAD	Jun-10	Sep-11
Integrate GIS data layers to the reporting portal	EAD/ Agencies	Nov-10	Apr-11
Implement Tools for ad hoc reporting and other analysis	EAD	Jul-10	Sep-11
Create and implement a training plan	EAD/ DOE	Nov-10	Sep-11
Add reports build in the K-12 student teacher integrated system	EAD	Mar-11	Sep-11
Add reports and data sets created using data linking capabilities created in Outcome 2	EAD	Mar-12	Jul-13
Build reports and data sets for the portal	EAD	Aug-10	Jul-13

Outcome 4: Data Management (Appendix A, Item 13)

Task Description	Agency	Start Date	End Date
Preplanning and administrative functions		Apr-10	May-10
Develop lexicon	All partners	Apr-10	Jul-11
Develop quality assurance protocols	VITA	Apr-10	Jan-11
Establish role-based access protocols	VITA	Apr-10	Aug-10
Enhance and update existing security protocols	All partners	Apr-10	Jan-11
Develop security-related training materials	VITA	Sep-10	Mar-11

Outcome 5: eTranscripts (Appendix A, Item 14)

Task Description	Agency	Start Date	End Date
Preplanning and administrative functions		Apr-10	May-10
Develop a secure mechanism for post-secondary institutions to receive high school transcripts in the form of electronic data			
VDOE, VCCS, participating four-year institutions enter into agreements	DOE	Oct-10	Jan-11
VDOE will select institutions with student information systems - Examples: Datatel, Banner, and PeopleSoft.	DOE	Jun-10	Sep-10
VCCS to build the software adaptors	VCCS	Jun-10	Sep-11
Other institutions purchase, build, or adapt the VCCS adaptors		Feb-11	Jan-12

VDOE is leveraging work products from the existing SLDS grant as part of this proposal. Previous statewide stakeholder workshops and subsequent papers have addressed the issues of linking student and teacher data, workforce readiness, academic and career plans, and data exchange best practices. Having this information in place today gives VDOE a "head start" on policy issues and concerns as we seek to expand the LDS. VDOE also expanded reporting from the data warehouse under the existing grant. Additional data types–college readiness tests and postsecondary enrollment–have been linked to students' K-12 performance in easy-to-use analytic reports. We will improve and enhance the reporting capability with linked student-teacher data.

Another element of the existing SLDS grant is electronic transcript data. VDOE has developed this capability for K-12; institutions of higher education have not yet adapted their information systems to consume the transcript as data. The demonstration project proposed in this application will create software adaptors for institutions of higher education, streamlining the application process and improving data quality.

VDOE proposes to manage the proposed project in the Office of Educational Information Management (OEIM), the office that manages the existing SLDS grant. Both projects will have the same project director and overlapping team members, ensuring coordination of the projects and separate tracking for ARRA purposes, and avoiding duplication of activities.

VDOE plans to launch the work on all the outcomes almost simultaneously. This will be achieved as different teams (VDOE and Partners) will be working on each of the outcomes.

The dates and durations have been estimated based on current or prior experience of VDOE and key agency partners such as VITA.

(d) Project Management and Governance Plan

Project Management

Departmental Approvals & Oversight

VDOE's OEIM will be the fiscal agent and have primary responsibility for approval and oversight of the project. This Office develops and maintains VDOE's computer applications, administers the department's database, reports educational information collected by the department, and calculates and reports state and federal accountability results. Because of the

high priority given to the project by the Superintendent of Public Instruction, additional oversight for policy and planning will be exercised by the Superintendent's Executive Director for Research and Strategic Planning. Lastly, specialized oversight will be provided by the VDOE's Division of Finance—primarily via its Office of Grants Accounting and Reporting—for approvals for financial and grant reporting matters, and by the Director for Business and Risk Management for internal control policies and procedures.

Management Controls

The Commonwealth of Virginia has a variety of management controls related to procurement and financial systems, including Agency Risk Management and Internal Control Standards (ARMICS) requiring state agencies and institutions to annually document organizational risk assessments and internal control activities. In addition, because of its scope, cost, and mission-criticality, the LDS project is likely to qualify as a "major" project, and, as such, would be subject to heightened oversight by VITA's Project Management Division (PMD). Agencies that conduct major projects must follow the VITA/PMD's Project Management Standards and Guidelines (available at: http://www.vita.virginia.gov/library/default.aspx?id=537). Specialized oversight will also be provided by the Office of the Attorney General for legal matters (including data collection and privacy issues), and by VITA's Commonwealth Security Division for information security.

Project Governance Structure

Project Organization

The Commonwealth is proposing multiple levels of project governance and management that serve the many functions required to implement the large scope of work and the many organizations and constituencies involved in the proposed project. A chart depicting the project governance structure may be found in Appendix A, Item 6.

Project Roles

Project Sponsor: The sponsor defines project goals, secure resources, establish project priorities, and resolve intra- and inter-organizational issues and conflicts. Given the multiple agencies involved in this project, we propose that the Secretary of Education, or a senior designee, serve as the sponsor.

Proponent Secretariat Oversight Committee (PSOC): Where projects involve multiple agencies, and especially where those agencies involve more than one Cabinet secretariat, Virginia requires the formation of a Proponent Secretariat Oversight Committee (PSOC). The PSOC meets as needed to resolve issues at the highest level, and is chaired by the Project Sponsor. Questions and issues may be referred to the PSOC by the sponsor, Project Steering Committee, or program director. A representative of VITA/PMD will serve as a non-voting member of the committee.

Project Steering Committee: This Committee will be composed of representatives from the Office of the Governor, the designee of the Chief Workforce Development Officer, and each of the lead partner agencies: VDOE, SCHEV, VCCS, VEC, and VITA. The Committee will meet regularly, have responsibility for resolving cross-agency or enterprise-level issues, and will be the primary policy-setting body for the project. The Committee will accept escalated issues from the program director, program manager, and Internal Agency Oversight Committee to consider and resolve.

Program Director: The program director provides oversight and coordination of assigned projects; guides and supports the development and enhancement of project management

capabilities within the enterprise; ensures appropriate project management processes and procedures are in place; and enforces adherence to established standards and guidelines in the delivery. The program director and program manager (see below) work closely to ensure that project objectives are met, and resources, especially functional subject matter experts (SMEs), are made available to the project and issues are resolved as expeditiously as possible. The program directors will dedicate time each week to attend to the project in detail; will serve as primary liaison to the project sponsor and to the U.S. Department of Education, and will also be a member of the IAOC. We propose that Ms. Bethann Canada, the Director of the Office of Educational Information Management at VDOE be the program director.

Program Manager: The program manager takes direction from the project director and is the primary person responsible for the delivery of project outcomes. The program manager provides day-to-day oversight of project work—designing tactical work processes, ensuring that staff have the tools to meet the objectives defined in the grant application and designated by the project director. S/he also develops and leads work processes that ensure that the Outcome Team Leads coordinate their work. The program manager works closely with the lead project manager to ensure the project work is compliant with administrative requirements of the grant and the state. The program manager is a member of the IAOC. We propose that the program manager be a VDOE employee certified under the Commonwealth's project manager certification program or the Project Management Institute.

Lead Project Manager: The lead project manager provides senior administrative support for the project. Working closely with the program manager, the lead project manager is responsible for ensuring that all project activities are compliant with state and federal requirements (e.g., administrative requirements, technological standards, project management standards), coordinating payment requests, monitoring use of funds and ensuring that project outcome leads have the fiscal resources to ensure project success, and acting as a liaison between the project and oversight individuals and groups to ensure project compliance with standards. The lead project manager is a member of the IAOC. We propose that the lead project manager be a VDOE employee certified under the Commonwealth's project manager certification program or the Project Management Institute.

Outcome Team Leads: Each of the five outcomes will have an Outcome Team Lead. The Team Leads will function as sub-project managers, overseeing the work of teams of business and technical staff assigned to that outcome (depending upon the skills required and task scheduling, some persons may serve on more than one outcome team). VDOE intends that the Team Leads will also be qualified as Commonwealth project managers.

Liaison Groups: The project will be critically dependent upon the input and cooperation of a large number of stakeholder groups. Liaison with these organizations will be maintained directly, and it is expected in many cases there will be significant overlapping in membership between the Project Steering Committee and these groups. Finally, members of these groups will be among those sought for the various Customer Interest Groups (CIGs) that the team plans to convene to ensure customer requirements are incorporated in the design, development, and implementation of the outcome solutions.

System Governance Structure (Post-project)

Governance Organization

After the LDS is implemented, the project management structure will be transformed into a post-project governance structure, streamlined and modified to handle the system's operations

(including support, maintenance, and ongoing enhancements). We recognize that specific arrangements for governance will need to be refined as part of the project design; however, partner agencies will be expected to participate in and provide support for the LDS and its associated systems/applications from their existing staff and operating budgets. See Appendix D for documentation of the anticipated participation and commitment by the project partners.

Once the project is complete, we expect that the Superintendent of Public Instruction will have executive responsibilities for the project and will use appropriate channels to ensure inter-departmental policy issues are promptly addressed. We anticipate that the program director and program manager continue in their general roles after the project is implemented. We anticipate that greater automation will result in staff savings (from a reduction in the amount of effort spent assisting users in obtaining data), and that these savings can be redirected to fund the program manager position and selected other technical staff to maintain and operate the LDS system after the project is over and grant funding is not available (see the budget justification for additional information). We further anticipate several coordinating groups to meet as necessary for issues such as improving customer services; addressing technical issues; sustaining data standardization and enhancements, and security. The post-project governance chart is in Appendix A, Item 7.

Partnering Opportunities

By employing a standards-based approach, there is the possibility that Virginia's solutions and tools could be used by others. Although Virginia is not formally partnering with other States or the military under this project, the Commonwealth would be open to serving as a test-bed or prototyping platform for technology solutions that could transfer to other states/the military, and proposes to explore such opportunities as part of the discussions related to the cooperative agreement.

(e) PROJECT STAFFING

The Commonwealth will organize this multi-agency project with individual Outcome Project Teams dedicated to building and delivering each Outcome. We propose that Ms. Bethann Canada, VDOE's Director of Education Information Management serve as the program director. Ms. Canada is currently serving as the project director for the LDS Grant awarded in 2007. She is responsible for state and federal VDOE reporting and leads efforts to implement and manage statewide administrative educational applications, integrated systems development and data administration. Ms. Canada has worked in various technical capacities with VDOE since 1981. She is a member of the NCES Data Standards Working Group and a Board Member for the Schools Interoperability Framework Association. In 2006, Ms. Canada received the Data Quality Campaign Leadership Award.

VDOE will hire or contract to secure a certified project manager to fill the roles of a program manager.that will be 100% dedicated to this project.

As Lead Project Manager, Virginia is proposing Mr. John Sheldon, currently a special projects manager with VITA. The position of State Lead Project Manager will have primary responsibility for the LDS project's process management, and requires the strong project management, organizational, and analytic skills possessed by Mr. Sheldon. In addition to being certified as a Project Management Professional (PMP), Mr. Sheldon has extensive experience in the areas of information technology transfer and implementation, systems analysis, and reporting system design. He has over twenty year's experience with the Commonwealth from serving in a

number of agencies, and brings to the project a strong knowledge of State systems and procedures.

Each of the outcome project teams will be managed by a certified project manager. Each outcome project team will also have SMEs assigned to provide technical oversight. VITA/EAD currently has ongoing initiatives in areas relevant to three of the outcomes and will provide the Technical SME for each of these three outcomes. VDOE, SCHEV, VCCS and the Chief Workforce Development Officer will provide additional SMEs as needed.

Each of the Outcome Project Teams may include any or all of the following technical resource types: Business Intelligence Developer, Data Modeler, Data Analyst, Database Administrator, Security Architect, Technical Architect, Web Developer, Quality Control Specialist, and Business Analyst. The Outcome Project Teams may result in a matrix organization with these resources shared across Outcome Teams. The resources may be either internal Commonwealth resources or temporary resources (either contractor or wage employees) hired for the duration of the project. The following Commonwealth of Virginia experts have been identified to contribute expertise to the proposed project. These individuals will remain available to support the LDS after the grant expires. Resumes are included in Appendix B.

Tod Massa (15%), Director of Policy Research and Data Warehousing, SCHEV will provide both technical and business expertise throughout the project. Mr. Massa has over 18 years experience in policy analysis, research and data management for higher education. He designed and led the development of a new web-based data warehouse of student-level data supporting the work of SCHEV, the legislature, and the administration. Mr. Massa has served on several federal panels and working groups (e.g., IPEDS Derived Variables), and regularly contribute to national data efforts related to higher education. Mr. Massa's work on this project will be supported by Ms. Marina Moschos (10%), the Assistant Director for Data Warehousing, SCHEV.

Dr. Deborah Jonas (up to 25%), Executive Director for Research & Strategic Planning, VDOE will support all aspects of the project that relate to K-12 and the transition to higher education and the workforce. She will oversee the proposed research projects to develop growth models and teacher impact estimates, and significantly contribute to the work to ensure the public and researchers have access to data. As a trained cognitive psychologist and member of VDOE's executive team, Dr. Jonas supports VDOE and inter-departmental data system enhancement efforts by applying her research expertise to her work.

Kathleen Graham (up to 30%), Business Intelligence Competency Center Manager, VITA/EAD: Ms. Graham is a certified Project Manager with 14 years of experience in information technology. She is the manager of Virginia's Business Intelligence Competency Center (BICC), which received early national acclaim, receiving a 2009 Digital Government Achievement Award in the Government to Citizen Services category for www.stimulus.virginia.gov.

Nadine Hoffman (10%), Data Manager, VITA/EAD: Ms. Hoffman brings more than 20 years of experience and expertise in creating common data models and dictionaries to define an enterprise viewpoint. As the Data Manager within the VITA/EAD, Ms. Hoffman manages data management resources for agency-specific, collaborative (involving more than one state agency) and enterprise application projects for the Commonwealth.

Peter Coleman (10%), OEIM, VDOE: Mr. Coleman is the project coordinator responsible for managing educational projects that collect, analyze and report accurate, timely and comparable information of various state and federal programs. He is also the project manager for the state

longitudinal data warehouse and four projects utilizing the SIF standards – Student Locator Framework for student identifiers; eTranscripts; Student Record Exchange and Student Schedule Collection. Mr. Coleman is a member of the SIF Implementation Task Force and is a state certified project manager.

Susan Williams (10%), Manager of Educational Applications, OEIM, VDOE: Ms. Williams is responsible for collecting appropriate data for ESEA Accountability, longitudinal data reporting, managing the state's assessment data, providing customer service, training and outreach to all local school divisions, and providing technical assistance to other offices within VDOE. Previous positions with VDOE included specialist positions in both Data Administration and the Office of Career and Technical Education. In 2005, Ms. Williams received the Virginia Educational Technology Leadership Award.

Raymond Woten (10%), Manager of Database and Systems Development, OEIM, VDOE: Mr. Woten is responsible for managing VDOE's group of software engineers and database administrators.

Wendy Kang (5%), Director of Workforce Development Services Research, VCCS: Ms. Kang is responsible for data dissemination, quality and research related to workforce programs operated by the 23 community colleges and the Workforce Investment Act (WIA) in Virginia. In addition, she is the lead staff for the Career Pathways Working Group, which was formed to implement the Virginia Career Pathways System Development Strategic Plan initiated by the Governor and currently led by the Secretary of Education. This plan outlines the need to develop centralized data systems and reporting for education and workforce. Ms. Kang works with many state agencies to ensure proper implementation of the plan, such as the Department of Education, Economic Development Partnership, Department of Labor and Industry, Department of Social Services, Employment Commission, and the State Council for Higher Education. Her role for implementing this grant will be to provide assistance in all areas related to workforce data and career pathways system development.

Aaron Schroeder Ph.D., (10%), Research Scientist, Virginia Tech Institute for Policy and Governance: Dr. Schroeder is currently directing research projects focused on the integration of child-relevant data systems in the Commonwealth of Virginia for the purpose of enhancing Virginia's ability to successfully perform evidence-based program and policy evaluation. This effort, funded through the US Department of Health and Human Services, will link Virginia's early care and education data to the K-12 data. Dr. Schroeder has extensive experience in policy and program development and implementation, data systems analysis and integration, quantitative and qualitative methodologies of evaluation, and the general application of information technologies for the enhancement of public and private sector services.

Ajay Rohatgi, (55%), Agency Outreach Lead, VITA/EAD: Mr. Rohatgi, proposed to serve as the VITA/EAD Project Manager, is a certified project manager with over 20 years experience in the field. As the Agency Outreach Lead for VITA/EAD he is responsible for promoting collaboration in application development by building and maintaining partnerships with various state agencies and secretariats and managing collaborative application development projects. Last year two projects led by Mr. Rohatgi each received a Governor's technology award: Business One Stop Portal – Phase 1 and Creating a Framework to implement Digital Signatures.

Project Narrative

Project Narrative - Appendix A, Optional Attachments

Attachment 1:
Title: **Virginia LDS Grant Appendix A** Pages: **15** Uploaded File:
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Appendix A

Virginia's Response to the Statewide Longitudinal Data Systems Request for Applications

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5. **Letter of commitment of SHEV(State Council of Higher Education for Virginia)**

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COMMONWEALTH of VIRGINIA

Virginia Information Technologies Agency
11751 Meadowville Lane
Chester, Virginia 23836-6315
(804) 416-6100

George F. Coulter
Chief Information Officer
Email: cio@vita.virginia.gov

TDD VOICE -TEL. NO.
711

November 23, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
Post Office Box 2120
Richmond, Virginia 23218

Dear Dr. Wright:

The Virginia Information Technologies Agency (VITA) is pleased to support the Virginia Department of Education's (VDOE) proposal to the U.S. Department of Education. This proposal is to support the development and implementation of a statewide longitudinal data system. VITA is committed to addressing the advancement of appropriate and secure information exchange across education and workforce systems in the Commonwealth of Virginia. We fully support your goal of enhancing the Commonwealth's ability to examine student progress and outcomes over time by linking individual-level student data from K-12 education through postsecondary education and the workforce, and look forward to partnering with VDOE in this major initiative.

VITA will support this project by providing representatives to serve on the project's policy committee, management and technical teams. VITA is committed to providing technical infrastructure and resources required to build the capabilities that are required under the grant. Ajay Rohatgi, Agency Outreach Lead within our Enterprise Applications Division, will manage several of the proposed Project Outcome Teams, and additional VITA staff will be tasked to serve on one or more Outcome Teams as necessary. Staff from our nationally recognized Project Management Division will also be available for consultation and oversight.

VITA is enthusiastically committed to working with you in designing, developing and implementing the proposed longitudinal data system. This endeavor will significantly enhance our collective ability to conduct substantive research, inform evidence-based policy-making, and support continuous improvement of Virginia's education system.

Sincerely,

George F. Coulter

C: Ms. Peggy Feldmann, Director of Enterprise Applications Division, VITA
Mr. Ajay Rohatgi, Agency Outreach Lead, VITA

VirginiaTech

Institute for Policy & Governance
Virginia Tech
Blacksburg, Virginia 24061
540/231-1939
www.ipg.vt.edu

November 20, 2009

Institute for Policy and Governance
Virginia Tech University
Blacksburg, VA 24060

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
PO Box 2120
Richmond, VA 23218

Dear Dr. Wright,

I am pleased to write a letter of support for the Virginia Department of Education (VDOE) proposal to the U.S. Department of Education for funding to support the design, development, and implementation of a statewide longitudinal data system aligning individual student-level records between the primary, secondary, and post-secondary levels of data management. Virginia Tech looks forward to partnering with VDOE in the design of a technical approach to multi-agency data integration while maintaining the highest possible standards of personal record confidentiality.

As you are aware, Virginia Tech, through its Institute for Policy and Governance (VTIPG), has significant experience in the area of multi-agency data integration as applied to the Commonwealth of Virginia. From the design and implementation of a multi-agency data sharing system for transportation services (Virginia 511) to current efforts to integrate multiple agency data sets for the purpose of improving child day care quality in Virginia (Child HANDS), IPG has had a unique opportunity to study and appreciate the economic, legal, political, organizational, and technological issues particular to public-sector data integration efforts.

IPG will support this project by providing multi-agency data integration design and implementation support to the Virginia Information Technology Agency (VITA). Dr. Aaron Schroeder, VTIPG Research Scientist, will be made available up to 50% of his time to support VITA's role in developing the technical solutions required. IPG will retain technical support positions as necessary to support this responsibility. Additionally, sufficient project management personnel staff time will be provided to support this effort.

If your application is successful, I believe the successful design, development and implementation of the proposed longitudinal data system will increase significantly our abilities to conduct substantive research, inform evidence-based policy-making , and support continuous improvement of Virginia's education services.

Sincerely,

Dr. Max O. Stephenson, Jr.
Director
Institute for Policy and Governance
Virginia Tech

COMMONWEALTH of VIRGINIA

Virginia Employment Commission

Dolores A. Esser
Commissioner

703 East Main Street

Post Office Box 1358
Richmond, Virginia 23218-1358

November 12, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
PO Box 2120
Richmond, VA 23218

Dear Dr. Wright:

The Virginia Employment Commission (VEC) is pleased to support the Virginia Department of Education's (VDOE) proposal to the U.S. Department of Education for funding to support the development and implementation of a statewide longitudinal data system. The VEC is committed to addressing the advancement of appropriate and secure information exchange across education and workforce systems in the Commonwealth of Virginia. We fully support your goal of enhancing the Commonwealth's ability to examine student progress and outcomes over time by linking individual-level student data from K-12 education through postsecondary education and the workforce, and look forward to partnering with VDOE in this major initiative.

The VEC will support this project by providing representatives to serve on the project's policy committee and management team. We will also ensure that our internal data management and control policies enable us to provide historical workforce information into the longitudinal data system.

We look forward to hearing of a successful funding application, and to working with you in designing, developing and implementing the proposed longitudinal data system, which will significantly enhance our collective ability to conduct substantive research, inform evidence-based policy-making, and support continuous improvement of Virginia's education system.

Best regards,

Dolores Esser, Commissioner
Virginia Employment Commission

(804) 786-1485

VRC/TDD 1 (800) 828-1120
Equal Opportunity Employer/Program

E-Mail vec@vaworkforce.com

Virginia's Community Colleges

November 16, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
PO Box 2120
Richmond, VA 23218

Dear Dr. Wright:

On behalf of Virginia's Community Colleges, I strongly support the Virginia Department of Education's (VDOE) application to the U.S. Department of Education for a State Longitudinal Data Systems grant. The creation of a statewide longitudinal database system is an essential step in improving Virginia's ability to make informed policy decisions and become a leader in providing individuals with the appropriate education and training to meet current and future employer needs.

Virginia's Community Colleges are happy to take the lead on the development of a database that will accept high school students' transcript data electronically. This capability will significantly enhance the college readiness discussions that have been taking place at the institution and system level. By having this capability at the college level, advisors will be able to take into account a student's high school academic record as part of the placement and advising process. Once developed, the VCCS will be happy to share the database structure with other postsecondary institutions across the Commonwealth so that Etranscripts may be transmitted from the high school to our 4-year colleagues as well. This is a very important component of the overall LDS grant application.

This is an exciting opportunity to link the education, workforce, and economic development sectors and thus improve how we deliver services to individuals and employers in the Commonwealth. Please let me know if I can provide any additional support or assistance. I thank you for your continued collaboration with Virginia's Community Colleges and look forward to the hearing about the outcomes of the grant application.

Sincerely,

Glenn DuBois
Chancellor

COMMONWEALTH of VIRGINIA

Daniel J. LaVista
Executive Director

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA
James Monroe Building, 101 North Fourteenth Street, Richmond, VA 23219

(804) 225-2600
FAX (804) 225-2604
www.schev.edu

November 30, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
P. O. Box 2120
Richmond, Virginia 23218-2120

Dear Dr. Wright:

The State Council of Higher Education for Virginia (SCHEV) is pleased to support the Virginia Department of Education's (VDOE) proposal to the U.S. Department of Education for funding to support the development and implementation of a statewide longitudinal data system. As the Commonwealth's coordinating body for higher education, SCHEV promotes the development of an educationally and economically sound and coordinated system of higher education in Virginia, and serves as a catalyst to promote greater access, quality, affordability, and accountability throughout the system. We fully support your goal of enhancing the Commonwealth's ability to examine student progress and outcomes over time by linking individual-level student data from K-12 education through postsecondary education and the workforce, and look forward to partnering with VDOE in this major initiative. As you are no doubt aware by now, the Council is committed to the necessity of sharing data between agencies in an effort to improve education policy in the Commonwealth.

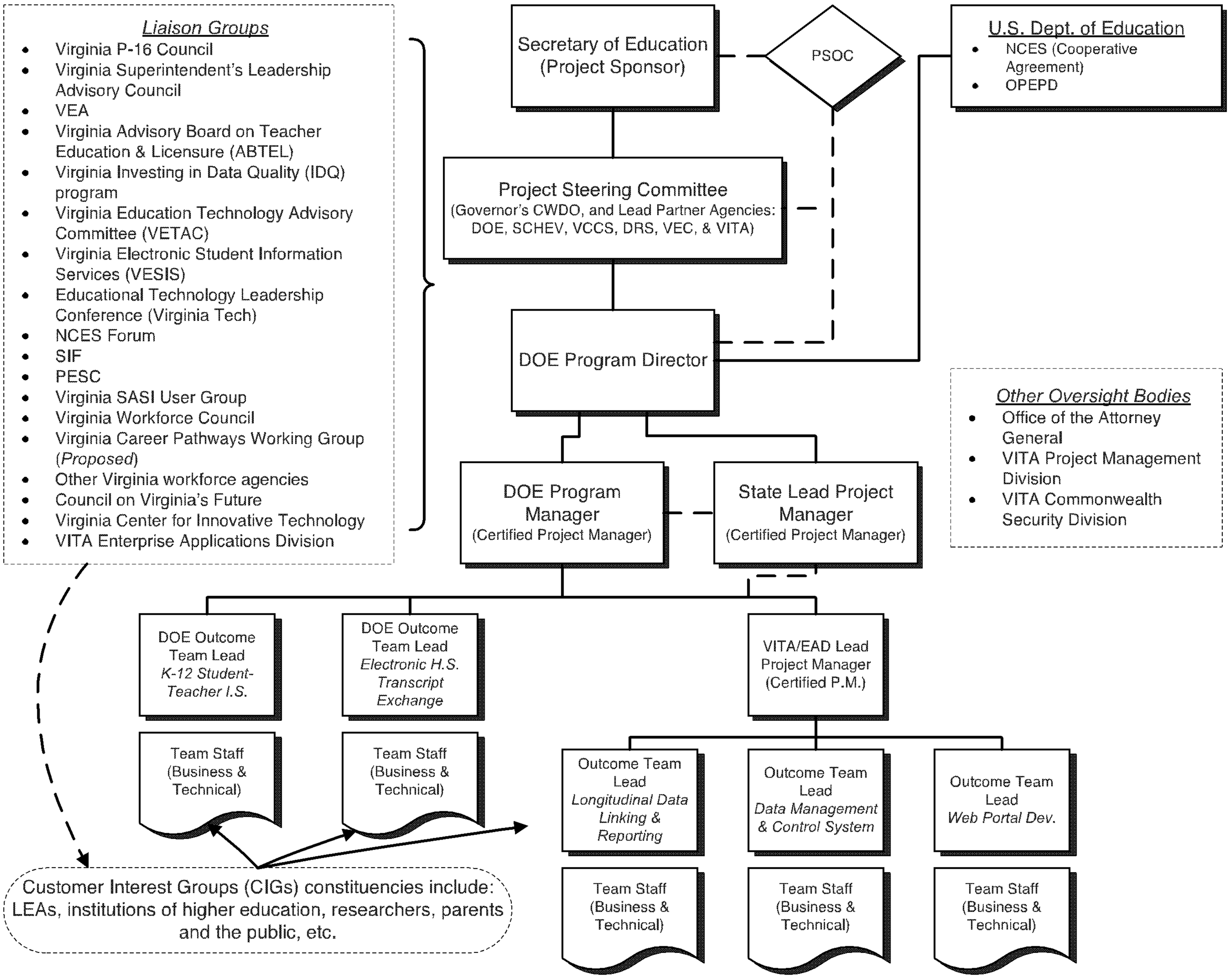
SCHEV will support this project by providing representatives to serve on the project's policy committee and management team. SCHEV will also designate at least ten percent of Tod Massa's time as Director, Policy Research and Data Warehousing, through the completion of the project. Further, Marina Moschos, Assistant Director for Data Warehousing, will be assigned for up to 25% of her time through grant support.

We look forward to hearing of a successful funding application, and to working with you in designing, developing and implementing the proposed longitudinal data system, which will significantly enhance our collective ability to conduct substantive research, inform evidence-based policy-making, and support continuous improvement to Virginia's education system.

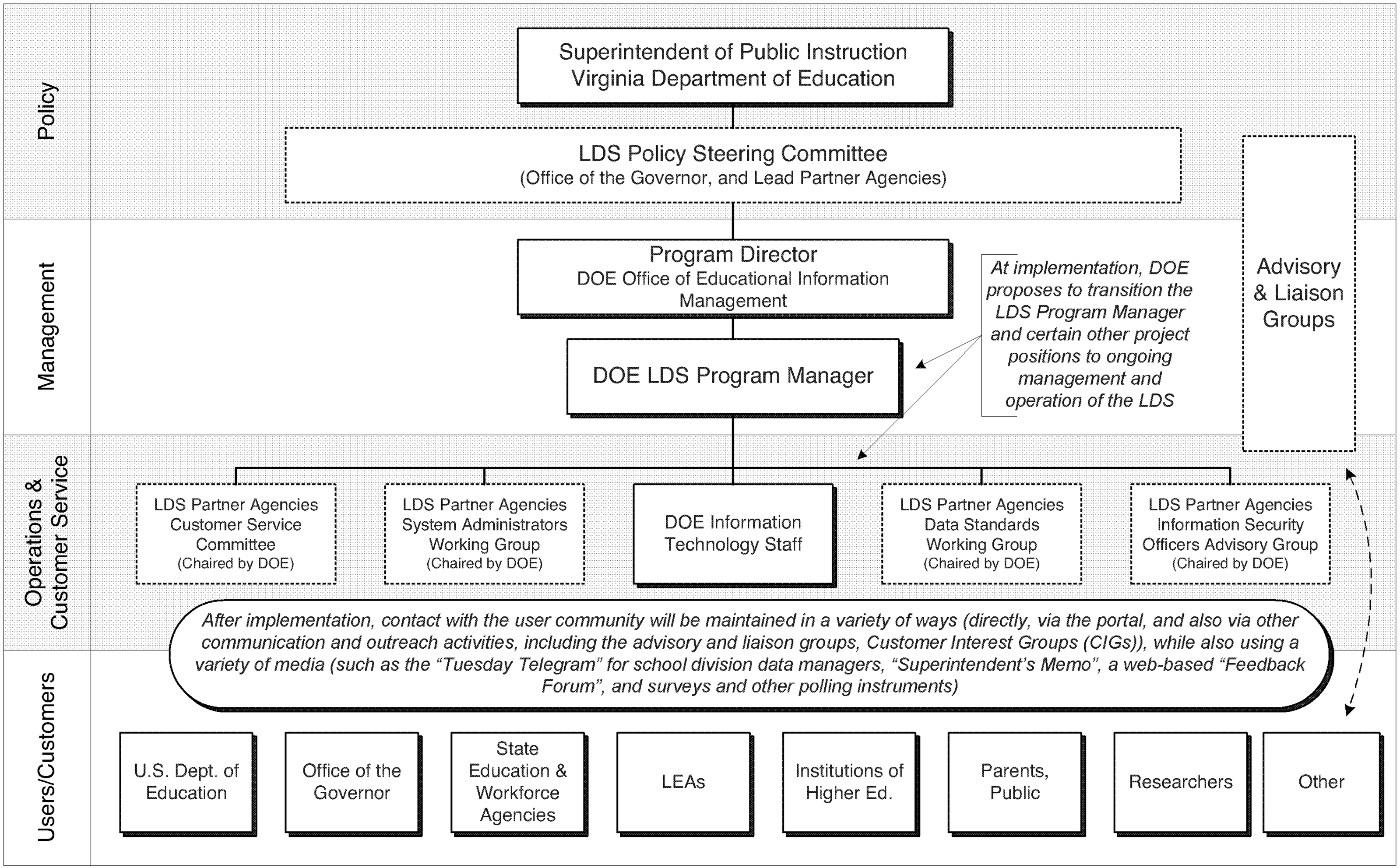
Sincerely,

Daniel J. LaVista

VIRGINIA LDS PROJECT ORGANIZATION



LDS Post-Project Governance



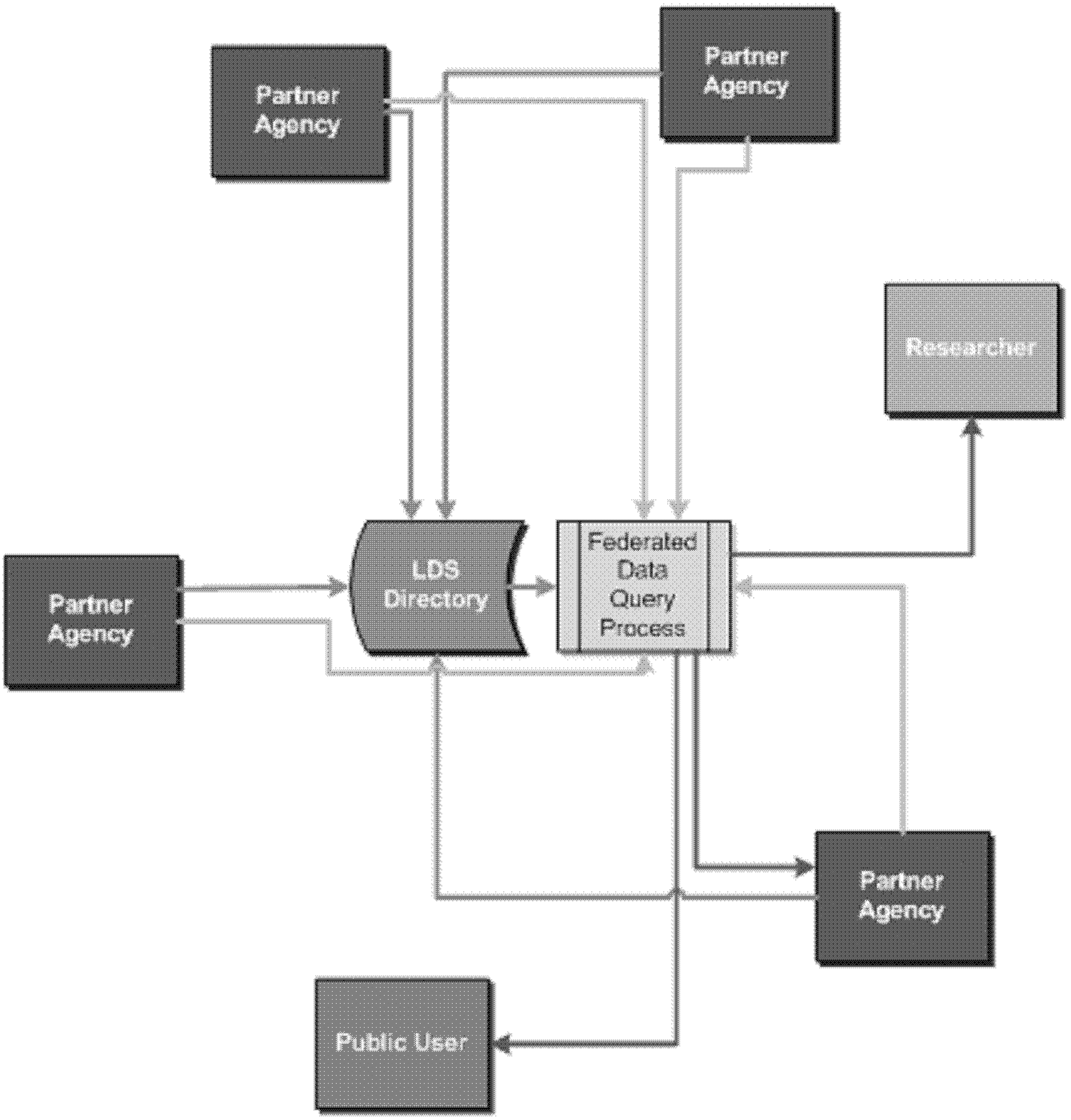


Chart #1 for Outcome #2 : Logitudnal data Linking and Reporting System Federated Data System - Conceptual View

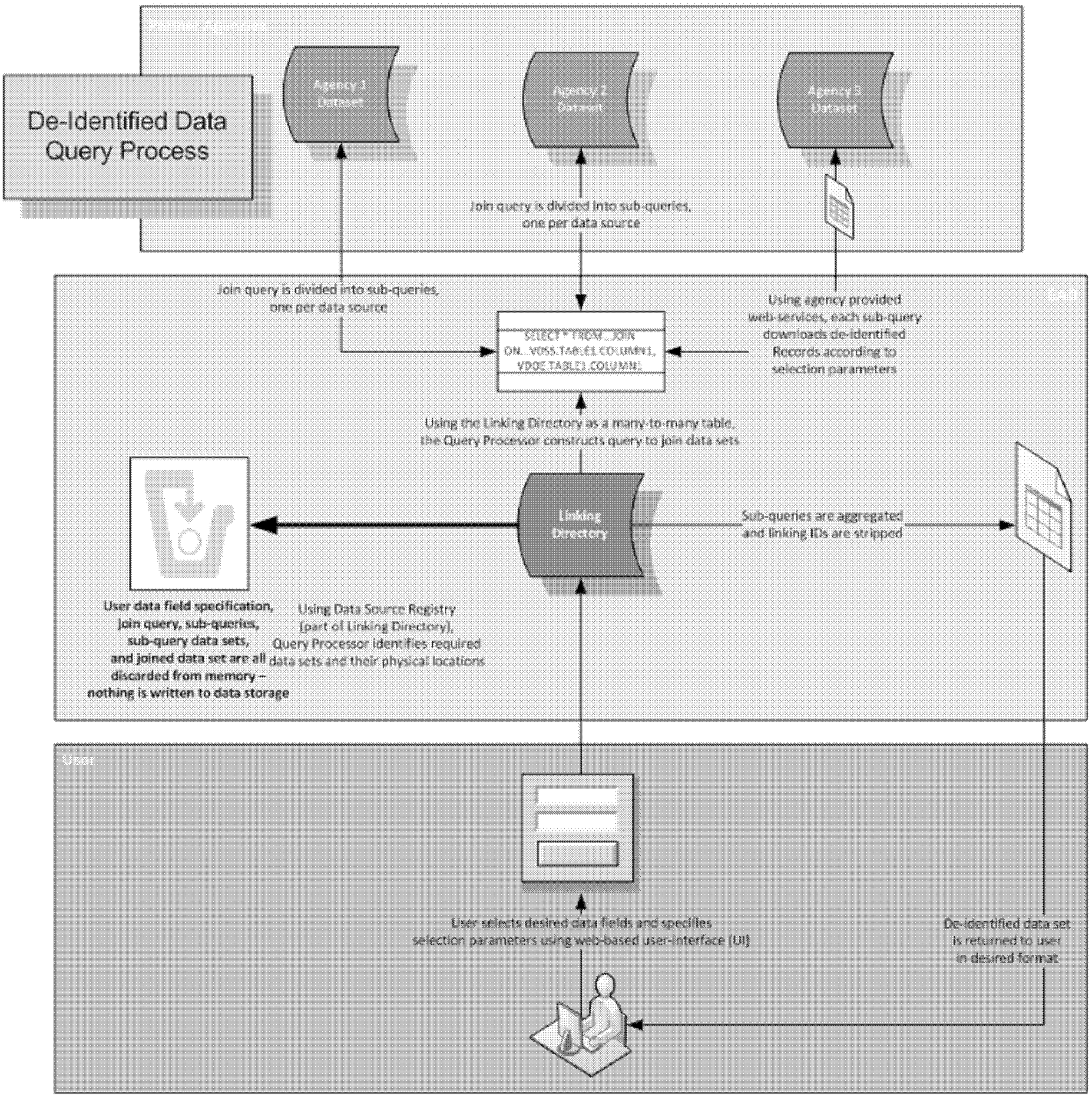
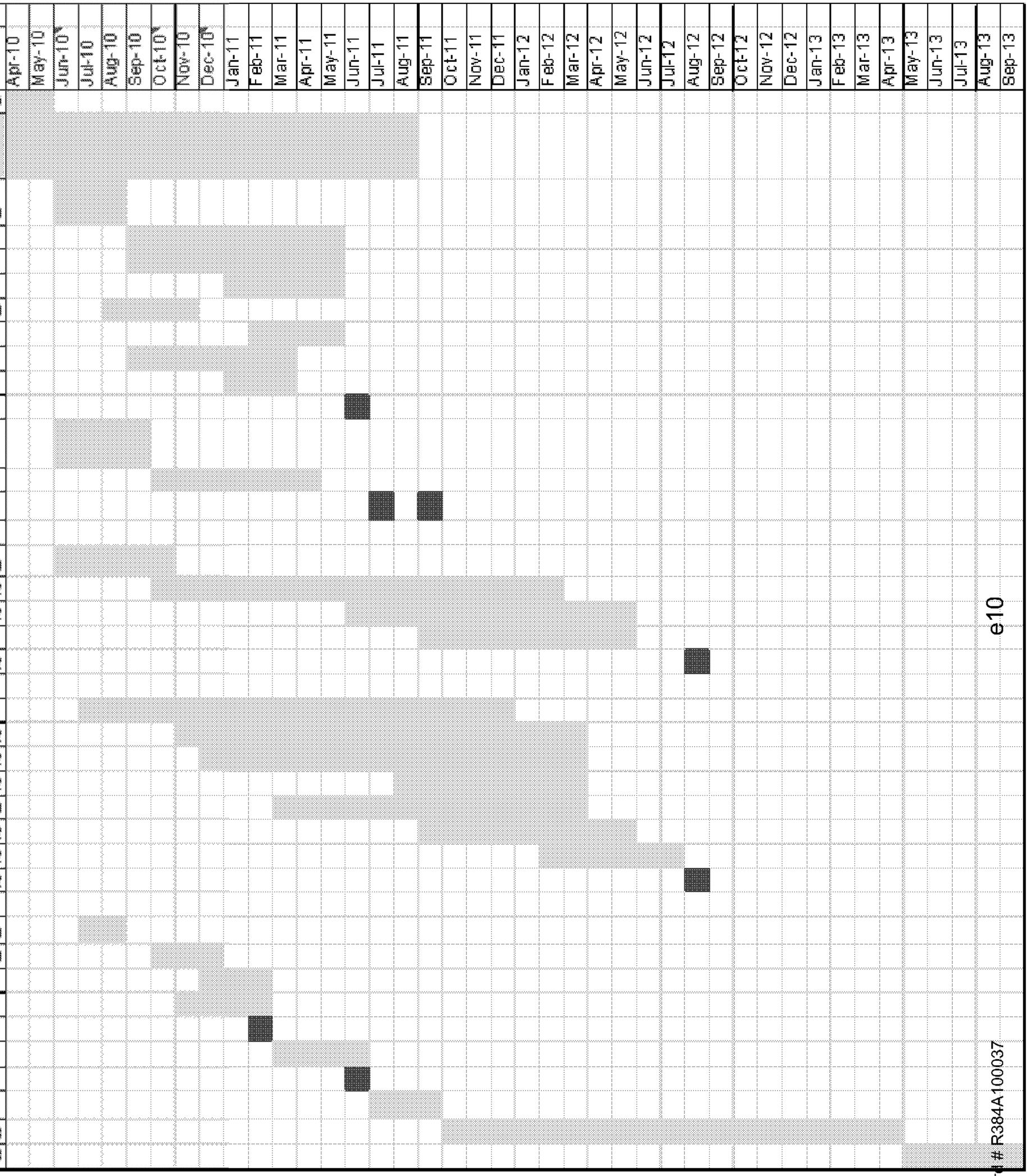


Chart #2 for Outcome #2 : Logitudnal data Linking and Reporting System : Data Query System- Conceptual View

Time Line Chart #1: Integrated K-12 Student Teacher Information System

Outcome # 1: Integrated K-12 student-teacher information system			
DOE- Department of Education, SD - School Divisions, EAD- VITA Enterprise Applications Division, VCCS - Virginia Community College System		Start Date	End Date
Preplanning and administrative functions		**Apr-10**	**May-10**
Build Data Collection System for Upload of Course Enrollment and Outcome Information	Agency		
Determine File Layouts, Business Rules	DOE/SD	Jun-10	Aug-10
DOE to develop software programs to receive the files	DOE	Sep-10	May-11
School divisions' vendors to develop code for information upload	SD	Sep-10	May-11
DOE to prepare routines to populate the Data Warehouse	DOE	Feb-11	May-11
Build scripts to link the student and teacher information	DOE	Aug-10	Nov-10
Create test files and test the upload process	DOE	Feb-11	May-11
Develop online and in person training programs	DOE	Sep-10	Mar-11
Conduct a pilot for data collection	DOE/SD	Jan-11	Mar-11
Launch full production capability	DOE	Jun-11	Jun-11
Determine reports for Academic Outcomes and Performance Standards	EAD	Jun-10	Apr-11
Train the school divisions to interpret the reports	DOE	Oct-10	Apr-11
Conduct first linked Student/Teacher Data Collection	DOE/SD	Jul-11	Jul-11
Build Data Collection System for Teacher / Principal evaluation			
Determine Data Elements and process for data capture	DOE/SD	Jun-10	Oct-10
DOE to develop web application needed for data collection	DOE	Oct-10	Feb-12
DOE to prepare routines to populate the Data Warehouse	DOE	Jun-11	May-12
Develop online and in person training programs	DOE		
Launch full production capability	DOE	Aug-12	Aug-12
Build Teacher Licensure System			
Provide a public-facing Web application for licensees	DOE	Jul-10	Dec-11
Modernize the current back-office licensure application	DOE	Nov-10	Mar-12
Build a process to capture longitudinal data for tracking licensure	DOE	Dec-10	Mar-12
Provide a secure mechanism to receive data	DOE	Aug-11	Mar-12
Provide an encryption/decryption mechanism	DOE	Mar-11	Mar-10
Develop online and in person training programs	DOE	Sep-11	May-12
Conduct a pilot for data collection using limited school divisions	DOE	Jan-12	Jul-12
Launch full production capability	DOE	Aug-12	Aug-12
School Division Grant Program			
Work with school divisions to develop grant application requirements	DOE/SD	Jul-10	Aug-10
Post grant applications	DOE	Oct-10	Dec-10
Select application review committee.	DOE	Dec-10	Feb-11
School Divisions develop responses to application requirements	SD	Nov-10	Feb-11
Applications are due	SD	Feb-11	Feb-11
Responses are evaluated, clarification sought from school divisions.	DOE	Mar-11	Jun-11
Awards announced	SD	Jun-11	Jun-11
MOUs developed and Projects Begin	DOE/SD	Jul-11	Sep-11
School divisions submit evidence of task completion	SD	Oct-11	Apr-13
Projects end and Program evaluation	DOE	Apr-13	Sep-13



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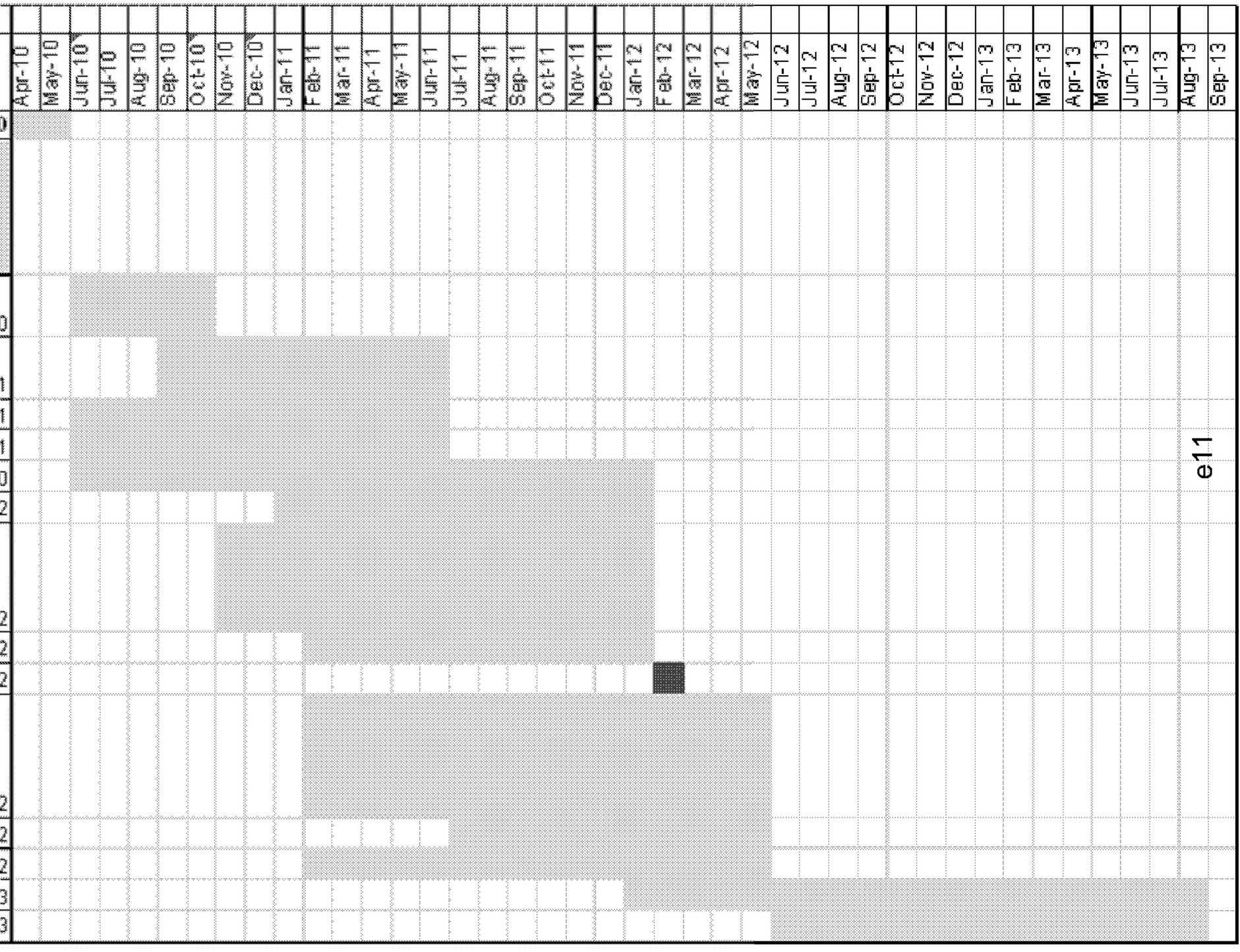
Time Line Chart # 2: Longitudinal Data Linking and Reporting System

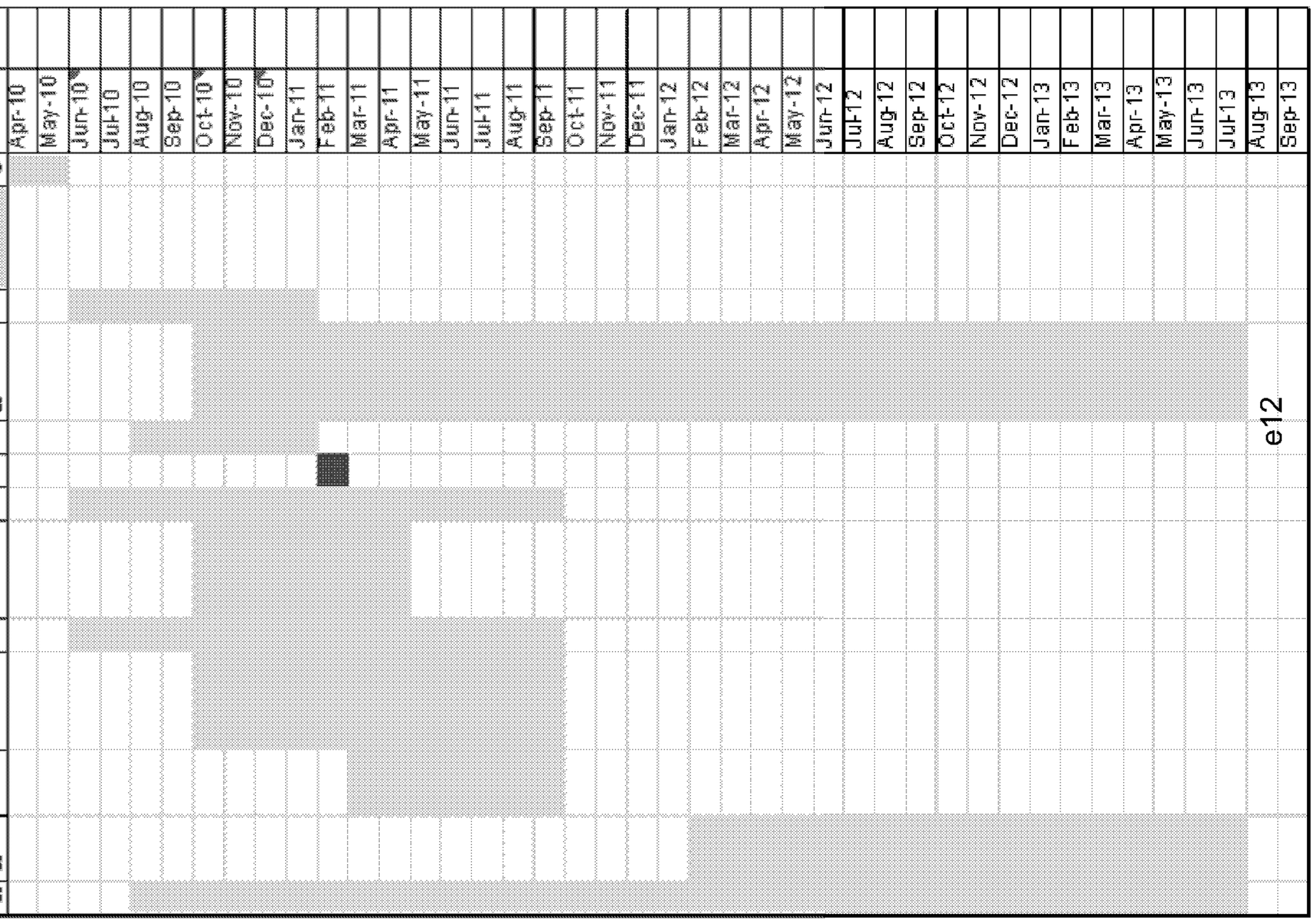
Outcome # 2: Longitudnal Data Linking and Reporting System			
DOE- Department of Education, SD - School Divisions, EAD- VITA Enterprise Applic ations Division, VCCS - Virginia Community College System		Start Date	End Date
Preplanning and administrative functions		**Apr-10**	**May-10**
Longitudinal Data Linking System	Agency		
Meetings with Stakeholders and Focus Groups to Determine the capabilities that need to be built	DOE	Jun-10	Oct-10
Develop a rubric to document data element definitions, meta-data requirements, and technical requirements.	EAD	Sep-10	Jun-11
Create Data sharing agreements	DOE	Jun-10	Jun-11
Provision Infrastructure & licenses	EAD	Jun-10	Jun-11
Build the central linking directory and data source registry. .	EAD	Jun-10	Nov-10
Establish the data query process for authorized user access	EAD	Jan-11	Feb-12
Additional capabilities within each agency to store query results, scrub and prepare the data for linking, and offer and receive data in XML format.	EAD with Other Agen	Nov-10	Feb-12
Implement Message Broker and web services	EAD	Feb-11	Feb-12
Data Linking capability achieved		Feb-12	Feb-12
A front-end application will enable the partner agencies and other stakeholders to log in, and create or execute queries based on previously defined data sharing agreements or rules built into the system.	EAD	Feb-11	May-12
Create and implement training plan	EAD	Jul-11	May-12
Build reporting capabilities	EAD	Feb-11	May-12
Build Reports derived from cross-agency linked data	EAD	Jan-12	Aug-13
Conduct a pilot to test the Linking and reporting capabilities	EAD	Jun-12	Aug-13



PR/Award # R384A100037

Time Line Chart # 3: Web-based Portal to Access Education and Workforce Data

Outcome # 3: Web-based portal to access education and workforce data			
DOE- Department of Education, SD - School Divisions, EAD- VITA Enterprise Applications Division, VCCS - Virginia Community College System		Start Date	End Date
Preplanning and administrative functions		**Apr-10**	**May-10**
To create a comprehensive data reporting portal for public and Agency Users	**Agency**		
Design and build the web portal	EAD	Jun-10	Jan-11
Work with agencies to add existing 'data sets' and reports from different agencies (education and workforce) to the reporting portal - One stop shopping for the users.	EAD	Oct-10	Jul-13
Create a role based user registration and access module	EAD	Aug-10	Jan-11
Launch the Reporting Portal	EAD	Feb-11	Feb-11
Enhance reporting infrastructure	EAD	Jun-10	Sep-11
Integrate GIS data layers to the reporting portal	EAD /Agencies	Nov-10	Apr-11
Implement Tools for ad hoc reporting and other analysis	EAD	Jul-10	Sep-11
Create and implement a training plan	EAD & DOE	Nov-10	Sep-11
Add reports build in the K-12 student teacher integrated system	EAD	Mar-11	Sep-11
Add reports and data sets created using data linking capabilities created in Outcome 2	EAD	Mar-12	Jul-13
Build reports and data sets for the portal	EAD	Aug-10	Jul-13



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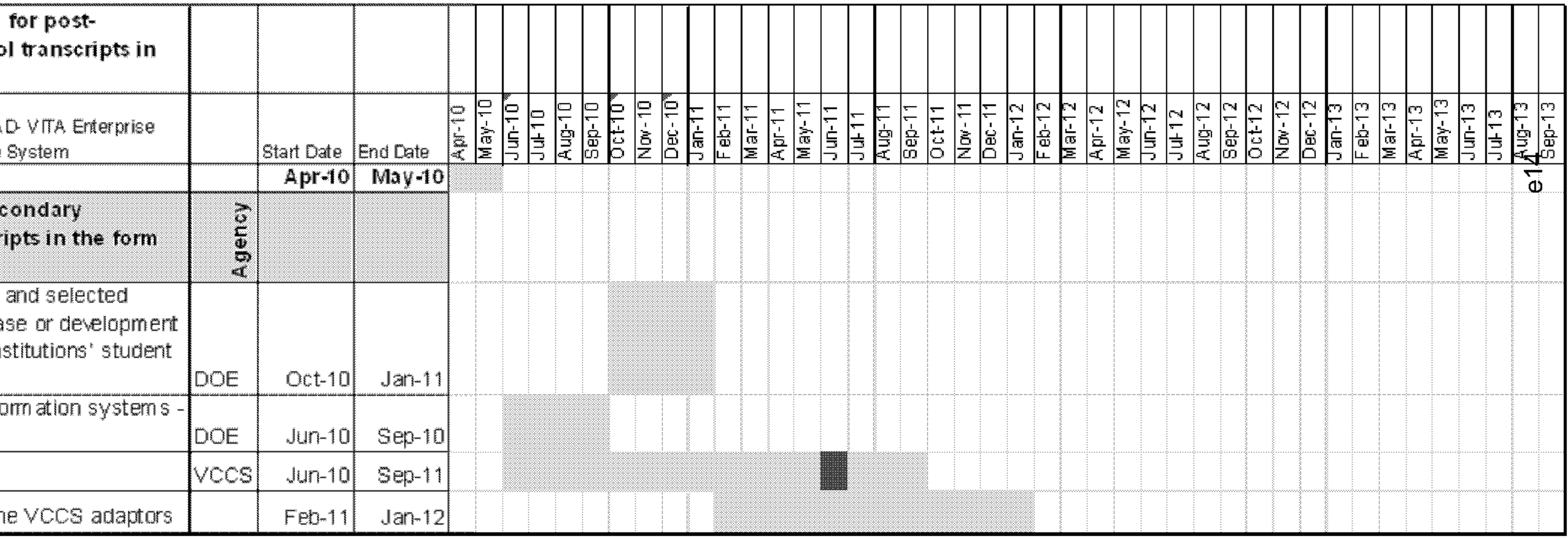
Time Line Chart # 4: Data Management and Control System

Outcome # 4: Data management and control system		Start Date	End Date
DOE- Department of Education, SD - School Divisions, EAD- VITA Enterprise Applications Division, VCCS - Virginia Community College System			
Preplanning and administrative functions		**Apr-10**	**May-10**
Establish Policy, Standards and Processes for Data Management and Control	**Agency**		
Develop lexicon	All partners	10-Apr	11-Jul
Develop quality assurance protocols	VITA	10-Apr	11-Jan
Establish role-based access protocols	VITA	10-Apr	10-Aug
Enhance and update existing security protocols	All partners	10-Apr	11-Jan
Develop security-related training materials	VITA	10-Sep	11-Mar

Time Line Chart # 5: **Electronic H.S. Transcripts Exchange**

Outcome # 5: Develop a secure mechanism for post-secondary institutions to receive high school transcripts in the form of electronic data			
DOE- Department of Education, SD - School Divisions, EAD- VITA Enterprise Applications Division, VCCS - Virginia Community College System		Start Date	End Date
Preplanning and administrative functions		**Apr-10**	**May-10**
Develop a secure mechanism for post-secondary institutions to receive high school transcripts in the form of electronic data	**Agency**		
VDOE will enter into agreements with VCCS and selected postsecondary institutions to fund the purchase or development of software adaptors that interface with the institutions' student information systems.	DOE	Oct-10	Jan-11
VDOE will select institutions with student information systems - Examples: Datatel, Banner, and PeopleSoft.	DOE	Jun-10	Sep-10
VCCS to build the software adaptors	VCCS	Jun-10	Sep-11
Other institutions purchase, build, or adapt the VCCS adaptors		Feb-11	Jan-12



PR/Award # R384A100037

Project Narrative

Project Narrative - Appendix B Resumes of Key Personnel

Attachment 1:
Title: **Virginia LDS Grant Appendix B** Pages: **29** Uploaded File:
F:\AllTheARRADocuments\FinalProducts\VirginiaLDSAppendixB.pdf

Bethann H. Canada

Virginia Department of Education (1981 – present)

- Director of Educational Information Management
  Responsible for meeting state and federal education reporting requirements through leadership in the implementation of statewide administrative educational applications, integrated systems development, and data administration.

- Previous positions with the Virginia Department of Education include: Information Systems Principal, Systems Engineer, Systems Analyst, Senior Programmer/Analyst, Programmer/Analyst, Programmer

Professional Activities

- Member, NCES Data Standards Working Group
- Board Member, Schools Interoperability Framework Association
- Member, Virginia CIO Advisory Council
- Past-Chair, National Forum on Education Statistics
  - Task Force work: Technology in Schools, Data Quality, Decision Support Systems, Data Model, Race/Ethnicity
- Past-Chair, National Education Statistics Agenda Committee
- Past-Chair, Education Information Management Advisory Committee General Statistics Permanent Standing Task Force

Professional Certification

- Certificate in Data Processing,
  Institute for Certification of Computer Professionals

Recognition

- Virginia Educational Technology Leadership Award (2003)
- Data Quality Campaign Leadership Award (2006)

Education

- Virginia Commonwealth University, Richmond, VA
  - Post Baccalaureate Certificate, Information Systems (1984)
  - B.S., Sociology (1980)
- Commonwealth Management Institute (2000)

RESUME OF JOHN K. SHELDON

Virginia Information Technologies Agency
(b)(6)
John.sheldon@vita.virginia.gov

PROFESSIONAL EXPERIENCE

2005-Present **SPECIAL PROJECTS MANAGER/LEAD FINANCIAL ANALYST**
Virginia Information Technologies Agency
Carry out special cross-functional projects as requested by agency executive management. For example, as part of VITA's partnership with Northrop Grumman for the provision of statewide IT services, led a Finance Transition Task Force of over 30 staff to prepare agency systems. Served as project manager for a mission-critical replacement of the legacy budgeting application with a PeopleSoft EPM budgeting system, and directed an agency-wide "benefits realization" performance measurement study. As lead financial analyst, provide specialist services in the design of analytical methods and tools to develop and maintain financial reporting functions. Perform financial analyses, and provide financial reports to agency management and the Information Technology Investment Board, and external agencies such as the Dept. of Planning and Budgeting. Led agency study of "general and administrative" costs.

1997-2005 **TECHNOLOGY PLANNER**
Supreme Court of Virginia, Richmond, Virginia
Responsible for development of the triennial technology plan for Virginia's courts, and preparation of the IT-related budget. Led projects dealing with Y2K, disaster recovery planning, seat management Total Cost of Ownership (TCO) analysis, and electronic case filing. Directed projects for procurements of a judicial videoconferencing network, and a Help Desk solution. Identified and researched emerging and innovative IT solutions, and developed technology transfer plans in support of the courts of Virginia. Conducted feasibility and cost-benefit studies.

1996-1997 **TECHNOLOGY INSTRUCTOR**
AmeriData Learning Center, Richmond, Virginia
During doctoral studies, served as technology instructor, teaching project management (including use of MS-Project), database development (using MS-Access), and basic instruction in the MS-Office suite. Also performed training program and train-the-trainer consulting services.

1991-1995 **INFORMATION TECHNOLOGY PLANNER (SYSTEMS ANALYST)**
Virginia Department of Motor Vehicles, Richmond, Virginia.
Served as an internal technology consultant and facilitated integrated agency information technology (IT) planning process. Managed technology transfer projects. Carried out research and feasibility studies of information technologies/technology transfers. Performed obsolescence analyses of DMV IT systems, and cost-effectiveness analyses of potential acquisitions. Conducted an agency risk assessment, adapting the LAVA software for state-agency purposes. Implemented an IT project management system using Enterprise PM software.

1990-1991 **POLICY ANALYST**
Virginia Department of Motor Vehicles, Richmond, Virginia.
Responsible for completing large-scale policy and planning studies for the Department. Developed an agency strategic planning process. Typical job areas included research initiatives, program evaluation, legislative and policy analysis, and program planning and feasibility studies.

1987-1990 **BUSINESS MANAGER**
Virginia Department of Historic Resources,
Richmond, Virginia. Chief agency administrative officer with responsibility for budgeting and financial management, grant administration, human resource management, and procurement. Supervised agency fiscal and HR staff. Led effort to implement agency's first use of computers.

1984-1987 **DIRECTOR OF OPERATIONS**
Expand Associates, Inc., Silver Spring, Maryland.
Chief operating officer in a management consulting firm, with business management and consulting responsibilities, including development of new corporate research program offerings.

1981-1982 **COORDINATOR FOR PROGRAM DEVELOPMENT**
Institute for Educational Leadership, Washington, D.C.
Coordinated the development of new Institute programs, with responsibility for a network of state education policy seminars, and national policy and fellowship projects. Assisted in the recruitment and selection of program fellows and participants, and supervised support personnel.

EDUCATION

1991-1997 **DOCTORAL STUDIES IN PUBLIC ADMINISTRATION**
Virginia Commonwealth University, Richmond, VA
Courses in operations research, management information systems, budgeting, program auditing and strategic planning.

1983-1984 **MASTER OF ARTS IN PUBLIC POLICY**
The George Washington University, Washington, D.C.
Central focus on research methodology and quantitative analysis. Elective coursework emphasized public administration, and policy and organizational analysis.

1973-1978 **BACHELOR OF ARTS IN PHILOSOPHY AND POLITICAL SCIENCE**
The George Washington University, Washington, D.C.

PROFESSIONAL DEVELOPMENT/TECHNICAL SKILLS

Certified Project Management Professional (PMP). (Also qualified as a project manager for major projects under the Commonwealth Project Manager Standard).

Virginia Executive Institute (State executive development program).

Courses in project management, systems analysis, database design, business and accounting, etc.

Computer applications: SAS, PeopleSoft Financials, MS-Project, MS-Office (including Access, Excel, and Visio), etc.

Tod R. Massa

(b)(6)

Policy Research and Data Warehousing Director

State Council of Higher Education for Virginia, February 2001 to present.

- Developed and produced the first three editions of the state's public higher education accountability report, the Reports of Institutional Effectiveness, which have provided policy-relevant data resulting in gubernatorial and legislative support for increased spending on research and public service.
- Produced the 2003 edition, "Revised Enrollment Demand Projections through 2010 and Potential Gaps in Higher Education Services" volume for the Council.
- Produced a fifteen-year retrospective of enrollment in the Commonwealth entitled, "Enrollment Trends at Virginia's Public Colleges and Universities Report."
- Designed and lead the development of a new web-based data warehouse of student-level data supporting the work of the Council, the legislature, and the administration. This warehouse has radically transformed the business model of the agency.
- Developed the Continuity of Operations Plan (COOP) for the agency to develop a model for reestablishing complete operational capability within 10 days of a major event.
- Transformed the agency's IT functions by redesigning the network and server configurations and implementing a complete desktop replacement across the agency.
- Developed a web-based legislation tracking system to manage agency interests during the general assembly session.

Director of Institutional Research and Planning Support

Willamette University, 11/1/94 to 1/22/2001

Institutional Research Coordinator/Academic Policy Analyst

Saint Louis University, 8/19/91 – 10/21/94

Education

Doctoral Work in Public Policy Analysis and Planning, Saint Louis University, course work completed.

Master of Public Administration, Southern Illinois University at Edwardsville, March 1991.

Bachelor of Arts in Studio Art from Missouri Southern State College, May 1988.

Military Experience

Honorably discharged from the US Army and the US Army. Awarded the Army Achievement Medal. Twice awarded the Department of the Army Certificate of Achievement, and the Good Conduct Medal.

National Involvement

- Technical Review Panel, IPEDS Derived Variables, 2004.
- Technical Review Panel, 1993 Baccalaureate and Beyond Survey (NCES)
- Race/Ethnicity reporting Standards Working Group – National Postsecondary Education Cooperative (NPEC)
- Accessing Survey Resources Working Group – National Postsecondary Education Cooperative (NPEC)

PROFESSIONAL ASSOCIATIONS

Association for Institutional Research

- Graduate Certificate Advisory Board, 2004-2006
- Higher Education Data Policy Committee, 2001-2004,2004-2007
- Nominating Committee, 2001
- Recipient of the Outstanding Service Award, 2000
- Chair, Task Force on Information Practices and Technology, 1998-99
- Chair, Computing Technical Support, 1998 AIR Forum
- Convener, Electronic Factbook SIG, 1997 to present
- Convener, Microsoft Access SIG, 1997 -2002

MARINA MOSCHOS

(b)(6)

PROFESSIONAL EXPERIENCE – SUMMARY:

A results-focused professional who manages section staff, conducts policy analysis, builds and maintains systemwide databases and develops on-line reports and tools to drive statewide policy decisions. Directs multiple agency projects in a challenging and rapidly changing environment. Recognized for outstanding analytical, organizational, strategic planning, and problem-solving skills.

NOTABLE ACCOMPLISHMENTS:

- Oversees SCHEV's data warehouse used for statewide higher education policy-making
- Worked with Research staff to develop the Virginia College Student Identification Number (VCSIN) - replaces social security as the primary ID in all of SCHEV data collections so students can be tracked longitudinally across student files
- Teamed with Research section to author the chapter "Developing a Statewide Tracking Tool" for the *"New Directions in Institutional Research"*
- Led the design and implementation of the TAG units Web Tool – used to track the number of TAG units a student has used to-date
- Co-directed the design, building and implementation of SCHEV's Student Success Tool (Student Tracking System) – used to track student success from a VA high school through postsecondary graduation
- Served as a primary author to the "*2007 Enrollment Trends at Public Colleges and Universities"* report
- Writes issue briefs and reports for the agency's section directors and agency's Executive Director
- Worked with Policy Research Section on the creation of and data analysis for the Reports of Institutional Effectiveness, a nation- leading report on higher education accountability
- Conducts statistical analysis on Virginia's college student characteristics
- Served as a 'Proposal Reader' to evaluate and determine proposal competency for the Association of Institutional Research 2005 Forum
- Assisted in the production of the Florida Department of Environmental Protection's Secretary's Quarterly Performance Report which was a finalist for the Ford Foundation's 1998 and 1999 Innovation in American Government award competition

AREAS OF PROFESSIONAL STRENGTH AND TECHNICAL SKILLS:

- Proven Leadership Ability
- Team Builder
- Strong Organizational and Communication Skills
- Analytical Problem-Solving
- Time Management
- Accomplished Skills in Microsoft Office (Word, Excel, Access, and Power Point)
- Data Warehouse Development and Database Design
- Proficient in ASP, HTML, SQL & Web Design
- Ability to work with SAS and SPSS

PROFESSIONAL EXPERIENCE – SPECIFIC:

Assistant Director for Data Warehousing – Policy, Research & Data Warehousing; June 16, 2005 – current.
State Council of Higher Education for Virginia (SCHEV), 101 North 14th Street. Richmond, Virginia 23219.

- Directs the Data Warehousing Team (DWT) in the development and maintenance of the data warehouse; provides guidance and direction to the Research section about data warehouse issues and provides training and assistance to the Research section on ad hoc requests, special projects, and technical issues to ensure staff can meet their responsibilities and assignments
- Directs the design, development, and implementation of the data collection system for Virginia's higher education institutions
- Conducts analysis using the data warehouse in support of agency policy-making and statewide Reporting
- Assists all sections of the agency in use and analysis of statewide higher education data
- Manages the design, implementation and maintenance of the on-line reports and analytical tools built for agency and public use

PROFESSIONAL EXPERIENCE – SPECIFIC: (CONTINUED)

- Maintains and ensures the security of individual student records, as collected and maintained by the agency, in compliance with state and federal
- Manages all required standard data collections for Virginia institutions (public & private-not-for profit)
- Coordinates the SCHEV Research communications with the institutions about data collection changes and schedules, and provides guidance and assistance to the SCHEV Research liaisons and direction and support to institutional representatives regarding data collections
- Responds to internal and external ad hoc data requests from the Executive and Legislative branches, as well as the press, institutions and the general public
- Manages DWT and oversees daily operations in absence of the Section Director

Senior Policy Research Analyst – Policy, Research & Data Warehousing; January 2, 2002 – June 15, 2005. *State Council of Higher Education for Virginia (SCHEV), 101 North 14th Street. Richmond, Virginia 23219.*

- Designed and implemented on-line analytical tools and reports
- Planned and implemented the Data Collection System for Virginia's higher education Institutions
- Worked as part of a team in fast-paced, high volume environment that conducts policy analysis and creates and uses on-line reports to shape policy decision-making for state government
- Wrote issue briefs and reports for Executive Director and Director of Policy Research & Data Warehousing
- Participated in cross-sectional projects, including the affordability and transfer studies
- Conducted statistical analysis on Virginia's college student characteristics
- Served as agency liaison and primary contact for several Virginia private institutions

Student Affairs Analyst – Student Affairs; July 1, 2000 – January 1, 2002. *SCHEV.*

- Conducted statistical analysis on Virginia public institutions' financial aid characteristics
- Coordinated the Academic Common Market (ACM) for the Commonwealth of Virginia, a reciprocal agreement among the southern regional states
- Analyzed courses and curriculum's of degree programs requested for ACM status
- Served as primary public contact for several statewide or regional programs

Research Specialist - Governance and Accountability; August 2, 1999 – June 31, 2000. *SCHEV.*

- Researched, and produced a report on state teacher recruitment programs for the Joint Task Force on Teacher Education
- Performed library and on-line research and literature reviews
- Conducted statistical comparison of Virginia college students
- Assisted in the production of the capital outlay recommendations

PROFESSIONAL EXPERIENCE – SPECIFIC: (CONTINUED)

Planner I/Research Analyst Office of the Secretary – Strategic Projects & Planning; May 1997 – July 1999.
State of Florida, Department of Environmental Protection, 3900 Commonwealth Blvd. Tallahassee, Fl 32399.

- Assisted in the developed and production of the Secretary's Quarterly Performance Report
- Compiled and conducted statistical analysis on performance data
- Tracked and reported on the activities being conducted pursuant to the Department's Performance Partnership Agreement with the US EPA Region IV
- Gathered and reported on the Department's Environmental Problem Solving efforts
- Compiled and drafted the Department's response to the U.S. EPA Compliance Information Project survey
- Assisted in the production and management of the Department's annual Compliance and Enforcement workshop

CONFERENCES, PRESENTATIONS AND REPORTS:

- Teamed with Research section to author the chapter "Developing a Statewide Tracking Tool" for *"New Directions in Institutional Research"*, Summer 2008
- Served as a primary author to the "*2007 Enrollment Trends at Public Colleges and Universities"* report
- Presented at the Virginia Association for Management Analysis and Planning (VAMAP) Fall 2007 conference, "20 Years in the Making", October 2007
- Presented at the Southern Association for Institutional Research conference, "Tools for Research Student Tracking System", October 2006
- Presented on the SCHEV Research Data Collection System and data collection issues to Virginia Community College Financial Aid and Institutional Research staff, March 2006
- Trained the Virginia Community College Financial Aid staff on SCHEV Research Data Collection System, March 2005
- Developed training materials, coordinated training and trained more than 50 institutions to use the SCHEV Data Collection System, August 2004
- Presented at the Virginia Association for Management Analysis and Planning conference, Fall 2004
- Co-Authored the "*Enrollment Trends at Virginia Colleges and Universities"* report, April 2003
- Planned and coordinated State Council of Higher Education for Virginia 2000 Systemwide Conference, Spring 2000

MEMBERSHIPS:

- Member of the Association of Institutional Research
- Member of the Virginia Association for Management Analysis and Planning

EDUCATION:

- Commonwealth of Virginia Management Institute (CMI), October 2004
- Master of Public Administration; *Florida State University*, 1998
- Bachelor of Arts in Political Science (Cum Laude); *Hope College*, 1995

References Provided Upon Request

Deborah L. Jonas, Ph.D.
Executive Director for Research and Strategic Planning
Virginia Department of Education
P. O. Box 2120
Richmond, VA 23218
Email: **Deborah.Jonas@doe.virginia.gov**
Phone: 804-225-2067

Education

- Ph.D., Cognitive Psychology, Duke University, 2000
- M.A., Cognitive Psychology, Duke University, 1998
- M.S., Experimental Psychology, Lehigh University, 1995
- B.A., Psychology, University of Maryland, 1993

Professional Experience

Executive Director for Research and Strategic Planning, May 2007- present
Virginia Department of Education, Richmond VA

- Responsible for conducting, coordinating, and overseeing scientifically based research and analyses conducted by the department and in cooperation with partner agencies and organizations.
- Provide internal consultation services to VDOE staff on issues pertaining to research, analysis and program evaluation and supports the department's strategic and operational process-improvement initiatives, particularly those related to data and data use.
- Provide support and advice to the superintendent of public instruction, the executive leadership of the department and VDOE staff.

Research Analyst, 2002-2007
The CNA Corporation, Alexandria VA
Worked with inter-disciplinary research teams to design and execute applied research studies. Research areas included education, emergency response operations, and military training.

Research Scientist, 2000- 2002
MEDTAP International, Bethesda MD
Designed, managed, executed, and analyzed patient-reported outcomes (PRO) studies. These studies evaluated the patients' perspective of the impact of disease, medical care and treatment on their lives. Outcome measures include health-related quality of life, symptoms, compliance, satisfaction and preference.

Clinical Research Associate, 1996- 1997; 1998- 1999
ClinTrials Research, Cary NC
Developed and implemented ongoing training to members of the in-house monitoring team and staff at multiple research sites. Managed research sites to verify and encourage compliance with the protocol, FDA regulations, and client guidelines. Recruited and selected quality investigators to participate in clinical trials. Analyzed and improved processes to ensure the accuracy and validity of data.

Select Publications and Presentations

Jonas, D. (October 2009). *Where do all the data go? Turning data into information for stakeholders.* Paper presented at the 15th Annual Virginia Educational Technology Conference. Richmond, Virginia.

Jonas, D., & Vucci, M. (June 2009). *Virginia Department of Education Briefing: Regulations Establishing Standards for Accrediting Public Schools in Virginia (SOA) - Changes for the 2009-2010 School Year and Beyond.* Paper presented at the Virginia School Boards Association meeting, July 2009.

Jonas, D. (April, 2009). *Data use and its role in increasing graduate rates: New data and tools from the Virginia Department of Education.* Presentation at Virginia's 2009 Regional Dropout Prevention Forum. Wytheville, Va.

Jonas, D.L. & Stith-Williams, V. (March, 2009). *Virginia's Policies and Paths to Graduation: Renewed efforts to improve support for all students.* Presentation at the 2009 Secondary Transition State Planning Institute. Charlotte, NC.

Jonas, D.L. & Dyke, F. (June, 2008). *Understanding your graduation data and strategies for taking action*. Paper presented to the 81st annual meeting of the Virginia Association of Secondary School Principals Association. Hot Springs, VA.

Jonas, D.L. (2007). *Study of high school dropout and graduation rates in the Commonwealth (SJR 329)*. Presented to the Virginia Board of Education, October 18, 2007. Available online: http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/SD162007/$file/SD16.pdf.

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Schlicher, R. & **Jonas, D.L**. (2006*). Final report: The analysis of statewide data relating to the requirements for obtaining a high school diploma for students with limited English proficiency*. Presented to the Virginia Board of Education, January 10, 2006. Available online: http://leg2.state.va.us/dls/h&sdocs.nsf/By+Year/SD82007/$file/SD8.pdf.

Jonas, D.L. & Speers R. (2006). *Learning from Foreign Animal Disease (FAD) response operations and exercises: Recommendations for a comprehensive exercise program.* IPR11758. Alexandria, VA: The CNA Corporation.

Jonas, D.L, Daly, M. & Speers, R. (2006). *Interagency incident management of the 2005 BSE case investigation*. IPR 11735. Alexandria, VA: The CNA Corporation.

Speers, R., **Jonas, D.L**., Beard, L., Landry, G., & Myrus, E.. (2006). *Learning from Foreign Animal Disease (FAD) response operations and exercises: Recommendations for USDA-APHIS.* IPR 11757. Alexandria, VA: The CNA Corporation.

Jonas, D.L., Speers, R., Nebelkopf, D., & Myrus, E. (2005). *Strategic Exercise Plan for Emergency Response Operations. Office of Public Health Emergency Preparedness, US Department of Health and Human Services*. IPR 11566. Alexandria, VA: The CNA Corporation.

Jonas, D.L., Speers, R., Nebelkopf, D., & Myrus, E. (2005). *Methods, results, and recommendations for the HHS Strategic Exercise Plan*. IPR 11565. Alexandria, VA: The CNA Corporation.

Jonas, D.L., Giovachino, M., Nebelkopf, D. (2004). *Analysis of mental health and substance abuse emergency response in Operation Healthy Challenge*. IPR 11086. Alexandria, VA: The CNA Corporation.

Kiebert, G., **Jonas, D.L**., & Middleton, M. (2003). Health related quality of life in patients with advanced metastatic melanoma: Results of a randomized phase III study comparing temozolomide with dacarbazine. *Cancer Investigation, 21*,821–829

Jonas, D.L.(2002). *The impact of stress on performance and the potential of live-fire training to mitigate decrements*. CME D0006043.A2/Final. Alexandria, VA: Center for Naval Analyses.

Speers, R., Jaditz, T., Giovachino, M., & **Jonas, D.L**. (2002). *Assessing NDMS response team readiness: Focusing on DMATs, NMRTs, and the MST*. IPR 10785/Final.

Jonas, D.L., Blumenthal, J.A., Serra, M., & Madden, D.J. (2001). Neuropsychological Consequences of Anti-hypertensive Medications. In SR Waldstein and MF Elias's (Eds.), *Neuropsychology of Cardiovascular Disease*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Li, K. Z. H., Hasher, L., **Jonas, D.,** Rahhal, T. A., & May, C. P. (1998). Distractibility, circadian arousal, and aging: A boundary condition? *Psychology and Aging, 13*, 574-583.

Other activities

- National Education Data Model P-20 Steering Committee, Member, June 2009- present
- Regional Educational Laboratory (REL) Appalachia Governing Board: Member, August 2008-present
- Regional Educational Laboratory (REL) Appalachia Executive Committee, Member, 2008-present
- Virginia's School Readiness Task Force: 2006-2009
- Advisory Group to the Virginia Early Childhood Foundation, member, 2009-present

Ongoing Grants

Virginia's Longitudinal Systems Expansion Project
Institute of Education Sciences grant award to the Virginia Department of Education
Total time commitment: 5 percent

Building Child and Family Policy Research Data Capacity for the Commonwealth of Virginia: An Integrated Model
Cooperative agreement, Virginia Department of Social Services and U.S. Department of Health and Human Services.
Total time commitment: 5 percent

Kathleen Q. Graham
VA Information Technology Agency
Enterprise Applications Division
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(804) 285-1721
kathy.q.graham@vita.virginia.gov

Professional Experience

Jan 2009 – Present **VA Information Technologies Agency** **Richmond, VA**

Business Intelligence Competency Center Manager

- Develops and manages relationships with Commonwealth agencies regarding their need for business intelligence
- Manages core staff of business intelligence developers who create and support business intelligence applications for Commonwealth of VA agencies
- Manages relationships with primary business intelligence vendors
- Leads the Business Intelligence Competency Center, which is a community of practice for business intelligence across the Commonwealth, and provides opportunities for collaboration and professional development
- Provides project management for enterprise application development as needed
- First business intelligence project, reports for **www. Stimulus.virginia.gov** won a 2009 Digital Government Achievement Award in the government to citizen services category

Feb 2008 – Jan 2009 **VA Dept. of Game & Inland Fisheries** **Richmond, VA**

Information Technology Services Manager

- Managed information technology services for agency of approximately 460 staff, including both day-to-day operations and application development
- Duties included developing strategic and operational plans, managing the budget and personnel resources, coordinating with VA Information Technologies Agency on major projects and on infrastructure transformations, and managing major development projects
- Advised senior staff on technology decisions and investments
- Led agency-wide organizational efficiency study
- Served on Commonwealth of VA committees related to information technology

Jan 2005 – Feb 2008 **VA Dept. of Game & Inland Fisheries** **Richmond, VA**

Information Technology Project Manager

- Managed all software application development projects for the Agency, including web development in Visual Basic.Net, Windows development in Windows Server 2000 and 2003 and SQL Server 2000 and 2003, PowerBuilder, Access, and a variety of other legacy software development platforms.
- Supervised 8 programmer-analysts and 2 testing and documentation specialists.
- Knowledgeable and experienced in managing Commonwealth of Virginia IT projects and coordinating with the Virginia IT Infrastructure Partnership regarding policies and procedures.
- Experienced in the use of the Commonwealth's IT portfolio management software (ProCite).
- Project Manager for the Automated License Sales System project, which was awarded a 2006 Digital Government Achievement Award Served on VITA committee to review and finalize project management guidelines.

Sept 2000 - Dec 2005 **VA Dept. of Game & Inland Fisheries** **Richmond, VA**

Program Manager, Fish and Wildlife Information Services

- Managed all operations related to the management of fish and wildlife information and geographic information services for the agency

- Supervised 5 biologists, 3 geographic information systems (GIS) specialists, 2 programmer-analysts, and 1 administrative assistant.
- Project manager on a successful 2-year project to re-engineer the Agency's web-based system of wildlife information. This project involved migrating data and functionality from a legacy system to state-of-the-art software.
- Led Career Track Advancement Program

Aug 1996 - Sept 2000 **VA Dept. of Game & Inland Fisheries** **Richmond, VA**

Online Service Coordinator

- Managed the operations of the Agency's online system of wildlife information called the VA Fish and Wildlife Information System (VAFWIS) now available at www.vafwis.org.
- Served as liaison between the programmer-analysts and the users of the system; managed system enhancements and maintenance.
- Performed outreach to and training for users of the system, which included professionals with federal, state and regional agencies; private industries; consulting firms; educational institutions; and private citizens.

Aug 1995 - Jul 1996 **VA Dept. of Game & Inland Fisheries** **Richmond, VA**

Research Specialist

- Provided help desk support for the Agency's online system of wildlife information.
- Conducted system testing and coordinated with Developer to make modifications.
- Conducted user training classes, wrote user documentation, and performed demos of system.

Dec 1993 - May 1995 **VA Dept. of Environmental Quality** **Richmond, VA**

Senior Environmental Specialist

- Reviewed highway projects for impacts to water quality and wetlands.
- Developed and issued Virginia Water Protection Permits.
- Developed, maintained and used databases in FoxPro to track projects.

Education

International Institute of Learning **Live Online Training**

Orange Belt, Microsoft Project

Blue Belt in Microsoft Project – coursework completed

Business Analysis Fundamentals

Facilitation Skills for Business Analysts

1983 - 1985 **Duke University** **Durham, NC**

Master of Environmental Management

1978 - 1982 **The College of William & Mary** **Williamsburg, VA**

Bachelor of Science, Biology

Professional Organizations

Jan 2009 – Present **The Data Warehouse Institute (TDWI), Member**

Oct 2006 – Present **National Conservation Leadership Institute, Leadership Fellow**

Dec 2003 – Present **Project Management Institute, Project Management Professional**

Nadine M. Hoffman

nadine.hoffman@vita.virginia.gov
Office (804) 786-0543

PROFILE

Accomplished data management leader with a specialization in the finance and healthcare industries. Proven success in developing and implementing data management strategies and toolsets. A skilled facilitator, analyst, team leader and liaison between business and technology professionals.

Areas of Expertise

Business Requirements Analysis
Data Modeling & Architecture
Data Access & Integration
Data Warehousing
Data Quality and Stewardship
Metadata Management
Vendor Relationship Management
Team and Project Management

PROFESSIONAL EXPERIENCE

Commonwealth of Virginia July 2008 - Present
Data Manager – Virginia Information Technologies Agency

- Leading the implementation an enterprise Data Management Program for the Commonwealth of Virginia. This effort includes facilitating a cross-functional group of state agency resources (business and IT) to define and implement an enterprise data strategy and governance model.
- Defining the data modeling and data administration policies, procedures and infrastructure to support the development and management of data standards.
- Working with the business to develop data sharing agreements across state agencies.
- Managing an enterprise data management staff providing support to multiple enterprise projects.

Community Volunteer July 2003 – July 2008
I spent five years utilizing my skills to help my community elementary school and church. The positions I held strengthened my analytical, communication and leadership skills.

- President-Elect and President of the Mary Munford Elementary PTA (2 years)
- PTA Volunteer Coordinator, Mary Munford Elementary (1 year)
- Mentor/Tutor - Micah Initiative, Carver Elementary (6 months)
- Catechist – St. Bridget Church, 4th grade teacher (6 years)

Capital One Financial Richmond, Virginia
Senior Data Modeler/Analyst, Enterprise Information Management June 2001 – July 2003

Data Modeling

- Managed, published and developed training for data naming and modeling standards.
- Prepared logical and physical data models for various IT projects and created source to target data mappings.
- Conducted data modeling reviews for compliance with standards.

Metadata Management

- Lead efforts to define a metadata management strategy for Capital One.
- Lead the development and deployment of the enterprise metadata solution.

Capital One Financial (continued)

- Facilitated monthly Data Steward meetings, oversaw the resolution of metadata issues, and developed and conducted end user training sessions.
- Operational leader for metadata management application. Responsibilities included production support, testing of application enhancements/software releases and vendor management.
- Assisted in defining a Data Quality Framework that integrated the data management discipline within the business operations and line of business requirements process.

T. Rowe Price Associates — Baltimore, Maryland
Data Modeler, Information Technology Department — August 1995 – May 2001

- Supported the implementation and deployment of a reporting and analysis tool (Business Objects). Created the data schema and canned reports within Business Objects and verified the operational data loads.
- Developed dimensional data models and source to target data mappings for the retail data warehouse. Selected and implemented an extraction, transformation and loading tool (ETL) as part of project.
- Worked with a team of data modelers to develop an entity/attribute level Enterprise Data Model.
- Provided daily application support for T. Rowe Price Stable Asset Management in Richmond, VA.
- Defined current application environment and documented data structures in support of transitioning the Richmond office applications to the home office environment in Baltimore, MD.

KPMG Peat Marwick — Richmond, Virginia
Senior Consultant — January 1995 – August 1995

- Managed a software selection project for a loan servicing and accounting system. Project tasks included developing and coordinating the RFP process, selecting the vendor of choice, proving the decision was cost beneficial and providing assistance in the negotiation of a contract for implementation.
- Managed a project to identify information reporting requirements for the loan servicing department at the Virginia Housing Development Authority (VHDA).
- Developed an information system data model for VHDA. Defined data entities, attributes and business rules.

Ryland Mortgage Company — Columbia, Maryland
Systems Analyst, Data Resource Management Group — September 1992 – January 1995

- Key resource in developing an operational data warehouse for Ryland Mortgage. Responsibilities included functional analysis, technical design, development and implementation of a rule-based data warehouse.
- Managed a data conversion project to load five years of historical loan data into the warehouse.
- Utilized the Jackson Modeling technique to create a life cycle model detailing the processes of loan origination and loan servicing.
- Developed a corporate level metadata dictionary. Facilitated a series of meetings with the business leaders to define the critical data elements in a loan's life cycle.

Blue Cross Blue Shield of Maryland Owings Mills, Maryland
Systems Engineer, Information Technology Department June 1989 – September 1992

- Supervised the design, development and implementation of a $1.5 million client-server Executive Information System (EIS) for the senior management group at Blue Cross Blue Shield of Maryland (BCBSM). Performed functional analyses to determine the data requirements. Developed data flow and entity relationship diagrams with the Bachman Business Analyst CASE tool. Developed and delivered training to end user community.
- Developed and implemented an MIS for a subsidiary of BCBSM.
- Designed, developed and implemented a statistical reporting system used to develop BCBSM's Pharmacy Billing Process.
- Developed and executed historical data conversion programs for the implementation of a DB2 based claims processing system.

EDUCATION

Loyola College in Maryland, Sellinger School of Business and Management

Masters of Business Administration, Management Information Systems, May 1994 Summa cum laude
Bachelor of Business Administration in Management May 1989 Magna cum laude

Software Experience and Training:

ERwin, Excelerator, ER/Studio, Oracle, DB2, Teradata, MS Access, Unix, Business Objects, Information Advantage, Ab Initio products, ETI ETL tool, SQL, Microsoft Office products, Relational and Dimensional data modeling techniques.

Peter W. Coleman

Virginia Department of Education (2004 – present)

- Educational Project Coordinator responsible for managing educational projects that collect, analyze and report accurate, timely and comparable information of various state and federal programs.
- Project Manager for the state longitudinal data warehouse, Educational Information Management System (EIMS) and four projects utilizing the Schools Interoperability Framework (SIF) standards – Student Locator Framework (SLF) for student identifiers; eTranscripts; Student Record Exchange (SRE) and Student Schedule Collection (SSC)
- State certified project manager.

Sweet Briar College (2000 – 2003)

- Project Manager of a campus-wide administrative, financial, development, financial aid and student system.

Halifax Corporation (1998– 2000)

- Business Development Manager responsible for analyzing and developing new lines of business.
- Director of Project Management responsible for the P&L of the new millennium line of business.

Professional Activities

- Member, Schools Interoperability Framework Implementation Task Force
- Member of Business Network International

Education

- Kean University, Union, New Jersey
  - B.A Psychology (1981)
- J Sargeant Community College, Richmond, Virginia
  - Certificate in Telecommunications (1992)

Susan M. Williams

Virginia Department of Education (1999 – present)

- Manager of Educational Applications, Office of Educational Information Management
  Responsibilities include collecting appropriate data for ESEA Accountability, longitudinal data reporting, EDEN reporting, managing the state's assessment data, providing customer service, training and outreach to 132 school divisions, and providing technical assistance to other offices within the Department.

- Previous positions with the Virginia Department of Education included specialist positions in both Data Administration and the Office of Career and Technical Education.

Booz Allen and Hamilton (1997 – 1999)

- Senior consultant and chairperson of the Training and Systems Testing department of the Anti-Drug Network
  Responsibilities included systems testing, presentations to government clients, curriculum development including user's manuals and hands-on-training for custom-designed software applications.

Morongo Unified School District (1993-1997)

- High school mathematics teacher at Twentynine Palms High School

Community Activities

- Design databases for student, church and civic organizations
- Volunteer technical assistance and time to local schools

Recognition

- 2007 Nominee for the Governor's Teamwork Award
- 2005 Virginia Educational Technology Leadership Award recipient
- 2-time recipient of Booz Allen and Hamilton's outstanding employee performance award

Education

- Marietta College, Marietta, Ohio (1993)
  - B.S., Mathematics
  - Bernard P. McDonough Leadership Certificate
- Virginia Supervisory Institute (2005)
- Commonwealth Management Institute (2007)

Raymond O. Woten

Virginia Department of Education (Jan 2005 – present)
Systems Development Manager

- Responsible for the development and support of all Educational Information Management systems, provide management and leadership to development team, and insure adherence to the department's software development methodology. Also responsible for DOE database administration, data modeling, and database design.

Professional Background

- Over thirty years experience in manufacturing and Information System working on a wide variety of applications, filling many different roles within the software development process. These included, Programmer, Database Administration, Project Management, Staff Management, and Director, with experience working with both software and hardware development as well as networking concepts. Managed system development under Sigma Quality guidelines in addition to ISO9000 certification.

Certification

- Private Pilot's License with Instrument rating

Education

- Central Virginia Community College
  - AS Computer Science
  - AS Business Management

WENDY B. KANG

(b)(6)

Phone: 804/819-4781
Email: wkang@vccs.edu

SUMMARY OF QUALIFICATIONS

- Ability to adapt and effectively respond to a variety of challenging environments, including working in third world countries as a Peace Corps volunteer and working in the US with individuals with histories of substance abuse, criminal activity, homelessness, HIV/AIDS, and/or mental health issues
- Extensive state level policy analysis experience in a range of areas, including workforce development, secondary and postsecondary education, social services, and health services

EXPERIENCE

Virginia Community College System (VCCS) December 2004-
Director Workforce Development Services Research (formerly Coordinator of Program Assessment and Grant Writing) present

- Develop outcome performance measures for workforce development programs, including Middle College, Postsecondary Perkins, Tech Prep, Career Coaches, and Apprenticeship Related Instruction
- Design, maintain, and manage processes to gather system-wide performance data from local community colleges to complete annual legislative and return on investment reports
- Analyze fiscal and outcome performance data to provide insight into program effectiveness
- Develop and monitor program performance of workforce programs, through annual reviews and evaluations

Joint Legislative Audit and Review Commission (JLARC) June 2001-
Senior Legislative/Program Analyst December 2004

- Evaluate Virginia state agencies and programs for efficiency, effectiveness, and adherence to legislative mandate; recent reports include reviews of Medicaid transportation and pharmacy services, workforce training, child abuse and neglect, and public education in Virginia to determine program effectiveness and to develop cost savings initiatives
- Manage projects through continuous interaction with team members, State and local agency directors, and executive branch members to ensure that projects are completed in a timely and effective manner
- Develop Access database systems to manage projects; a recent database developed for school performance contained demographic profiles for over 1100 public schools in Virginia
- Evaluation and research responsibilities include: developing agency surveys, performing comprehensive statistical analysis of fiscal and other data, conducting interviews with stakeholders, evaluating the best practices of other states, and writing comprehensive reports for members of the General Assembly of Virginia
- Other responsibilities include: conducting training in statistical analysis software (SAS) and Access for staff; participating in prospective employee interviews; coordinating the agency's annual Commonwealth of Virginia Campaign (CVC) fund drive

Triangle Residential Options for Substance Abuse (TROSA) January 2000-June 2001
Director of Internal/Development Operations

- Developed a five-year strategic growth plan to expand program from 300 to 600 participants
- Managed a staff of 14 people in the organization's Donations Department, which generated

TROSA/Director of Internal Operations~ continued from previous page

donations of over $2 million per year

- Supervised over 20 community volunteers providing services to the organization and coordinated community service activities for program participants
- Managed the acquisition of commercial properties to expand nonprofit enterprise operations
- Managed the acquisition of residential facilities to increase the availability of transitional housing through assistance of a leading bank's Community Reinvestment Act program
- Mentored a Master's of Public Health group project at the University of North Carolina that developed a strategic plan to improve a drug-infested neighborhood in Durham
- Researched, wrote, and managed public and private grants including Social Services and Community Development Block grants, and a Ford Foundation grant
- Designed, implemented, and managed MS Access database systems to track over 4,000 company donors, 1,500 program participants, and 100 volunteers
- Analyzed, organized, and presented program statistical data on over 1,500 program participants
- Facilitated the visitation of and presented program data to a US Senator, who later developed a federal proposal to provide funding for therapeutic communities based on the TROSA model

Rural Community Assistance Corporation; Hilo, Hawaii May 1999-August 1999

Community Development Training Coordinator/National Congress for Community Economic Development Intern

- Assisted in hiring trainers, researching training materials, and raising funds for a community development training institute provided for over 350 participants in Honolulu, Hawaii
- Acted as a liaison between the training institute and major corporate sponsors, including a Hawaiian bank through their Community Reinvestment Act program
- Developed a financial needs resource map for the island of Moloka'i--a federally designated Enterprise Community
- Assisted in identifying and developing technical assistance for community housing development organizations (CHDO's) operating in Hawaii

~Note: Break in time period due to enrollment in master's of public policy program at Duke 1998-2000 and temporarily working as a nanny upon completion of volunteer service in Africa~

American Refugee Committee; Guinea, West Africa June 1997-November 1997

A nongovernmental organization that provides economic development to refugees in 15 countries

Small Business Development Coordinator/Assistant Manager (Hired through Crisis Corps: 6-month volunteer commitment)

- Acted as assistant manager for local office--responsibilities included: preparing financial statements; organizing daily staff meetings; and collaborating with other nongovernmental organizations, such as the United Nations High Commission for Refugees, the International Refugee Committee, and the International Red Cross
- Trained and supervised 20 loan agents and coordinated the training of over 1500 clients in small business development for a micro-enterprise loan program
- Designed a 20-page training manual to teach basic accounting, management, marketing, and organizational skills and staff motivation to loan agents
- Assessed loan agent needs and developed weekly training seminars on profit/loss analysis, development of a business plan, illiterate client training, and techniques to screen loan applicants without traditional credit sources

AFVP French and ACT Belgium Organizations; Guinea, W. Africa August 1996 & October 1997
Training Consultant for Nongovernmental Organizations During Peace Corps/Crisis Corps Service

- Planned, organized, and conducted three to five day workshops, in French, for 25 small business owners at the request of nongovernmental organizations operating in the area
- Topics included accounting, marketing, management, and staff motivation

Peace Corps; Guinea, W. Africa June 1995-June 1997
Math Teacher and Community Development Organizer

- Taught eighth and eleventh grade math, in French, with class sizes ranging from 20-65 students
- Planned and organized a Woman's Day conference that included panel speakers and women's awareness contests for over 400 participants
- Collaborated with local officials to organize an AIDS awareness day for over 900 participants

EDUCATION

Duke University; Durham, NC 1998-2000
Master's of Public Policy, Master's Thesis: Organizational Analysis of TROSA: A Social Enterprise
Coursework: Nonprofit management, nonprofit law, economics, statistics, policy analysis

Bentley College; Waltham, MA 1991-1995
BS Actuarial Sciences/Business Administration with an environmental concentration; cum laude
Coursework: Marketing, management, economics, finance, risk analysis, organizational management, environmental law, environmental modeling, and environment community resource mapping

SKILLS

- Extensive knowledge of Microsoft Access, database development, SAS (statistical analysis software), Excel, PowerPoint, Word, and PeopleSoft

AARON D. SCHROEDER, PH.D.

Institute for Policy & Governance, Virginia Tech
Center for Public Administration & Policy, Virginia Tech
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aaron.schroeder@vt.edu

EDUCATION

Virginia Tech University	Public Policy & Administration	Ph.D., 2001
James Madison University	Public Administration	M.P.A., 1993
University of Delaware	Psychology	B.S., 1991

AREAS OF SPECIALIZATION

Evaluation
- Research Design
- Methods of Data Collection
- Quantitative and Qualitative Data Analysis

Information Technology
- Information Policy
- Data Management and Integration
- Web-Enabled Public Services

RESEARCH AND LEADERSHIP

Virginia Tech Institute for Policy & Governance (VTIPG)

2007-present **Research Scientist**

Virginia Tech Transportation Institute (VTTI)

2004-2006 **Director**, Center for Technology Deployment
2002-2004 **Leader**, Information Applications Group
1998-2002 **Senior Research Associate**

TEACHING

Virginia Tech Center for Public Administration and Policy (CPAP)

2007-present **Visiting Assistant Professor**
- Research Methods
- Public Policy and Program Evaluation
- Applied Governmental Technologies

2002-2004 **Assistant Research Professor** (joint appointment with VTTI)
- Research Methods and Statistics
- Internet, Database and Administrative Technologies

1994-2001 **Adjunct Instructor**
- Statistical Methods
- Computer Business Applications
- Internet and Database Technologies

- Public Budgeting
- Policy Network Analysis

Elon College (now University) Political Science and Public Administration Department
1995-1996 **Adjunct Instructor**

- Public Administration
- Policy Analysis

CONSULTING

10 years private consulting in the Information Technology area. Multiple projects including **relational database development**, **web-application development**, **project management, system development**.

Evaluation of 802.11 Wireless Communications Backbone 2003 for the Florida Department of Transportation.

FUNDED RESEARCH (partial listing – data integration related)

Research Project	Years	Role	Amount	Sponsor(s)
Building Child and Family Policy Research Data Capacity for the Commonwealth of Virginia: An Integrated Model	2008-2011	PI	$650,000	Administration for Children & Families (HHS)
511 Virginia - The Nation's First Statewide Traveler Information System	2000-2003	PI	$1,207,000	Virginia Department of Transportation
Bedford Ride - Multi-Agency Integrated Data System for Medical Transportation	2000-2001	PI	$86,000	Bedford County, VA
ACCESS to Rides – Multi-Agency Integrated Data System Facilitating Welfare-To-Work	1998-2002	PI	$70,000	Kellogg Foundation, Research and Special Projects Admin (USDOT)
Travel Shenandoah – An Advanced Traveler Information System for Virginia's Shenandoah Valley.	1998-2000	PI	$1,400,000	Virginia Department of Transportation, Shenandoah Telecommunications

PUBLICATIONS

Book Chapters

Schroeder, A.D., Wamsley, G.L., and Ward, R. (2000). The Evolution of Emergency Management in America: From a Painful Past to a Promising but Uncertain Future, in Handbook of Emergency

Management. Ed. Ali Farazmand. Marcel-Dekker: New York.

Journal Publications (refereed)

Schroeder, A.D., Jarrott, S.E. (2007). Saving Dollar s While Making Sense: An Analysis Comparing Operational Costs of Intergenerational Shared Site Facilities. Generations United: Washington, DC.

Ward, R.., Wamsley, G.L., Schroeder, A.D., Robins, D.B. (2000). Network Organizational Development in the Public Sector. Journal of the American Society for Information Science, vol. 51, no. 11.

Wamsley, G.L., Schroeder, A.D. and Lane, L.M. (1996). To Politicize is Not to Control. The American Review of Public Administration, September, pp. 45-60.

Wamsley, G.L. and Schroeder, A.D. (1996). Escalating in a Quagmire: The Changing Dynamics of the Emergency Management Policy Subsystem. Public Administration Review, May/June, pp. 235-244.

SOFTWARE (PUBLISHED COMMERCIALLY)

Schroeder, A.D. (1999). Travel Information Data Clearinghouse and Management System. Copyright: Virginia Polytechnic Institute and State University

Schroeder, A.D. and Daily, B. (1999). Web-Based Dynamic Ride Request, Assignment, and Tracking System. Copyright: Virginia Polytechnic Institute and State University

SELECTED MAJOR TECHNICAL REPORTS AND PRESENTATIONS

Schroeder, A.D. (2003) Presentation: Wireless Linear LANs for DOT Operations. Rural Advanced Traveler Information Systems Conference, Tampa Bay, FL.

Schroeder, A.D. (2003) Workshop: Wireless Technologies for DOT Operations: A Hands-On Introduction. Intelligent Transportation Systems of Virginia Annual Conference.

Schroeder, A.D. and Hales, R. (2002). Extension of 'Travel Shenandoah' North to Harrisburg, Pennsylvania: Historical Development and Lessons Learned. I-95 Corridor Coalition.

Baker, S. and Schroeder, A.D. (2002). Case Study Evaluation of the Virginia Department of Transportation's I-81 ITS Program. Virginia Department of Transportation.

Hintz, R. and Schroeder, A.D. (2001). TravelShenandoah.Com Market Definitions: A Plan to Increase Users. Virginia Department of Transportation.

Worrall, R.D. and Schroeder, A.D. (2000). Travel Virginia: A Statewide System of Public-Private Partnerships for ATIS Deployment. Research Report. Virginia Department of Transportation.

Schroeder, A.D. (2000). Information Technology and Public-Private Partnerships: Getting Services Deployed in Rural Areas. Conference Presentation, Technology in Public Administration Conference, University of LaVerne, California.

Ajay Rohatgi

Agency Outreach Lead
Enterprise Applications Division
Vita Information Technologies Agency

Summary
Mr. Rohatgi is a senior IT Management professional with more than 20 years experience in the field. He has successfully setup, staffed, and managed IT program areas and has extensive experience with concurrently leading multiple projects. He has successfully managed projects related to both support and new development. His skills include strategic planning, project management, analysis of business problems and providing solutions. In addition, he has experience in all aspects of systems development life cycle. Mr. Rohatgi has a Degree in Business and a Diploma in Information Systems. He holds PMP (Project Management Professional) and CISA (Certified Information System Auditor) certifications and is a certified Oracle database and ERP (Enterprise Resource Planning) professional.

Experience

Enterprise Applications Division (EAD), Virginia Information Technology Agency (VITA), Commonwealth of Virginia: Agency Outreach Lead
Mr. Rohatgi is serving as the Agency Outreach lead for the Enterprise Applications Division of VITA. In this role he is responsible promoting collaboration in the areas of application development. Mr. Rohatgi is accomplishing this by building and maintaining partnership relations with various state agencies and secretariats. In addition he directly leading following development projects (multiagency collaborative efforts):
Business One Stop – Allows 'one stop shopping' experience in relation to business registration; Virginia Workforce One stop – Common registration process; Online Notary and E-Notary Registration; CRM (Customer Relationship Management) solutions.

Virginia Enterprise Applications Program, Commonwealth of Virginia: Special Projects Lead:
Mr. Rohatgi was hired to assist with the program management of a multi million dollar Financial ERP system. In this role he assisted the program director by crafting project schedules that were linked and dependent on each other, and creating process and framework for tracking and reporting project progress. Subsequently Mr. Rohatgi was assigned to manage certain critical development projects that supported the Governor's initiatives. Key projects include:
Business One Stop Portal – Phase 1 (Governor's technology award), Framework to Implement Digital Signatures across multiple agencies (Governor's technology award); Stimulus.Virginia.gov & Ideas.virginia.gov

Capitalone Financial Services – Program Phoenix (Part of NorthFork Bank Integration): Program Manager
Mr. Rohatgi was hired to work as a Program / Lead Project Manager for a $ 50 Million systems and data integration program that was related to integration of NorthFork Bank (NFB) with Capital One National Association. Mr. Rohatgi established the project management structure and processes that were required to effectively track and manage the program.

He created and managed various project plans, schedules and budget spreadsheets that were needed to manage and monitor multiple projects. Mr. Rohatgi provided mentoring and guidance to project managers on the team as and when it was required. In addition, he consolidated project level status reports, risk & issues reports and other feedback from the teams and reported them at the program level.
Mr. Rohatgi maintained constant communications with other programs related to the Integration effort to track cross project dependencies. He also communicated and managed expectations of the project audit team, PPM (project and program management) compliance team and Integration PMO.

Circuit City Stores Inc. (CCITY) - PMO for EDW (Enterprise Data Warehouse): PMO Manager
Mr. Rohatgi was assigned to work with the EDW group at the Circuit City Stores Inc. in the capacity of their PMO manager. Mr. Rohatgi setup new processes and templates for capturing the status of multiple projects that were being executed as a part of the program. He then created an automated process for aggregating that information and publishing it to a management dashboard. In addition Mr. Rohatgi created the program area charter and Risk Management Plan. He was also engaged in implementing expectations of Enterprise PMO, Internal Audit and IT Review and Compliance team of CCity.

Virginia Department of Health (VDH) – Office of Information Management ; IT Manager
Mr. Rohatgi worked as an IT Program Manager at VDH. At VDH he setup and managed a new IT program area - Business Systems. The program area was responsible for managing critical production systems like Vital Records, Financial Accounting, Human Resources, Purchasing, and Time Keeping. He collaborated with senior management and business owners to establish project priorities, technical strategies and process improvements. Mr. Rohatgi was responsible for recruiting, managing and evaluating the technical teams. Key Projects at VDH include: Data Cleanup and Migration Health Care Data, Upgrade and Rewrite of Financial & Administrative and Vital Records System using Oracle and Java technologies.

Work History

Virginia Information Technologies Agency	Sep 2009- Present
CapTech Ventures, Inc.	May 2006 – Sep 2009.
Alterthought	January 2006 – April 2006
CACI Inc.	September 2000 – December 2005
Dataprofessionals Inc.	November 1998 – August 2000
Software consulting in India	June 1989 – November 1998
American Express Bank	June 1988 – May 1989

Ajay Rohatgi

Agency Outreach Lead
Enterprise Applications Division
Vita Information Technologies Agency

Skills

Certifications & Training:

- Project Management Institute (PMI) – PMP Certification
- Information Systems and Control Association (ISACA) – Certified Information Systems Auditor
- Oracle Education- Oracle Applications (Financials) Implementation master certification, Oracle 7.2 and Developer 2000
- COGNOS Reportnet and Framework Manager – COGNOS Education.

Development Methods

- Waterfall, Iterative, Prototyping

Programming languages, tools & technologies:

- Java, Adobe Flex, JBuilber, Eclipse, Oracle Development tools, Oracle Designer,
- MS office, MS Project, MS Visio, Prosight, Plainview.
- MS Dynamics (CRM – Customer Relationship Management product)

Databases:

- Oracle 7.0 – 10g , SQL server

Education

Bachelor's Degree: Commerce, Business Studies, Allahabad University, India
DIPLOMA: Computer Science and Applications, New Delhi, India

Project Narrative

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

Attachment 1:
Title: **Virginia LDS Grant Appendix C** Pages: **4** Uploaded File:
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PR/Award # R384A100037

APPENDIX C

Requirement	Status of Requirement	Outcomes With This Grant
Required data system capabilities	**The extent to which the requirement is met in the current systems**	**Outcomes that address the requirement are checked**
Student progress and outcomes over time from Pre-K through Workforce	Partially met: • Unique VDOE State Testing Identifier (STI) • Can merge individual student data with postsecondary enrollment.	✓ **Longitudinal Data Linking and Reporting System** ✓ **Data Management and Control System** ✓ **Secure Transcript Data Exchange with Higher Ed**
Data exchange within and between states	Partially met: • Existing LDS grant addresses data exchange between high schools and Higher Ed • Adoption of SIF and PESC standards will allow exchange between states • Strict state privacy laws have historically limited data sharing between agencies. VDOE and state agency partners have worked with the state Office of the Attorney General to develop a methodology to share data across agencies that meets requirements of state privacy laws.	✓ **Student-Teacher Information System** ✓ **Longitudinal Data Linking and Reporting System** ✓ **Web Reporting Portal** ✓ **Data Management and Control System** ✓ **Secure Transcript Data Exchange with Higher Ed**
Match records of teachers and students	Partially met: • Public school divisions have option of linking a teacher with his/her students' state assessment records	✓ **Student-Teacher Information System** ✓ **Longitudinal Data Linking and Reporting System** ✓ **Secure Transcript Data Exchange with Higher Ed**
Match teachers with their certification and preparation programs	Met: • Teacher Licensure database.	✓ **Student-Teacher Information System** ✓ **Longitudinal Data Linking and Reporting System** ✓ **Data Management and Control System**

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Requirement	Status of Requirement	Outcomes With This Grant
Easily generate date for continuous improvement and decision-making, including timely reporting to parents, teachers, and school leaders on the achievement of their students.	Partially met: • DOE web site contains information for parents • No capability for parents, public users, and researchers to create ad-hoc reports • EIMS Data Warehouse for teachers and school leaders	✓ **Student-Teacher Information System** ✓ **Longitudinal Data Linking and Reporting System** ✓ **Web Reporting Portal**
Ensure the quality and integrity of data	Met: • Student reporting process includes extensive edit checks, detailed verification reports, school superintendent signoff, and random audits • SCHEV has extensive edits in place for its data collections from the institutions of higher education • Current LDS Grant: "Integrating Data Quality" program	✓ **Student-Teacher Information System** ✓ **Data Management and Control System**
Meet federal reporting requirements including for State Fiscal Stabilization Fund and EDFacts	Partially met: • Currently unable to produce several of the proposed State Fiscal Stabilization Fund metrics	✓ **Student-Teacher Information System**
Required data system elements		
With respect to preschool through grade 12 education and postsecondary education:		
Unique student identifier	Met: • Each student has a unique State Testing Identifier (STI) • SCHEV creating a statewide identifier for postsecondary student	

Requirement	Status of Requirement	Outcomes With This Grant
Student-level enrollment, demographic, and program participation information	Met: • VDOE collects student-level data using the consolidated Student Record Collection • SCHEV collects student-level data for higher education	✓ **Student-Teacher Information System**
Student-level entry and exit information for Pre-K through 16	Met: • Virginia collects student-level information about student entry and exit throughout K-12 • Virginia obtains data from the national Student Clearinghouse entry and exit in postsecondary	
Communicate with higher education systems	Met: • VDOE and SCHEV communicate between data systems using secure file transfer protocols	✓ **Student-Teacher Information System** ✓ **Longitudinal Data Linking and Reporting System**
Data audit system assessing data quality, validity, and reliability	Met: • VDOE and SCHEV have data audit systems that include extensive record editing, detailed reports that must be signed off by district superintendents or higher education officials, and random audit checks.	✓ **Student-Teacher Information System** ✓ **Data Management and Control System**
With respect to preschool through grade 12 education:		
Yearly test records for section 1111(b) of the Elementary and Secondary Education Act of 1965	Met: • VDOE stores student-level records for all tests taken since 2000-2001; since 2004-2005, these data are longitudinal.	✓ **Longitudinal Data Linking and Reporting System** ✓ **Web Reporting Portal**
Information on students not tested	Met: • Students receive a test record regardless of whether they take the test or not	✓ **Student-Teacher Information System**

Requirement	Status of Requirement	Outcomes With This Grant
A teacher identifier system	Partially met: • Teachers are assigned a unique identifier at certification that links them to the courses they teach	✓ **Student-Teacher Information System**
Student-level transcript information	Not met	✓ **Student-Teacher Information System**
Student-level college readiness test scores	Met: • EIMS Data Warehouse contains SAT, AP, PSAT, and ACT test scores	✓ **Longitudinal Data Linking and Reporting System**
With respect to postsecondary education:		
Extent to which students transition successfully from secondary school to postsecondary education	Partially met: • VDOE uses National Student Clearinghouse for data on postsecondary enrollment • SCHEV collects remedial and developmental enrollment details from the institutions of higher education	✓ **Longitudinal Data Linking and Reporting System**
Other information determined necessary to address alignment and adequate preparation for success in postsecondary education	Not met	✓ **Student-Teacher Information System** ✓ **Longitudinal Data Linking and Reporting System** ✓ **Web Reporting Portal**

Project Narrative

Project Narrative - Appendix D Letters of Support

Attachment 1:
Title: **Virginia LDS Grant Appendix D** Pages: **14** Uploaded File:
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Appendix D
Virginia's Response to the Statewide Longitudinal Data Systems Request for Applications

Letters of Support

1. Letter of support from Senator Mark R. Warner
2. Letter of support from Senator Jim Webb
3. Letter of support from Virginia's Workforce Cabinet Members and Agencies
4. Letter of support from the Innovation and Entrepreneurship Investment Authority
5. Letter of support from the Council on Virginia's Future
6. Letter of support from George Mason University
7. Letter of support from Norfolk State University
8. Letter of support from James Madison University
9. Letter of support from the Schools Interoperability Framework Association
10. Letter of support from the Postsecondary Electronic Standards Council

MARK R. WARNER
VIRGINIA

COMMITTEES:
BANKING, HOUSING, AND URBAN AFFAIRS
COMMERCE, SCIENCE, AND TRANSPORTATION
BUDGET
RULES AND ADMINISTRATION

United States Senate

WASHINGTON, DC 20510–4606

October 26, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
P. O. Box 2120
Richmond, Virginia 23218-2120

Dear Dr. Wright:

I am writing to express my support for the Virginia Department of Education's (VDOE) application to the U.S. Department of Education for a State Longitudinal Data Systems grant. I understand that the goal of this grant is to develop and implement a longitudinal data system that permits the generation and use of accurate and timely data for informed decision making at all levels of the education system. I am pleased that you are working to establish a system that has the capacity to link information about individual students across time and across databases—including K-12, postsecondary, and work force—while protecting students' privacy consistent with applicable privacy protection laws.

I commend VDOE for the steps that you have already taken to build the Educational Information Management System that allows for the exchange of electronic student records and enhanced access to available data for instructional decision making by school division personnel. I support the VDOE's grant application, and look forward to working with you and other project partners in continuing the development of a longitudinal data system that will provide information to address policy issues and program performance questions across all levels of Virginia's education system.

Sincerely,

Mark R. Warner

Mark R. Warner
United States Senator

MRW/lr

JIM WEBB
VIRGINIA

COMMITTEE ON
ARMED SERVICES
COMMITTEE ON
FOREIGN RELATIONS
COMMITTEE ON
VETERANS' AFFAIRS
JOINT ECONOMIC COMMITTEE

WASHINGTON OFFICE:
WASHINGTON, DC 20510
(202) 224-4024

United States Senate

WASHINGTON, DC 20510-4605

November 3, 2009

Mr. Thomas Kelley
Assistant Secretary for Legislative and Congressional Affairs
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202

Dear Mr. Kelley:

I am writing in support of an application submitted by the Virginia Department of Education (VDOE) to the U.S. Department of Education's (DOE) Statewide Longitudinal Data System (SLDS) grant program.

It is my understanding that resources provided through the SLDS grant program would help the VDOE develop and implement a longitudinal data system that permits the generation and use of accurate and timely data at all levels of the education system. If funded, the VDOE would have the capability to implement a data system that will have the capacity to link information about individual students across time and across databases, including the K-12 Educational Information Management System, postsecondary, and work force, while protecting students' privacy in accordance with existing law. Moreover, the VDOE has indicated that this project will also focus on designing and implementing strategies to ensure that data will be used to support continuous improvements with respect to addressing important questions related to educational policy and practice in Virginia.

It appears that the Virginia Department of Education is well-positioned to meet the goals of the Statewide Longitudinal Data System grant program and the goals of the U.S. Department of Education. I ask that you give their application every fair and favorable consideration in keeping with the merits of the application and the guidelines of your program. I further ask that you keep me informed of the status of this proposal by contacting Martin Mash in my Roanoke office at 3140 Chaparral Drive, Building C, Suite 101, Roanoke, Virginia 24018. Martin can also be reached via telephone at (540) 772-4236.

With warm regards, I remain

Sincerely,

Jim Webb
United States Senator

JW: mm

COMMONWEALTH of VIRGINIA

Office of the Governor

Daniel G. LeBlanc
Senior Advisor for Workforce

October 9, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
PO Box 2120
Richmond, VA 23218

Dear Dr. Wright:

The undersigned Workforce Sub Cabinet members and workforce agencies of the Commonwealth of Virginia are pleased to support the Virginia Department of Education's (VDOE) application to the U.S. Department of Education for a three-year grant to support the development and implementation of a longitudinal data system that has the capacity to link information about individual students across time and across databases, including K-12, post-secondary, and workforce. It is our understanding that this grant will support the development of data systems for the evaluation of state administered workforce programs

If the grant is funded, we will be happy to work with VDOE and other project partners in designing and building a system that will provide information to address policy issues, as well as evaluation and program performance questions that cut across education and workforce contexts. Best wishes for a successful grant application.

Sincerely,

Daniel G. LeBlanc

DGL:dpc

Patrick Henry Building • 1111 East Broad Street • Richmond, Virginia 23219 • (804) 692-0135

Deputy Workforce Advisor

Director of Policy

Deputy Chief of Staff

Secretary of Commerce and Trade

Secretary of Education

Secretary of Finance

Secretary of Health and Human Resources

Secretary of Public Safety

Secretary of Administration

Special Assistant for Policy

Chancellor
Virginia Community College System

Executive Director
State Council of Higher Education for Virginia

Commissioner
Department for the Aging

Commissioner
Department for the Blind and Vision Impaired

Director
Department of Business Assistance

Superintendent
Department of Correctional Education

Director
Department of Juvenile Justice

Commissioner
Department of Labor and Industry

Commissioner
Department of Rehabilitative Services

Commissioner
Department of Social Services

Vice Chancellor of Workforce Development Services
Virginia Community College System

Commissioner
Virginia Employment Commission

IEIA

Innovation and Entrepreneurship
Investment Authority
(formally known as Innovative Technology Authority)

October 26, 2009

Ms. Bethann Canada
Director of Information Management
Virginia Department of Education
101 N. 14th Street
James Monroe Building
Richmond, VA 23219

Dear Ms. Canada:

On behalf of the Innovation and Entrepreneurship Investment Authority (IEIA), I am pleased to offer our support and commitment to your Longitudinal Database System (LDS) project.

IEIA is a Commonwealth Authority, chartered to accelerate technology based innovation and new company formation for the Commonwealth of Virginia. Our mission cannot be accomplished if high quality graduates are not available to support the growth of nascent technology companies. Continued development and expansion of the LDS project is vital to our collective ability to understand student development and options for improving the education of Virginia's K-12 students. We will commit sufficient time, space and resources to the project to help you achieve your objectives across the following areas:

1. **Technology Roadmap and Assessment**

IEIA will leverage its technology assessment and road-mapping capabilities to help VDOE assess the technical tools and components to ensure they are state-of-the art, fully meet VDOE's requirements and can be integrated and supported on a long-term basis.

2. **Conduct Stakeholder Review and Participation**

IEIA will initiate and host a number of workshops, meetings and related activities across the Commonwealth involving a wide range of stakeholders in the LDS. The purpose of these meetings is to communicate future direction, gather stakeholder input, understand public requirements and support the future design of the LDS.

2214 Rock Hill Road
Suite 600
Herndon, Virginia 20170
703 689 3000

3. Support for Increased Data Access and Use.
In accordance with the model the federal government used with "Apps for America," IEIA recommends that it sponsor and run a competition for developers and researchers across the Commonwealth of Virginia by making LDS data available and ascertaining what additional value they can deliver. In addition, data from the LDS will be analyzed for potential integration with other state sources of data to yield a new series of valuable applications for citizens of the Commonwealth.

I assure you of our full support and commitment to assist you in meeting your mission objectives, and we look forward to working with you in the next phase of the vital LDS program.

Sincerely,

Pete Jobse
On behalf of the Innovation and Entrepreneurship Investment Authority

COUNCIL ON VIRGINIA'S FUTURE

1001 E. BROAD ST., SUITE 430
RICHMOND, VA 23219
(O) 804-371-2346 (F) 804-371-2347

November 24, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
P. O. Box 2120
Richmond, Virginia 23218-2120

Dear Dr. Wright:

As you know, the Council on Virginia's Future, which is chaired by Governor Kaine and includes senior legislative, government, and citizen leaders, was created to forge a roadmap for Virginia's future and a system of government clearly focused on – and accountable for – critical outcomes for Virginians. The Council considers the educational attainment of its citizens to be the bedrock of the Commonwealth's future economic prosperity and well-being, and has been working closely with education leaders to help Virginia maintain and enhance its highly-regarded system of education. We believe strongly that improvement efforts must be based on sound data and proven results.

I am therefore delighted to support the Virginia Department of Education's (VDOE) application to the U.S. Department of Education for a State Longitudinal Data Systems grant. We understand that the goal of this grant is to develop and implement a longitudinal data system that permits the generation and use of accurate and timely data for informed decision-making at all levels of the education system. I am pleased that you are working to establish a system that has the capacity to link information about individual students across time and across databases—including K-12, postsecondary, and work force—while protecting students' privacy consistent with applicable privacy protection laws.

I commend VDOE for the steps that you have already taken to build the Educational Information Management System that allows enhanced access to data for instructional decision-making by school division personnel. If the grant is funded, I will be happy to work with VDOE and other project partners in continuing the development of a longitudinal data system that will provide information to address policy issues and program performance questions across all levels of Virginia's education system, as well as in work force and economic development contexts.

Best wishes for a successful grant application!

Sincerely,

Jane N. Kusiak

Jane N. Kusiak
Executive Director

To Whom It May Concern:

It is my pleasure to firmly and emphatically support the Virginia Department of Education proposal submission for a longitudinal data systems grant from the US Department of Education. On behalf of George Mason University, our more than 32,000 students and the hundreds of thousands served by our educational partners throughout the pk-16 system, I can confirm that we have every intention of participating in a demonstration project to adapt software systems in order to consume electronic high school transcripts as data in PESC format.

One of the largest obstacles in the admissions process is the cumbersome structure of requesting transcripts from high schools and having them matched up with applications. This presents a huge burden on guidance counselors, who already have very limited time. As a result, this issue disproportionately impacts the students with the least experience in the college process - those who are first generation college bound, generally from the lowest socio-economic status - as something as routine as a missed deadline or a misplaced transcript can entirely derail their plans and motivation for college. A seamless system would eliminate such concerns, free up guidance counselor, and result in significant long term savings for school districts in printing, postage, and staff time.

Once full integration is achieved, including loading details of high school transcripts into university information systems, there is great additional potential in the ability to track student performance and provide feedback to secondary school districts, state departments of education, and the U.S. Department of Education on student performance in specific academic areas. The number of students at particular levels of math in high school, for instance, can be compared with the number of those students requiring remediation or, conversely, waiving out of lower level requirements. In this way curriculum development can best be guided to match college's expectations, and without such data the work is left to, at best, anecdotal information.

There are very few initiatives in education that can so clearly create massive savings at every level of the educational system while simultaneously enhancing our ability to understand the best paths to student success. I urge you to support the Virginia Department of Education in their endeavor.

Sincerely,

Andrew Flagel, PhD
Dean of Admissions and Associate Vice President for Enrollment
Executive Director, Washington Scholars Program
Director, Bachelor of Applied Sciences

NORFOLK STATE UNIVERSITY

Institutional Research
700 Park Avenue, Suite 480, Norfolk, Virginia 23504
Tel: (757) 823-8679 Fax: (757) 823-8686
Email: InstitutionalResearch@nsu.edu
Web: www.nsu.edu/ir

Memorandum

To: Bethann Canada, Virginia Department of Education

From: James Walke, Institutional Research, Norfolk State University

Date: October 29, 2009

Re: High School Transcript Data Demonstration Project

Bethann,

I write to confirm Norfolk State University's interest in DOE's high school transcript demonstration project.

The electronic transfer of high school transcript data would improve NSU's administrative efficiency by substantially reducing the person hours currently devoted to keying high school transcript data into the University's student information system.

The University believes the electronic transfer of high school data will translate into greater student success. The University is fostering partnerships with our surrounding school systems, in particular, Norfolk Public Schools. An interest in mapping collegiate academic performance to secondary performance, at the level of secondary course discipline, has emerged from this work. An electronic transfer of high school transcript data would facilitate such mapping. We believe this mapping will translate into student success by improving our ability to predict those students in need of additional academic support and to make these predictions earlier in the students' NSU tenures.

We are grateful for the invitation and eager to learn more about the project.

November 20, 2009

Bethann Canada
Director of Educational Information Management
Virginia Department of Education
Post Office Box 2120
Richmond, VA 23218

Hi Bethann,

The James Madison University Office of Admissions and Information Technology are excited to learn of your proposed grant to support the loading of electronic high school transcripts. During our pilot project a few years back we learned a great deal about data standards and loading transcript data elements into our PeopleSoft Student Administration system. I'm happy to report that we've modified our system in preparation of loading transcript data and are well positioned for the next phase of the project.

Truly electronic high school transcripts where data elements are transferred from the secondary schools to higher education will revolutionize the application process. We'll be positioned to better manage our data, be less reliant on the United States Postal Service, and improve our environmental sustainability by eliminating the paper waste generated with our current paper-based process. Our office receives 99.3% of our application for admission online where data elements are loaded directly into our PeopleSoft system. The majority of SAT and Advanced Placement test results from the College Board are also submitted and loaded electronically into this same database.

The National Center for Education Statistics has compiled a course classification system called School Codes for Exchange of Data. The JMU Office of Admissions adopted these standard course codes and will be mapping pilot high school courses to the SCED codes during the current application cycle. Our current pilot of manually keying course data of specific schools within one school district will serve as a business case for evaluating course data for consistency. This pilot will also serve as a "dry run" for the day when course data is loaded through similar processes to application and test data files.

We look forward to working with you and your colleagues in the Virginia Department of Education on this grant submission and the subsequent work that follows.

Sincerely,

Joe Manning

Joe Manning
Associate Director of Admissions

11.2.08

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
P. O. Box 2120
Richmond, Virginia 23218-2120

Dear Dr. Wright:

I am delighted to support the Virginia Department of Education's (VDOE) application to the U.S. Department of Education for a State Longitudinal Data Systems grant. We understand that the goal of this grant is to successfully develop and implement a longitudinal data system that permits the generation and use of accurate and timely data for informed decision-making at all levels of the education system. The SIF Association, since its inception, has been focused on allowing the identification, management, movement and utilization of data at all levels of the educational "pipeline". This proposal exemplifies that focus and makes real the possibilities that can occur by utilizing community developed, open technical data standards such as developed by the SIF Association community.

Our community is pleased that you are working to establish a system that has the capacity to link information about individual students across time and across databases--including K-12, postsecondary, and work force--while protecting students' privacy consistent with applicable privacy protection laws.

I commend VDOE for the steps that you have already taken to build the Educational Information Management System that allows for electronic student records exchange using the SIF standard and enhanced access to available data for instructional decision-making by school division personnel, as well as your agency's Web-based data collection and reporting system for school divisions. If the grant is funded, I will be happy to work with VDOE and other project partners in continuing the development of a longitudinal data system that will provide information to address policy issues and program performance questions across all levels of Virginia's education system, as well as in work force and economic development contexts.

Best wishes for a successful grant application!

Sincerely,

Larry L. Fruth II, PhD
Executive Director
Schools Interoperability Framework Association

1090 Vermont NW 6th Floor *Washington, DC 20005* *(202) 789-4460*

October 30, 2009

Dr. Patricia I. Wright
Superintendent of Public Instruction
Virginia Department of Education
P. O. Box 2120
Richmond, Virginia 23218-2120

Dear Dr. Wright:

I am delighted to support the Virginia Department of Education's (VDOE) application to the U.S. Department of Education for a State Longitudinal Data Systems grant. We understand that the goal of this grant is to develop and implement a longitudinal data system that permits the generation and use of accurate and timely data for informed decision-making at all levels of the education system. I am pleased that you are working to establish a system that has the capacity to link information about individual students across time and across databases--including K-12, postsecondary, and work force--while protecting students' privacy consistent with applicable privacy protection laws.

I commend VDOE for the steps that you have already taken to build the Educational Information Management System that allows for electronic student records exchange using the SIF standard and enhanced access to available data for instructional decision-making by school division personnel, as well as your agency's Web-based data collection and reporting system for school divisions. If the grant is funded, I will be happy to work with VDOE and other project partners in continuing the development of a longitudinal data system that will provide information to address policy issues and program performance questions across all levels of Virginia's education system, as well as in work force and economic development contexts.

Best wishes for a successful grant application and I look forward to working with VDOE in the future!

Best regards,

Michael D. Sessa
Executive Director
PESC

Budget Narrative

Budget Narrative - Budget Justification

Attachment 1:
Title: **Virginia LDS Budget Narrative** Pages: **14** Uploaded File:
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BUDGET NARRATIVE

(a) INTRODUCTION

Summary Project Budget

Virginia is requesting a total of $17,692,564 over three project years to complete the five outcomes under the LDS project, as noted in the table below (see Form ED 524 Section C for a spreadsheet with full detail)..

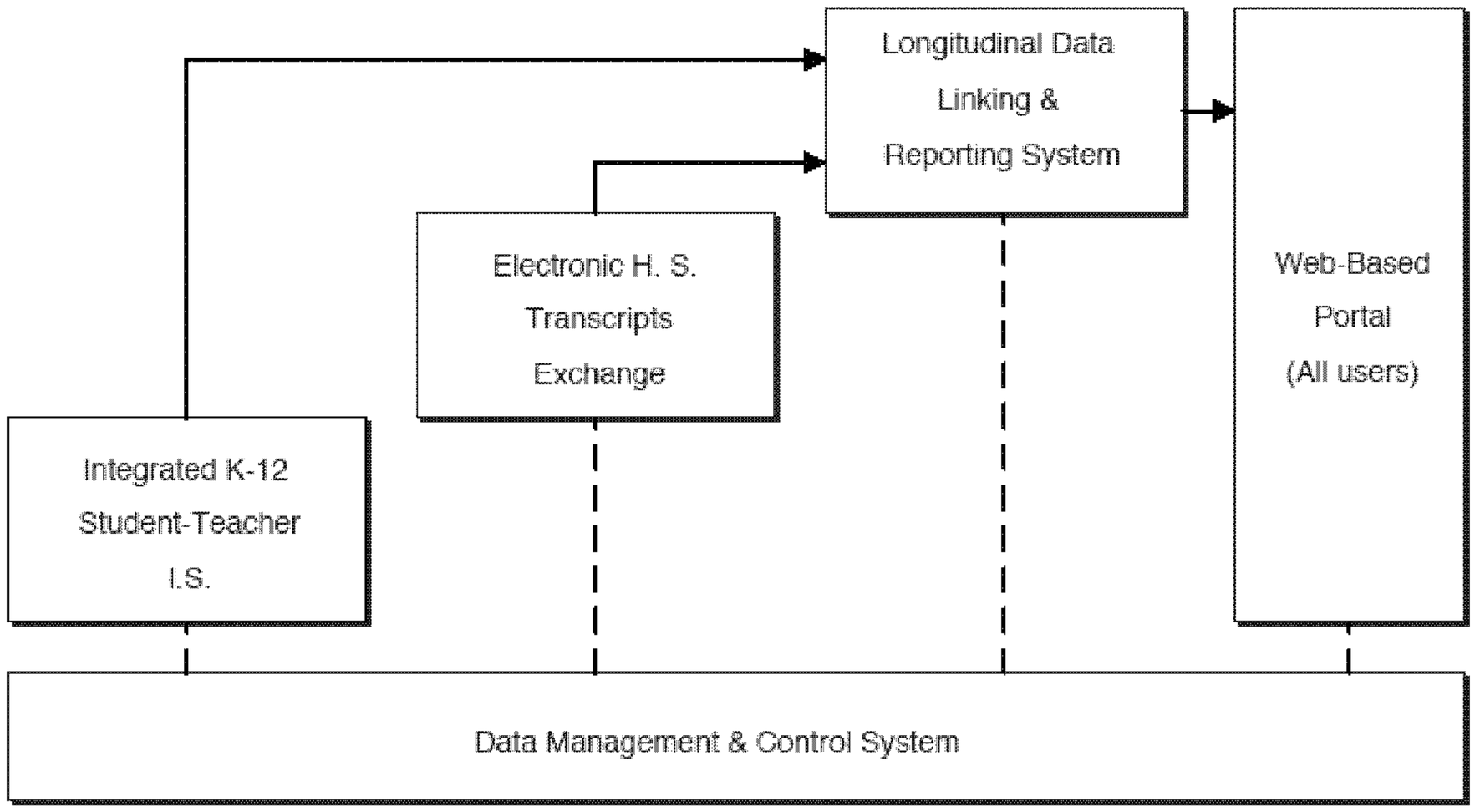
LDS PROJECT (COMBINED OUTCOMES) BUDGET					
	Category	**Year 1**	**Year 2**	**Year 3**	**3-Year Total***
1	**Integrated K-12 Student-Teacher Information System**	$3,544,879	$1,666,677	$1,079,754	**$6,291,311**
2	**Longitudinal Data Linking and Reporting System**	$1,913,969	$3,513,000	$1,345,193	**$6,772,162**
3	**Web-based Portal to Access Education and Workforce Data**	$530,450	$389,821	$221,199	**$1,141,469**
4	**Data Management and Control System**	$403,030	$382,114	$260,578	**$1,045,722**
5	**Electronic H.S. Transcripts Exchange**	$1,170,239	$1,205,165	$66,496	**$2,441,901**
	Total Costs (All Outcomes)	***$7,562,567***	***$7,156,778***	***$2,973,220***	***$17,692,564***

* Totals may not add due to rounding

A separate budget narrative has been given for each outcome. However, to avoid repetition, general considerations and items that are applicable to all of the outcomes are addressed below. Following the descriptions of the individual outcome budgets, a section on post-project sustainability concludes the budget narrative.

General Information

Each of the outcomes has been designed as a separate effort to meet or enhance a combination of the project requirements. However, as shown in the following diagram, the outcomes are also interconnected in ways that make the larger whole – Virginia's proposed longitudinal data system -- greater than the sum of the individual results. And, although each outcome is distinct, as noted in the project narrative and individual outcome budget narratives, the outcomes are also connected at the work level – reports developed for one outcome may be dependent upon data standardization efforts in a second outcome, and be made web-accessible in a third.



The budget has been prepared under the following assumptions:

- Each of the outcomes will be funded as requested. This is especially important for the DOE Program Manager and the State Lead Project Manager positions, as their personnel and fringe benefit costs have been distributed (on a weighted basis) across each of the five outcomes, and also for the Independent Verification and Validation efforts, which have likewise been pro-rated.
- Partner agencies, partner institutions, and participating LEAs will be able to meet DOE's proposed schedule. Although preliminary discussions have been held with a number of these organizations, if actual work arrangements were to take longer than expected this would impact the budget.
- The proposed budget will be reviewed as part of the project planning phase, and adjustments made as necessary to appropriately allocate costs between line-items, across project years, and among outcomes.

Budget Category Notes Applicable to All of the Outcomes

The following considerations apply to each one of the five outcomes:

Personnel

Personnel costs represent only those classified, salaried employees of the Virginia DOE who will be assigned to the project. Non-salaried personnel (consultants/contractors) have been listed under "Contractual." Any non-DOE classified, salaried employees (i.e., partner-agency personnel assigned to the project) have likewise been listed under "Contractual" – since DOE would obtain their services under a Memorandum of Understanding (MOU) or similar agreement between DOE and the partner agency. For all personnel a 2% cost-of-living adjustment (COLA) has been applied in each of the second and third project years.

Fringe Benefits
All Personnel costs will have associated Fringe Benefit costs. Virginia's current fringe benefit rates are listed below:

VIRGINIA FRINGE BENEFITS TABLE	
Benefit Category	**Rate*/Amount**
VRS Retirement Contributions	11.26%
Social Security (Capped at $106,800 for CY 2009).	6.20%
Medicare	1.45%
Group Life	0.79%
Annual Health Insurance Premiums (Assumes "Family" coverage)	$11,688
Retiree Health Insurance Credit Premium	1.00%
VSDP & Long-Term Disability Insurance	1.00%
Deferred Compensation Match Payments	$480 maximum/year

** Rates are as a percentage of salary, amounts are pro-rated as a percentage of FTE*

The rates have been applied with the following assumptions:

- The rates will stay the same for all three project years (except that a 2% cost-of-living-adjustment has been added to medical coverage in the second and third project years, in recognition of recent cost trends).
- All personnel will opt for "family" medical coverage (as opposed to "single" or "employee-plus-one").
- All personnel will qualify for the full deferred compensation cash match.

Travel
Unless otherwise controlled by Federal grant requirements, LDS project travel-related expenses will be governed by the applicable *State Travel Regulations* (see *http://www.doa.virginia.gov/Admin_Services/CAPP/CAPP_Topics/20335.pdf*).

Equipment
This category includes only hardware and software purchased for ownership by DOE or an individual LDS partner agency. Through its Virginia Information Technologies Agency (VITA), the Commonwealth has entered into a partnership with Northrop Grumman to provide statewide IT support on a shared-service basis – so many equipment-related items have instead been listed under "contractual," as they would be purchased as a service.

Supplies
DOE is not requesting any funding for supplies, having estimated that the need will be minimal. This is based on the assumption that training materials – a significant item – will either be delivered electronically, or will be included in one or more of the contractual expenses.

Contractual
This category consists generally of two types of costs – contractors or services directly engaged by DOE, and agreements made between DOE and one or more of its partner agencies (such as the State Council of Higher Education for Virginia (SCHEV)) or partner institutions (such as James Madison University (JMU)) to perform one or more project tasks. Indirect costs have not

been applied to this category (see below). Contractual costs related to staffing have been fully specified, as have most of the other items, but in some cases – especially for such activities as pilot tests and model project efforts – in-depth estimates of expenses will not be available until after the grant is underway and will result from detailed planning as part of the project tasking.

Construction
Virginia is not requesting any funding for construction.

Other
In the present application, all proposed "Other" expenses represent flow-through funding. Indirect costs have not been applied to this category (see below).

Indirect Costs
The Virginia Department of Education's current Indirect Cost Rate is 8.28% of Total Direct Costs, excluding subcontracts in excess of $25,000, and pass-through funding (see Agreement 2009-068, between the Virginia DOE and the U.S. Department of Education). For purposes of calculating the LDS project indirect costs, all "Contractual" and "Other" category expenses have been excluded, and the rate applied only to the remaining direct costs. The project budget assumes that the rate will remain unchanged over the life of the project.

Training Stipends
Virginia is not seeking any funding for training stipends.

Finally, unless otherwise indicated, all quoted totals are three-year project totals.

(b) INTEGRATED K-12 STUDENT-TEACHER INFORMATION SYSTEM

Virginia is requesting $6,291,311 to create an integrated K-12 student-teacher information system.

1. INTEGRATED K-12 STUDENT-TEACHER INFORMATION SYSTEM					
	Category	**Year 1**	**Year 2**	**Year 3**	**3-Year Total***
1	**Personnel**	429,333	437,920	446,678	**$1,313,931**
2	**Fringe Benefits**	150,071	152,935	156,338	**$459,344**
3	**Travel**	0	0	0	**$0**
4	**Equipment**	0	0	0	**$0**
5	**Supplies**	0	0	0	**$0**
6	**Contractual**	917,500	1,026,900	426,808	**$2,371,208**
7	**Construction**	0	0	0	**$0**
8	**Other**	2,000,000	0	0	**$2,000,000**
9	***Total Direct Costs (Lines 1-8)***	*$3,496,904*	*$1,617,755*	*$1,029,824*	***$6,144,483***
10	**Indirect Costs**	47,975	48,923	49,930	**$146,827**
11	**Training Stipends**	0	0	0	**$0**
12	***Total Costs (Lines 9-11)***	***$3,544,879***	***$1,666,677***	***$1,079,754***	***$6,291,311***

* Totals may not add due to rounding

The system will match individual teachers to students and include student course enrollment and outcomes information. This outcome also supports school divisions' data system efforts for reporting, development of new reports, and delivery of a user training program.

Highlights of the budget for this outcome include:

Personnel

DOE proposes to hire a number of staff to work on this outcome. Personnel costs consist of:

- A pro-rated (weighted by outcome workload) share of the DOE Program Manager and State Lead Project Manager positions, at starting salaries of $113,333 each, for 35% FTE each year (with a 2% COLA in the second and third years), for a total cost of $242,791.
- The salary of a Data Collector/Reporter to develop, conduct, and report on the Teacher/Student data collection and the Teacher/Principal Evaluation data collection, at a starting salary of $80,000 per year (with a 2% COLA in the second and third years), for a total cost of $244,832.
- The salary of a Lead Manager to direct the Teacher Licensure upgrade, at a starting salary of $100,000 per year (with a 2% COLA in the second third years), for a total cost of $306,040.
- The salary of a Software Engineer to develop the data collection and reporting software, at a cost of $90,000 per year (with a 2% COLA in the second and third years), for a total cost of $275,436.
- The salary of a Statistician, at a starting salary of $80,000 per year (with a 2% COLA in the second and third years), for a total cost of $244,832.

Fringe Benefits

Associated with the personnel costs are $459,344 in fringe benefits expenses.

Contractual

In addition to the work performed by DOE staff (listed under the Personnel category, above), other outcome work would be performed on a contractual basis by the Innovation and Entrepreneurship Investment Authority (IEIA) associated with the Center for Innovative Technology (CIT), by respected research institutions arranged through contracts with DOE, and by the Virginia Information Technologies Agency (VITA) and its Enterprise Applications Division (VITA/EAD). Full contract budget details for many of these activities will not be able to be worked out until after the grant award. The estimate of $2,371,208 includes:

- $61,208 to lease a server for three years (purchased as a VITA IT service).
- $150,000 in the first year for CIT/IEIA to conduct sustainability and state-of-the-art analyses.
- $150,000 in the second year for CIT/IEIA to conduct stakeholder roundtables, gathering information on developing reports and training programs to better serve users' needs.
- $200,000 in each of the second and third years ($400,000 total) for CIT/IEIA to develop "Apps for Virginia", an incentive program to make available new and innovative data tools.
- $100,000 in the third year for seed money for "Apps for Virginia" developers to be selected through a program administered by CIT/IEIA.
- $150,000 in the first and second years, and $50,000 in the third year ($350,000 total) to

conduct research to develop a valid method of estimating individual teacher impact on student achievement. The selection of a research institution to perform the work will not be made until after the grant is awarded.

- $120,000 ($40,000 in each year) to develop a student growth model. The selection of a research institution to perform the work will not be made until after the grant is awarded.
- $404,000 in the first and second years ($808,000 total) to upgrade the current Teacher Licensure system.
- $175,000 to, in the first year, work with school divisions and other stakeholders on report formats, and, in the first and second years, to design and develop reports. This work would be undertaken by a VITA/EAD reports analyst /developer (at an annual contractor rate of $137,000, 100% FTE in the first year and 27% FTE in the second year).
- $25,000 in the second year to pilot test reports with selected stakeholders. (Pilot school division selection and detailed planning will take place only after the grant is awarded).
- A pro-rated share of the estimated costs for an interim and final IV&V (total of $32,000 for this outcome).

Other
As part of the effort to build an integrated K-12 student-teacher information system, DOE plans to offer $2,000,000 in competitive sub-grants to support school divisions' data development efforts to meet needs in one or more of the four ARRA reform areas. This budget item has been exempted from indirect cost calculations.

Indirect Costs
Indirect costs of $146,827 have been included, at a rate of 8.28% of Total Direct Costs less all "Contractual" and "Other" expenses.

(c) LONGITUDINAL DATA LINKING AND REPORTING SYSTEM

Virginia is requesting $6,772,162 to develop a cross-agency data linking and reporting system that can be used in a manner that maintains the confidentiality of individual student/teacher/employee data while ensuring that the information can be used for accountability and analytic purposes.

The key deliverable for this outcome is a multi-agency federated data system. Major tasks to accomplish this include developing the rubric and a lexicon of data elements, building a central linking directory, implementing message broker and web services, and finally creating processes and applications for data query reporting. Most of the requirements, design and development work for system will be accomplished in the first two years of the project. Year three includes testing, implementation and conducting pilots to verify system capability/functionality.

2. LONGITUDINAL DATA LINKING & REPORTING SYSTEM					
	Category	**Year 1**	**Year 2**	**Year 3**	**3-Year Total***
1	**Personnel**	86,133	87,856	89,613	**$263,602**
2	**Fringe Benefits**	27,941	28,392	28,852	**$85,184**
3	**Travel**	5,000	0	0	**$5,000**
4	**Equipment**	122,992	0	0	**$122,992**
5	**Supplies**	0	0	0	**$0**
6	**Contractual**	1,651,860	3,387,127	1,216,920	**$6,255,907**
7	**Construction**	0	0	0	**$0**
8	**Other**	0	0	0	**$0**
9	***Total Direct Costs (Lines 1-8)***	*$1,893,926*	*$3,503,375*	*$1,335,384*	***$6,732,685***
10	**Indirect Costs**	20,043	9,625	9,809	**$39,477**
11	**Training Stipends**	0	0	0	**$0**
12	***Total Costs (Lines 9-11)***	***$1,913,969***	***$3,513,000***	***$1,345,193***	***$6,772,162***

* Totals may not add due to rounding

Highlights of the budget for this outcome include:

Personnel
A pro-rated (weighted by outcome workload) share of the DOE Program Manager and State Lead Project Manager positions, at starting salaries of $113,333 each, for 38% FTE each year (with a 2% COLA in the second and third years), for a total cost of $263,602.

Fringe Benefits
Associated with the personnel costs are $85,184 in fringe benefits expenses.

Travel
Travel costs are included for attending meetings with focus groups and other stakeholders, estimated at $5,000.

Equipment
- New ASP.Net development tools and additional Business Intelligence (BI) tools estimated at $75,000.
- SQL Server 2008 - Standard Edition, with an estimated cost of $47,992 for 8 CPUs.

Contractual
DOE has reached agreements in principle with its partner agencies to perform a substantial portion of the project work. Details would be arranged through a Memorandum of Understanding (MOU) or similar instrument. The largest responsibility for this outcome would be borne by the Virginia Information Technologies Agency (VITA), through its role as the statewide provider of IT services, and through staffing and related support provided by its Enterprise Applications Division (VITA/EAD). The State Council of Higher Education for Virginia (SCHEV) and the Virginia Employment Commission (VEC) would also contribute.

The estimate of $6,255,907 for contractual expenses includes:

- VITA/EAD will provide multiple resources to accomplish many of the deliverables in this outcome. The total estimated contract staffing cost is $5,250,000. The breakdown is shown in the table below:

VITA/EAD CONTRACT STAFFING DETAILS			
Contract Staff	**Annual Rate**	**FTE%**	**3-Year Total**
Sr. Development manager	250,000	100%	750,000
Technical architect	250,000	Year 1- 25%, Year 2- 50%	187,500
Sr. Database developer #1	200,000	Year 1- 100%, Year 2- 100%, Year 3- 50%	500,000
Sr. Database developer #2	200,000	Year 2 -100%	200,000
Database administrator	200,000	Year 1- 25%, Year 2- 100%, Year 3- 50%	350,000
Data modeler #1	200,000	Year 1 and 2- 100%	400,000
Data modeler #2	200,000	Year 2- 50%	100,000
Sr. Java developer #1	200,000	Year 1- 25%, Year 2- 100%, Year 3- 50%	350,000
Sr. Java developer #2	200,000	Year 2- 100%	200,000
Quality Control lead	162,000	Year 2- 100%	162,000
Web architect/ developer	120,000	Year 1- 0%, Year 2- 100%	120,000
XML developer	200,000	Year 1- 50%, Year 2- 75%	200,000
Business systems analyst #1	200,000	Year 1- 100%, Year 2- 100%, Year 3- 50%	500,000
Business systems analyst #2	200,000	Year 2- 100%	200,000
Sr. Reports analyst/developer	160,000	Year 1- 0%, Year 2- 0%, Year 3- 100%	160,000
Business Intelligence developer	200,000	Year 2- 70%	141,000
Training Program Developer	160,000	Year 2- 100%	80,000
Training Provider	130,000	Year 1- 0%, Year 2- 65%, Year 3 - 50%	149,500
Data analyst #1	200,000	Year 1- 62.5%, Year 2- 100%	250,000
Data analyst #2	200,000	Year 1- 62.5%, Year 2- 100%	250,000
Total VITA/EAD staffing			$5,250,000

- Three staff – a web developer and a reporting systems analyst (each at $70,000 per year, at 100% FTE for all three years), and a senior reports developer (with an annual rate of $80,000, working 25% FTE for each of the three years) – at SCHEV (total cost of $480,000).
- IT services procured by DOE from VITA, for federated data servers (web, application, database, Logi.xml, and messaging servers) at an estimated cost of $300,000.
- IT services procured by the Virginia Employment Commission from VITA (HP ProLiant DL785 G6 Server - AM437A), for $193,907.
- A pro-rated share of the estimated costs for an interim and final IV&V (total of $32,000 for this outcome).

Indirect Costs

Indirect costs of $39,477 have been included, at a rate of 8.28% of Total Direct Costs less all "Contractual" and "Other" expenses.

(d) WEB-BASED PORTAL TO ACCESS EDUCATION AND WORKFORCE DATA

Virginia is requesting $1,141,469 to develop a web-based portal for all LDS users to access education and workforce data. Major tasks under this outcome include the construction of the portal itself, the addition of existing data-sets and reports from participant agencies, creation of a role-based access control system, integration of GIS data layers, implementation of tools for *ad hoc* reporting, development of new reports, and delivery of a user training program.

3. WEB-BASED PORTAL TO ACCESS EDUCATION & WORKFORCE DATA					
	Category	**Year 1**	**Year 2**	**Year 3**	**3-Year Total***
1	**Personnel**	13,600	13,872	14,149	**$41,621**
2	**Fringe Benefits**	4,363	4,433	4,505	**$13,300**
3	**Travel**	0	0	0	**$0**
4	**Equipment**	0	0	0	**$0**
5	**Supplies**	0	0	0	**$0**
6	**Contractual**	511,000	370,000	201,000	**$1,082,000**
7	**Construction**	0	0	0	**$0**
8	**Other**	0	0	0	**$0**
9	***Total Direct Costs (Lines 1-8)***	*$528,963*	*$388,305*	*$219,654*	***$1,136,922***
10	**Indirect Costs**	1,487	1,516	1,545	**$4,548**
11	**Training Stipends**	0	0	0	**$0**
12	***Total Costs (Lines 9-11)***	***$530,450***	***$389,821***	***$221,199***	***$1,141,469***

* Totals may not add due to rounding

Highlights of the costs for this outcome include:

Personnel
A pro-rated (weighted by outcome workload) share of the DOE Program Manager and State Lead Project Manager positions, at starting salaries of $113,333 each, for 6% FTE each year (with a 2% COLA in the second and third years), for a total cost of $41,621.

Fringe Benefits
Associated with the personnel costs are $13,300 in fringe benefits expenses.

Contractual
The estimate of $1,082,000 covers both staffing and a share of both an interim and final Independent Verification and Validation review.

- The tasks pertaining to this outcome would be performed by VITA/EAD staff/contractors, arranged through an agreement between DOE and VITA.

VITA/EAD CONTRACT STAFFING DETAILS			
Contract Staff	**Annual Rate**	**FTE%**	**3-Year Total**
Web Developer	100,000	50% year 1, 25% year 2, 25% year 3	100,000
Security Architect/Developer	120,000	100% year 1, 20% year 2	145,000
Business Intelligence Developer/Analyst #1	110,000	100% years 1 and 2, 70% year 3	328,000
Business Intelligence Developer/Analyst #2	100,000	100% year 1, 55% year 2	155,000
Network Administrator	120,000	20% for 3 years	72,000
Training Specialist	80,000	50% years 2 and 3	80,000
GIS Specialist	100,000	50% years 1 and 2	100,000
Business Intelligence Manager	100,000	30% years 1 and 2, 10% year 3	70,000
Total VITA/EAD staffing			$1,050,000

- A pro-rated share of the estimated costs for an interim and final IV&V (total of $32,000 for this outcome).

Indirect Costs
Indirect costs of $4,548 have been included, at a rate of 8.28% of Total Direct Costs less all "Contractual" and "Other" expenses.

(e) DATA MANAGEMENT AND CONTROL SYSTEM
DOE requests $1,045,722 to develop a Data Management and Control System (DMCS). As noted in the project narrative, the DMCS is a foundation element for the other outcomes. Much of the actual reporting, security, and access control work identified, planned, and designed by the DMCS effort would actually be carried out in the other outcomes.

4. DATA MANAGEMENT AND CONTROL SYSTEM					
	Category	**Year 1**	**Year 2**	**Year 3**	**3-Year Total***
1	**Personnel**	13,600	13,872	14,149	**$41,621**
2	**Fringe Benefits**	4,363	4,433	4,505	**$13,300**
3	**Travel**	7,000	7,000	2,000	**$16,000**
4	**Equipment**	0	0	0	**$0**
5	**Supplies**	0	0	0	**$0**
6	**Contractual**	376,000	354,714	238,214	**$968,928**
7	**Construction**	0	0	0	**$0**
8	**Other**	0	0	0	**$0**
9	***Total Direct Costs (Lines 1-8)***	*$400,963*	*$380,019*	*$258,868*	***$1,039,850***
10	**Indirect Costs**	2,067	2,095	1,710	**$5,872**
11	**Training Stipends**	0	0	0	**$0**
12	***Total Costs (Lines 9-11)***	***$403,030***	***$382,114***	***$260,578***	***$1,045,722***

* Totals may not add due to rounding

Budget highlights include:

Personnel

A pro-rated (weighted by outcome workload) share of the DOE Program Manager and State Lead Project Manager positions, at starting salaries of $113,333 each, for 6% FTE each year (with a 2% COLA in the second and third years), for a total cost of $41,621.

Fringe Benefits

Associated with the personnel cost is a total of $13,300 in fringe benefits expenses.

Travel

DOE requests $16,000 for conferences and other travel-related expenses to bring stakeholders together to work out the lexicon ($10,000), and to coordinate with USED and other states ($6,000).

Equipment

No funding is requested for equipment for this outcome, but DOE is proposing to use the NCES data-cutting tool, and is hopeful this could be obtained from the U.S. Department of Education at no charge.

Contractual

- A full-time research scientist/statistician at $150,000 per year for three years to design education and workforce program performance measures to foster improved decision-making and continuous process improvement (a three-year cost of $450,000). DOE is proposing that this position be hosted by the Virginia Community College System (VCCS).
- A total of $76,928 to contract for a small pilot-project in one agency (VEC or another partner workforce agency) to standardize data exchanges to enable cross-program evaluations.
- Two senior data analysts at $100,000 per year each (half-time, for years 1 and 2 only), and one data analyst at $70,000 per year, full-time for three years (a total of $410,000). This

funding would support the development of the lexicon, system development for a role-based access control (RBAC) system, quality assurance, risk assessment, and security training. The senior positions would be VITA/EAD staff or contractors, and the single data analyst would be obtained via an agreement with SCHEV.

- A pro-rated share of the estimated costs for an interim and final IV&V (total of $32,000 for this outcome).

Indirect Costs
Indirect costs of $5,872 have been included, at a rate of 8.28% of Total Direct Costs less all "Contractual" and "Other" expenses.

(f) ELECTRONIC HIGH SCHOOL TRANSCRIPTS EXCHANGE

Virginia is seeking $2,441,901 to develop the capability to electronically exchange high school transcripts with institutions of higher education.

5. ELECTRONIC HIGH SCHOOL. TRANSCRIPTS EXCHANGE					
	Category	**Year 1**	**Year 2**	**Year 3**	**3-Year Total***
1	**Personnel**	34,000	34,680	35,373	**$104,053**
2	**Fringe Benefits**	10,907	11,082	11,261	**$33,251**
3	**Travel**	55,000	55,000	0	**$110,000**
4	**Equipment**	0	0	0	**$0**
5	**Supplies**	0	0	0	**$0**
6	**Contractual**	1,062,060	1,096,060	16,000	**$2,174,120**
7	**Construction**	0	0	0	**$0**
8	**Other**	0	0	0	**$0**
9	***Total Direct Costs (Lines 1-8)***	*$1,161,967*	*$1,196,822*	*$62,635*	***$2,421,424***
10	**Indirect Costs**	8,272	8,343	3,861	**$20,477**
11	**Training Stipends**	0	0	0	**$0**
12	***Total Costs (Lines 9-11)***	***$1,170,239***	***$1,205,165***	***$66,496***	***$2,441,901***

* Totals may not add due to rounding

DOE is proposing to provide this capability for all 23 colleges (on all 40 campuses) of the Virginia Community College System (VCCS), and for three "pioneer" universities: George Mason University (GMU), Norfolk State University (NSU), and James Madison University (JMU). Software adapters will be built to allow transcripts to be brought into the institutions' existing student information systems (such as Datatel, Banner, and PeopleSoft). Major budget items for this outcome include:

Personnel
A pro-rated (weighted by outcome workload) share of the DOE Program Manager and State Lead Project Manager positions, at starting salaries of $113,333 each, for 15% FTE each year (with a 2% COLA in the second and third years), for a total cost of $104,053.

Fringe Benefits
Associated with the personnel costs are $33,251 in fringe benefits expenses.

Travel
VCCS estimates it will need $110,000 in travel costs (spread evenly over the first two project years) for Oracle consultants to work on-site. A more specific estimate will follow from detailed planning that will be conducted after the grant is awarded.

Contractual
Major contractual expenses for this outcome include contract staff, pioneer project agreements with institutions of higher education, and a share of the IV&V assessment:

- The following contractors would be hired for project years 1 and 2 through an arrangement with VCCS:
  - A lead system developer at $225/hour, for 572 hours per year in the first two years ($257,400).
  - A business analyst at $160/hour, for 1144 hours each year (total of $366,080).
  - One senior programmer/analyst, at $220/hour, for 1408 hours per year both years (619,520).
  - One programmer/analyst at $160/hour, for 1276 hours per year both years ($408,320).
  - A test engineer at $160/hour, for 440 hours in each of years 1 and 2 ($140,800).
  - The sum of $50,000 for training related costs prior to roll-out.

  The grand total for these VCCS contractors is $1,842,120

- DOE has also reached agreements in principle with three universities – George Mason, Norfolk State, and James Madison – to serve as "pioneers" for development of the transcript exchange capability. Each agreement would be for $100,000 (a total of $300,000), split evenly between the first two project years.

- A pro-rated share of the estimated costs for an interim and final IV&V (total of $32,000 for this outcome).

Indirect Costs
Indirect costs of $20,477 have been included, at a rate of 8.28% of Total Direct Costs less all "Contractual" and "Other" expenses.

(g) SUSTAINABILITY

Upon completion of the project Virginia will have an ongoing responsibility to operate and maintain the LDS meta-system. Following implementation, DOE intends to support the LDS by transitioning the DOE Program Manager position and selected other new project staff to operation and maintenance responsibilities (a number of existing DOE staff assigned to the project will also share in these roles). As part of the project, DOE will also execute agreements with partner agencies to continue their own support of their portion of the systems, databases, and tools upon which the LDS will depend.

DOE anticipates that the funding needed to sustain the LDS will be obtained from a number of sources, including:

- Staff time savings from a reduction in the effort required to respond to "custom" requests for data (since the proposed LDS will make it easier for users to obtain data on their own).

- Cost-sharing agreements with State partner agencies (including workforce agencies desiring to make use of LDS data)
- Re-allocation of funds from the departmental operating budget.

However, given that good estimates for LDS operating and maintenance costs will not be available until after the detailed planning has been done, and also given the current downward trend in State revenues, DOE believes that its approach to "sustainability" will need to be re-assessed after the design phase, and then monitored closely thereafter to ensure that the required resources will be available.

Budget Narrative

Budget Narrative - ED 524 Section C Spreadsheet

Attachment 1:
Title: **Virginia LDS Section 524 C** Pages: **13** Uploaded File:
G:\AllTheARRADocuments\FinalProducts\VirginiaLDSED524C.pdf

Outcome #1: K-12 Student-Teacher Information System

				1.02	1.02		
	Salary/ Contractor Annual Rate/ Unit Cost	**FTE %**	**Year 1**	**Year 2**	**Year 3**	**3-Year Total**	**Additional Notes**
Personnel							
Program Manager	113,333	35%	39,667	40,460	41,269	121,396	Weighted share of overall project management. IT Specialist IV. Includes COLA
Lead Project Manager	113,333	35%	39,667	40,460	41,269	121,396	Weighted share of overall project management. IT Specialist IV. Includes COLA
Data Collector/Reporter	80,000	100%	80,000	81,600	83,232	244,832	COLA
Lead Manager for L2000 Upgrade	100,000	100%	100,000	102,000	104,040	306,040	COLA
Software Engineer	90,000	100%	90,000	91,800	93,636	275,436	COLA
Statistician	80,000	100%	80,000	81,600	83,232	244,832	COLA
						0	
Total Personnel			*429,333*	*437,920*	*446,678*	*1,313,931*	
Fringe Benefits							
Employer Retirement (VRS) (11.26%)			48,343	49,310	50,296	147,949	
Social Security (6.2% capped at $106,800)			26,335	26,769	27,694	80,798	
Medicare (1.45%)			6,225	6,350	6,477	19,052	
Group Life (0.79%)			3,392	3,460	3,529	10,380	
Employee Medical (Health coverage) (Assumes $11,688 COVA Care Family)			54,934	56,032	57,153	168,119	COLA
Retiree Health Insurance Credit (1.00%)			4,293	4,379	4,467	13,139	
VSDP & Long-term Disability (1.00%)			4,293	4,379	4,467	13,139	
Deferred Compensation Match ($480)			2,256	2,256	2,256	6,768	No COLA
Total Fringe Benefits			*150,071*	*152,935*	*156,338*	*459,344*	
Travel							
						0	
						0	
						0	
Total Travel			*0*	*0*	*0*	*0*	
Equipment							
						0	
						0	
						0	
Total Equipment			*0*	*0*	*0*	*0*	
Supplies							
						0	
						0	
						0	

IT services: HP L2000	20,000	20,000	20,400	20,808	61,208	VITA IT service: COLA
State of the art & sustainability study	150,000	150,000	0	0	150,000	Center for Innovative Technology
Stakeholder roundtables facilitation	150,000	0	150,000	0	150,000	Center for Innovative Technology
Applications for Virginia program development & implementation	400,000	0	200,000	200,000	400,000	Center for Innovative Technology
Applications seed money	100,000	0	0	100,000	100,000	Center for Innovative Technology
Teacher Impact research project	350,000	150,000	150,000	50,000	350,000	Contract details to be determined as pa project tasking
Growth Model research project	120,000	40,000	40,000	40,000	120,000	Contract details to be determined as pa project tasking
IT service: Teacher licensure software upgrade	808,000	404,000	404,000	0	808,000	VITA IT service
Reports analyst/developer	137,500 100% year 1, 27% year 2	137,500	37,500	0	175,000	VITA/EAD
Pilot test of reporting using selected school divisions	25,000	0	25,000	0	25,000	VITA/EAD (Pilot school divisions and detailed planning to be determined as p of project tasking)
IV&V: Interim & final	160,000	16,000	0	16,000	32,000	Pro-rated share of overall IV&V
					0	
Total Contractual		*917,500*	*1,026,900*	*426,808*	*2,371,208*	
Construction						
					0	
					0	
					0	
Total Construction		*0*	*0*	*0*	*0*	
Other						
LEA competitive subgrants		2,000,000	0	0	2,000,000	Exempt from Indirect Costs
					0	
					0	
Total Other		*2,000,000*	-	-	*2,000,000*	
Total Direct Costs (lines 1-8)		***$ 3,496,904***	***$ 1,617,755***	***$ 1,029,824***	***$ 6,144,483***	
Indirect Costs (8.28%)		47,975	48,923	49,930	146,827	
Training Stipends					0	
Total Costs (lines 9-11)		***$ 3,544,879***	***$ 1,666,677***	***$ 1,079,754***	***$ 6,291,311***	

NOTES

s may not add due to rounding

st-of-living adjustment (COLA) of 2% per annum has been applied to salaries and *selected* other items for project years 2 and 3

percentages are for all three years unless otherwise specified. Salaries are based on 2,080 work hours per year. Contractor annual rates are based on 2,000 hours.

8% Indirect Cost rate (percentage of Total Direct Costs, here excluding "Contractual" and "Other" costs)

Outcome #2 Longitudinal Data Linking & Reporting System

				1.02	1.02		
	Salary/ Contractor Annual Rate/ Unit Cost	FTE %	Year 1	Year 2	Year 3	3-Year Total	Additional Notes
ersonnel							
rogram Manager	113,333	38%	43,067	43,928	44,806	131,801	Weighted share of overall project management. IT Specialist IV. In COLA
ead Project Manager	113,333	38%	43,067	43,928	44,806	131,801	Weighted share of overall project management. IT Specialist IV. In COLA
						0	
Total Personnel			*86,133*	*87,856*	*89,613*	*263,602*	
ringe Benefits							
mployer Retirement (VRS) (11.26%)			10,009	10,209	10,413	30,631	
ocial Security (6.2% capped at 106,800)			5,032	5,032	5,032	15,097	
edicare (1.45%)			1,249	1,274	1,299	3,822	
roup Life (0.79%)			680	694	708	2,082	
mployee Medical (Health coverage) Assumes $11,688 COVA Care amily)			8,883	9,061	9,242	27,185	COLA
etiree Health Insurance Credit .00%)			861	879	896	2,636	
SDP & Long-term Disability (1.00%)			861	879	896	2,636	
eferred Compensation Match ($480)			365	365	365	1,094	No COLA
Total Fringe Benefits			*27,941*	*28,392*	*28,852*	*85,184*	
ravel							
eetings and focus group sessions ith CIGs and other stakeholders to etermine the capabilities that need to e built			5,000	0	0	5,000	DOE
						0	
						0	
Total Travel			*5000*	*0*	*0*	*5000*	
quipment							
ew ASP.Net development tools and dditional Business Intelligence tools	75000		75,000	0	0	75,000	
QL Server 2008 - Standard Edition	$5,999 x 8 CPUs		47,992	0	0	47,992	
						0	
Total Equipment			*122,992*	-	-	*122,992*	
upplies							
						0	

Total Supplies			*0*	*0*	*0*	*0*	
Contractual							
Sr. Development manager	250,000	100%	250,000	250,000	250,000	750,000	VITA/EAD
Technical architect	250,000	Year 1- 25%, Year 2- 50%	62,500	125,000	0	187,500	VITA/EAD
Sr. Database developer #1	200,000	Year 1- 100%, Year 2- 100%, Year 3- 50%	200,000	200,000	100,000	500,000	VITA/EAD
Sr. Database developer #2	200,000	Year 1-0%, Year 2 - 100%	0	200,000		200,000	VITA/EAD
Database administrator	200,000	Year 1- 25%, Year 2- 100%, Year 3- 50%	50,000	200,000	100,000	350,000	VITA/EAD
Data modeler #1	200,000	Year 1- 100%, Year 2- 100%	200,000	200,000	0	400,000	VITA/EAD
Data modeler #2	200,000	Year 1- 0%, Year 2- 50%	0	100,000	0	100,000	VITA/EAD
Sr. Java developer #1	200,000	Year 1- 25%, Year 2- 100%, Year 3- 50%	50,000	200,000	100,000	350,000	VITA/EAD
Sr. Java developer #2	200,000	Year 1- 0%, Year 2- 100%	0	200,000	0	200,000	VITA/EAD
Quality Control lead	162,000	Year 1- 0%, Year 2- 100%	0	162,000	0	162,000	VITA/EAD
Web architect/ developer	120,000	Year 1- 0%, Year 2- 100%	0	120,000	0	120,000	VITA/EAD
XML developer	200,000	Year 1- 50%, Year 2- 75%	50,000	150,000	0	200,000	VITA/EAD
Business systems analyst #1	200,000	Year 1- 100%, Year 2- 100%, Year 3- 50%	200,000	200,000	100,000	500,000	VITA/EAD
Business systems analyst #2	200,000	Year 1- 0%, Year 2- 100%	0	200,000		200,000	VITA/EAD
Sr. Reports analyst/developer	160,000	Year 1- 0%, Year 2- 0%, Year 3- 100%	0	0	160,000	160,000	VITA/EAD
Business Intelligence analyst/ developer	200,000	Year 1- 0%, Year 2- 70%	0	141,000	0	141,000	VITA/EAD
Training Program Developer	160,000	Year 1- 0%, Year 2- 100%	0	80,000	0	80,000	VITA/EAD
Training Provider	130,000	Year 1- 0%, Year 2- 65%, Year 3 - 50%	0	84,500	65,000	149,500	VITA/EAD
Data analyst #1	200,000	Year 1- 62.5%, Year 2- 100%	125,000	125,000	0	250,000	VITA/EAD
Data analyst #2	200,000	Year 1- 62.5%, Year 2- 100%	125,000	125,000	0	250,000	VITA/EAD
Web developer	70,000	100%	70,000	70,000	70,000	210,000	SCHEV
Reporting systems analyst	70,000	100%	70,000	70,000	70,000	210,000	SCHEV
Sr. Reports developer	80,000	25%	20,000	20,000	20,000	60,000	SCHEV
							VITA IT service. Web, applicatio database, Logi.xml and messagi (est. 2 each, specific capacities t identified as part of project taskin
IT services: Federated data servers	$8333/month		100,000	100,000	100,000	300,000	Inclusive of licensing, etc.)
IT Services: HP ProLiant DL785 G6 Server - AM437A	$5,280/month		63,360	64,627	65,920	193,907	VITA IT service. COLA
IV&V: Interim & final	160,000		16,000	0	16,000	32,000	Pro-rated share of overall IV&V
						0	

				0
				0
				0
Total Construction	*0*	*0*	*0*	*0*
ther				
				0
				0
				0
Total Other	*0*	*0*	*0*	*0*
Total Direct Costs (lines 1-8)	***$ 1,893,926***	***$ 3,503,375***	***$ 1,335,384***	***$ 6,732,685***
direct Costs (8.28%)	20,043	9,625	9,809	39,477
raining Stipends				0
Total Costs (lines 9-11)	***$ 1,913,969***	***$ 3,513,000***	***$ 1,345,193***	***$ 6,772,162***

OTES

not add due to rounding

ving adjustment (COLA) of 2% per annum has been applied to salaries and *selected* other items for project years 2 and 3

ntages are for all three years unless otherwise specified. Salaries are based on 2,080 work hours per year. Contractor annual rates are based on 2,000 hours.

direct Cost rate (percentage of Total Direct Costs, here excluding "Contractual" and "Other" costs)

Outcome #3: Web-based User Portal

				1.02	1.02		
	Salary/ Contractor Annual Rate/ Unit Cost	**FTE %**	**Year 1**	**Year 2**	**Year 3**	**3-Year Total**	**Additional Notes**
Personnel							
Program Manager	113,333	6%	6,800	6,936	7,075	20,811	Weighted share of overall project management. IT Specialist IV. Includes COLA
Lead Project Manager	113,333	6%	6,800	6,936	7,075	20,811	Weighted share of overall project management. IT Specialist IV. Includes COLA
						0	
Total Personnel			*13,600*	*13,872*	*14,149*	*41,621*	
Fringe Benefits							
Employer Retirement (VRS) (11.26%)			1,531	1,562	1,593	4,687	
Social Security (6.2% capped at $106,800)			795	795	795	2,384	
Medicare (1.45%)			197	201	205	604	
Group Life (0.79%)			107	110	112	329	
Employee Medical (Health coverage) (Assumes $11,688 COVA Care Family)			1,403	1,431	1,459	4,292	Includes COLA
Retiree Health Insurance Credit (1.00%)			136	139	141	416	
VSDP & Long-term Disability (1.00%)			136	139	141	416	
Deferred Compensation Match ($480)			58	58	58	173	No COLA
Total Fringe Benefits			*4,363*	*4,433*	*4,505*	*13,300*	
Travel							
						0	
						0	
						0	
Total Travel			*0*	*0*	*0*	*0*	
Equipment							
						0	
						0	
						0	
Total Equipment			*0*	*0*	*0*	*0*	
Supplies							
						0	
						0	
						0	
Total Supplies			*0*	*0*	*0*	*0*	
Contractual							
			50% year 1, 25% year 2				

Security Architect/Developer	120,000	100% year 1, 20% year 2	120,000	25,000	0	145,000	VITA/EAD
Business Intelligence Developer/Analyst #1	110,000	1 $110,000/year @ 100% for years 1 and 2, 70% for year 3	120,000	120,000	88,000	328,000	VITA/EAD
Business Intelligence Developer/Analyst #2	100,000	100% year 1, 55% year 2	100,000	55,000	0	155,000	VITA/EAD
Network Administrator	120,000	20% for 3 years	25,000	25,000	22,000	72,000	VITA/EAD
Training Specialist	80,000	50% years 2 and 3	0	40,000	40,000	80,000	VITA/EAD
GIS Specialist	100,000	50% years 1 and 2	50,000	50,000	0	100,000	VITA/EAD
Business Intelligence Manager	100,000	30% years 1 and 2, 10% year 3	30,000	30,000	10,000	70,000	VITA/EAD
IV&V: Interim & final	160,000		16,000	0	16,000	32,000	Pro-rated share of overall IV&V
						0	
Total Contractual			*511,000*	*370,000*	*201,000*	*1,082,000*	
Construction							
						0	
						0	
						0	
Total Construction			*0*	*0*	*0*	*0*	
Other							
						0	
						0	
						0	
Total Other			*0*	*0*	*0*	*0*	
Total Direct Costs (lines 1-8)			***$ 528,963***	***$ 388,305***	***$ 219,654***	***$ 1,136,922***	
Indirect Costs (8.28%)			1,487	1,516	1,545	4,548	
Training Stipends						0	
Total Costs (lines 9-11)			***$ 530,450***	***$ 389,821***	***$ 221,199***	***$ 1,141,469***	

NOTES

s may not add due to rounding

st-of-living adjustment (COLA) of 2% per annum has been applied to salaries and *selected* other items for project years 2 and 3

percentages are for all three years unless otherwise specified. Salaries are based on 2,080 work hours per year. Contractor annual rates are based on 2,000 hours.

28% Indirect Cost rate (percentage of Total Direct Costs, here excluding "Contractual" and "Other" costs)

Outcome #4: Data Management & Control System

				1.02	1.02		
	Salary/ Contractor Annual Rate/ Unit Cost	**FTE %**	**Year 1**	**Year 2**	**Year 3**	**3-Year Total**	**Additional Notes**
Personnel							
Program Manager	113,333	6%	6,800	6,936	7,075	20,811	Weighted share of overall project management. IT Specialist IV. Include COLA
Lead Project Manager	113,333	6%	6,800	6,936	7,075	20,811	Weighted share of overall project management. IT Specialist IV. Include COLA
						0	
Total Personnel			*13,600*	*13,872*	*14,149*	*41,621*	
Fringe Benefits							
Employer Retirement (VRS) (11.26%)			1,531	1,562	1,593	4,687	
Social Security (6.2% capped at $106,800)			795	795	795	2,384	
Medicare (1.45%)			197	201	205	604	
Group Life (0.79%)			107	110	112	329	
Employee Medical (Health coverage) (Assumes $11,688 COVA Care Family)			1,403	1,431	1,459	4,292	COLA
Retiree Health Insurance Credit (1.00%)			136	139	141	416	
VSDP & Long-term Disability (1.00%)			136	139	141	416	
Deferred Compensation Match ($480)			58	58	58	173	No COLA
Total Fringe Benefits			*4,363*	*4,433*	*4,505*	*13,300*	
Travel							
Lexicon meetings			5,000	5,000	0	10,000	
Meetings in Washington, DC by research staff for technical assistance and grant progress related to the longitudinal data outcome.			2,000	2,000	2,000	6,000	
						0	
						0	
Total Travel			*7,000*	*7,000*	*2,000*	*16,000*	
Equipment							
NCES data-cutting tool			0	0	0	0	Software to be provided by NCES at n charge
						0	
						0	
Total Equipment			*0*	*0*	*0*	*0*	
Supplies							

						0	
Total Supplies			*0*	*0*	*0*	*0*	
Contractual							
						0	
Research scientist/statistician (program performance measurement)	150,000	100%	150,000	150,000	150,000	450,000	VCCS
VEC pilot project to standardize data exchange for program/system evaluation. Database, forms and reports design, system testing, and training and instructions and entry	76,928		40,000	34,714	2,214	76,928	Virginia Employment Commission
Data analyst	70,000	100%	70,000	70,000	70,000	210,000	
Sr. Data analyst #1	100,000	50% years 1 and 2	50,000	50,000	0	100,000	
Sr. Data analyst #2	100,000	50% years 1 and 3	50,000	50,000	0	100,000	
IV&V: Interim & final	160,000		16,000	0	16,000	32,000	Pro-rated share of overall IV&V
						0	
Total Contractual			*376,000*	*354,714*	*238,214*	*968,928*	
Construction							
						0	
						0	
						0	
Total Construction			*0*	*0*	*0*	*0*	
Other							
						0	
						0	
						0	
Total Other			*0*	*0*	*0*	*0*	
Total Direct Costs (lines 1-8)			***$ 400,963***	***$ 380,019***	***$ 258,868***	***$ 1,039,850***	
Indirect Costs*			2,067	2,095	1,710	5,872	
Training Stipends						0	
Total Costs (lines 9-11)			***$ 403,030***	***$ 382,114***	***$ 260,578***	***$ 1,045,722***	

NOTES

s may not add due to rounding

t-of-living adjustment (COLA) of 2% per annum has been applied to salaries and *selected* other items for project years 2 and 3

ercentages are for all three years unless otherwise specified. Salaries are based on 2,080 work hours per year. Contractor annual rates are based on 2,000 hours.

8% Indirect Cost rate (percentage of Total Direct Costs, here excluding "Contractual" and "Other" costs)

Outcome #5: Electronic High School Transcripts Exchange

		Salary/ Contractor Annual Rate/ Unit Cost	FTE %	Year 1	Year 2	Year 3	3-Year Total	Additional Notes
					1.02	1.02		
1	**Personnel**							
	Program Manager	113,333	15%	17,000	17,340	17,687	52,027	Weighted share of overall project management. IT Specialist IV. Includes COLA
	Lead Project Manager	113,333	15%	17,000	17,340	17,687	52,027	Weighted share of overall project management. IT Specialist IV. Includes COLA
							0	
	Total Personnel			*34,000*	*34,680*	*35,373*	*104,053*	
2	**Fringe Benefits**							
	Employer Retirement (VRS) (11.26%)			3,828	3,905	3,983	11,716	
	Social Security (6.2% capped at $106,800)			1,986	1,986	1,986	5,959	
	Medicare (1.45%)			493	503	513	1,509	
	Group Life (0.79%)			269	274	279	822	
	Employee Medical (Health coverage) (Assumes $11,688 COVA Care Family)			3,506	3,577	3,648	10,731	COLA
	Retiree Health Insurance Credit (1.00%)			340	347	354	1,041	
	VSDP & Long-term Disability (1.00%)			340	347	354	1,041	
	Deferred Compensation Match ($480)			144	144	144	432	No COLA
	Total Fringe Benefits			*10,907*	*11,082*	*11,261*	*33,251*	
3	**Travel**							
	Travel related costs (food, hotel, air costs) for Oracle consultants to be onsite			55,000	55,000	0	110,000	
							0	
							0	
	Total Travel			*55,000*	*55,000*	*-*	*110,000*	
4	**Equipment**							
							0	
							0	
							0	
	Total Equipment			*0*	*0*	*0*	*0*	
5	**Supplies**							
							0	
							0	
							0	
	Total Supplies			*0*	*0*	*0*	*0*	
6	**Contractual**							

			29% years 1 and				time other tasks (average 29%/year both
	Lead System Developer	450,000	2	128,700	128,700	0	257,400 years)
			57% years 1 and				
	Business Analyst	320,000	2	183,040	183,040	0	366,080 VCCS
			70% years 1 and				
	Sr. Programmer/Analyst	440,000	2	309,760	309,760	0	619,520 VCCS
			64% years 1 and				
	Programmer/Analyst	320,000	2	204,160	204,160	0	408,320 VCCS
			22% years 1 and				VCCS. Only in Build Phase (average
	Test Engineer	320,000	2	70,400	70,400	0	140,800 22%/year both years 1 and 2)
	Transcript exchange training program	50,000		0	50,000	0	50,000 VCCS
	JMU transcript model project	100,000		50,000	50,000	0	100,000 James Madison University
	GMU transcript model project	100,000		50,000	50,000	0	100,000 George Mason University
	Norfolk State transcript model project	100,000		50,000	50,000	0	100,000 Norfolk State University
	IV&V: Interim & final	160,000		16,000	0	16,000	32,000 Pro-rated share of overall IV&V
						0	0
	Total Contractual			*1,062,060*	*1,096,060*	*16,000*	*2,174,120*
7	**Construction**						
							0
							0
							0
	Total Construction			*0*	*0*	*0*	*0*
8	**Other**						
							0
							0
							0
	Total Other			*0*	*0*	*0*	*0*
9	***Total Direct Costs (lines 1-8)***			***$ 1,161,967***	***$ 1,196,822***	***$ 62,635***	***$ 2,421,424***
10	**Indirect Costs (8.28%)**			8,272	8,343	3,861	20,477
11	**Training Stipends**						0
12	***Total Costs (lines 9-11)***			***$ 1,170,239***	***$ 1,205,165***	***$ 66,496***	***$ 2,441,901***

NOTES

otals may not add due to rounding

cost-of-living adjustment (COLA) of 2% per annum has been applied to salaries and *selected* other items for project years 2 and 3

TE percentages are for all three years unless otherwise specified. Salaries are based on 2,080 work hours per year. Contractor annual rates are based on 2,000 hours.

8.28% Indirect Cost rate (percentage of Total Direct Costs, here excluding "Contractual" and "Other" costs)

GRAND TOTAL (ALL OUTCOMES)

		Year 1	Year 2	Year 3	3-Year Total
1	**Personnel**				
	Total Personnel	*576,666*	*588,199*	*599,963*	*1,764,829*
2	**Fringe Benefits**				
	Total Fringe Benefits	*197,645*	*201,275*	*205,460*	*604,380*
3	**Travel**				
	Total Travel	*67,000*	*62,000*	*2,000*	*131,000*
4	**Equipment**				
	Total Equipment	*122,992*	-	-	*122,992*
5	**Supplies**				
	Total Supplies	-	-	-	-
6	**Contractual**				
	Total Contractual	*4,518,420*	*6,234,801*	*2,098,942*	*12,852,163*
7	**Construction**				
	Total Construction	-	-	-	-
8	**Other**				
	Total Other	*2,000,000*	-	-	*2,000,000*
9	***Total Direct Costs (lines 1-8)***	***$ 7,482,723***	***$ 7,086,275***	***$ 2,906,365***	***$ 17,475,363***
10	**Indirect Costs (8.28%)**	*79,844*	*70,502*	*66,855*	*217,201*
11	**Training Stipends**	*0*	*0*	*0*	*0*
12	***Total Costs (lines 9-11)***	***$ 7,562,567***	***$ 7,156,778***	***$ 2,973,220***	***$ 17,692,564***

NOTES

FTE percentages are for all three years unless otherwise specified. Salaries are based on 2,080 work hours per year. Contractor annual rates are based on 2,000 ho

8.28% Indirect Cost rate (percentage of Total Direct Costs, here excluding "Contractual" and "Other" costs)