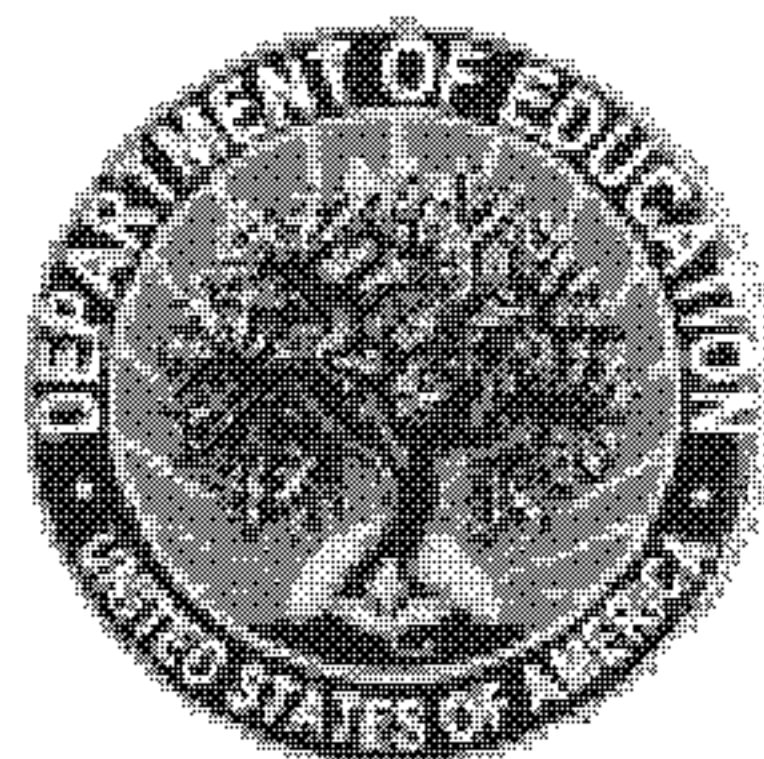


# **U.S. Department of Education**

Washington, D.C. 20202-5335



## **APPLICATION FOR GRANTS UNDER THE**

**STATEWIDE LONGITUDINAL DATA SYSTEM RECOVERY ACT GRANTS  
CFDA # 84.384A  
PR/Award # R384A100055**

Closing Date: DEC 04, 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.).

<b>Application for Federal Assistance SF-424</b>		Version 02
* 1. Type of Submission                      * 2. Type of Application: * If Revision, select appropriate letter(s): <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> New <input checked="" type="checkbox"/> Application <input type="checkbox"/> Continuation                      * Other (Specify) <input type="checkbox"/> Changed/Corrected Application <input type="checkbox"/> Revision		
* 3. Date Received: 12/4/2009		4. Applicant Identifier: State of Tennessee Department of Education
5a. Federal Entity Identifier: 626001445		* 5b. Federal Award Identifier: 626001445
<b>State Use Only:</b>		
6. Date Received by State:		7. State Application Identifier:
<b>8. APPLICANT INFORMATION:</b>		
* a. Legal Name: State of Tennessee Department of Education		
* b. Employer/Taxpayer Identification Number (EIN/TIN): 626001445		* c. Organizational DUNS: 879016251
<b>d. Address:</b>		
* Street1:	710 James Robertson Parkway	
Street2:	6th Floor, Andrew Johnson Tower	
* City:	Nashville	
County:	Davidson	
State:	TN	
Province:		
* Country:	USA	
* Zip / Postal Code:	37243	
<b>e. Organizational Unit:</b>		
Department Name: State of Tennessee		Division Name: Department of Education
<b>f. Name and contact information of person to be contacted on matters involving this application:</b>		
Prefix:	Ms.	* First Name: Irma
Middle Name:		

\* Last Name: Jones

Suffix:

Title: Chief Analytic Officer

Organizational Affiliation:

\* Telephone Number: (615)532-0505 Fax Number: (615)532-4791

\* Email: IRMA.JONES@TN.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:**

84.384

Title:

GRANTS FOR STATEWIDE, LONGITUDINAL DATA SYSTEMS UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

**13. Competition Identification Number:**

Title:

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

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

GRANTS FOR STATEWIDE, LONGITUDINAL DATA SYSTEMS UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

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: 5th

\* b. Program/Project: 5th

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

**Attachment:**

Title :

File :

**17. Proposed Project:**

\* a. Start Date: 6/1/2010

\* b. End Date: 7/1/2013

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

a. Federal	\$ 19817491
b. Applicant	\$ 0
c. State	\$
d. Local	\$
e. Other	\$
f. Program Income	\$
g. TOTAL	\$ 19817491

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

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

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

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

- Yes  No

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

\*\* I AGREE

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

**Authorized Representative:**

Prefix: Dr. \* First Name: Timothy  
 Middle Name: K  
 \* Last Name: Webb  
 Suffix:

Title: Commissioner

\* Telephone Number: (615)741-5158 Fax Number: (615)532-4791

\* Email: TIM.WEBB@TN.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:  
State of Tennessee Department of...

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	\$ 1,111,250	\$ 1,236,000	\$ 1,273,080	\$ 0	\$ 0	\$ 3,620,330
2. Fringe Benefits	\$ 385,675	\$ 460,513	\$ 474,328	\$ 0	\$ 0	\$ 1,320,516
3. Travel	\$ 46,000	\$ 56,000	\$ 56,000	\$ 0	\$ 0	\$ 158,000
4. Equipment	\$ 702,029	\$ 75,750	\$ 77,037	\$ 0	\$ 0	\$ 854,816
5. Supplies	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
6. Contractual	\$ 2,430,000	\$ 4,650,000	\$ 4,525,000	\$ 0	\$ 0	\$ 11,605,000
7. Construction	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
8. Other	\$ 756,744	\$ 749,743	\$ 752,342	\$ 0	\$ 0	\$ 2,258,829
9. Total Direct Costs (lines 1-8)	\$ 5,431,698	\$ 7,228,006	\$ 7,157,787	\$ 0	\$ 0	\$ 19,817,491
10. Indirect Costs*	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
11. Training Stipends	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
12. Total Costs (lines 9-11)	\$ 5,431,698	\$ 7,228,006	\$ 7,157,787	\$ 0	\$ 0	\$ 19,817,491

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

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

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

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

Period Covered by the Indirect Cost Rate Agreement: From: \_\_\_/\_\_\_/\_\_\_ To: \_\_\_/\_\_\_/\_\_\_ (mm/dd/yyyy)

Approving Federal agency:  ED  Other (please specify): \_\_\_\_\_ The Indirect Cost Rate is 0%

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

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



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

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:  
State of Tennessee Department of...

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:** Tim W. Webb

**Title:** Commissioner

**Date Submitted:** 12/01/2009

### Disclosure of Lobbying Activities

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

<b>1. Type of Federal Action:</b> <input type="checkbox"/> Contract <input type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Loan <input type="checkbox"/> Loan Guarantee <input type="checkbox"/> Loan Insurance	<b>2. Status of Federal Action:</b> <input type="checkbox"/> Bid/Offer/Application <input type="checkbox"/> Initial Award <input type="checkbox"/> Post-Award	<b>3. Report Type:</b> <input type="checkbox"/> Initial Filing <input type="checkbox"/> Material Change <b>For Material Change only:</b> Year: 0 Quarter: 0 Date of Last Report:
<b>4. Name and Address of Reporting Entity:</b> <input checked="" type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier, if known: 0  Name: Address: City: State: Zip Code + 4: -  <b>Congressional District, if known:</b>	<b>5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:</b>  Name: Address: City: State: Zip Code + 4: -  <b>Congressional District, if known:</b>	
<b>6. Federal Department/Agency:</b>	<b>7. Federal Program Name/Description:</b>  CFDA Number, if applicable:	
<b>8. Federal Action Number, if known:</b>	<b>9. Award Amount, if known: \$0</b>	
<b>10. a. Name of Lobbying Registrant</b> (if individual, last name, first name, MI): Address: City: State: Zip Code + 4: -	<b>b. Individuals Performing Services</b> (including address if different from No. 10a) (last name, first name, MI): Address: City: State: Zip Code + 4: -	
<b>11.</b> Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.	Name: Dr. Timothy K. Webb Title: Commissioner Applicant: State of Tennessee Department of Education Date: 12/04/2009	
<b>Federal Use Only:</b>		Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

## CERTIFICATION REGARDING LOBBYING

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

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

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

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

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

Statement for Loan Guarantees and Loan Insurance.

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

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

### APPLICANT'S ORGANIZATION

State of Tennessee Department of Education

### PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: Dr.      First Name: Tim      Middle Name: W

Last Name: Webb      Suffix:

Title: Commissioner

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

Date:

12/01/2009

ED 80-0013

03/04



# Project Narrative

## Project Narrative - Project Abstract

### Attachment 1:

**Title: TLDS 360: Tennessee Longitudinal Data System 360 Degree View of A Student Pages: 1 Uploaded File:  
C:\Documents and Settings\CA18071\Desktop\UI\ABSTRACT.pdf**

## ABSTRACT

### *TLDS 360: Tennessee Longitudinal Data System 360 Degree View of the Student.*

The Tennessee Department of Education (TDOE) and the state of Tennessee propose to build a longitudinal student data system that will push the frontier in collection and utilization of P20 data and promote improvements in program administration and educational outcomes. The initiative will significantly increase teacher, school, and district-level use of near real time student data by employing sophisticated, as yet underutilized longitudinal data for predictive and retrospective identification of student achievement growth and academic risk factors. The project will complete the TLDS P20. TDOE's P12 LDS, supported by a 2006 Institute for Education Sciences grant, is already well developed. However, the current TLDS falls short of a complete, efficacious P20 information system. TDOE and its partner, the University of Tennessee Center for Business and Economic Research (CBER), will collaborate with the Tennessee Higher Education Commission (THEC) and the Department of Labor and Workforce Development (L&WD) to expand the P12 LDS to a P20 system. Tennessee's current P12 LDS and business intelligence functions satisfy basic expectations for interoperability and data delivery to local, district and state educators. Proposed improvements to existing business intelligence systems will dramatically expand the scope and depth of accessible data while maintaining stringent security standards. The project will develop a secure and adaptive database architecture that will integrate academic data on teacher/student relationships, attainment, course completion, and test scores, as well as data on health, children's services, mental health, and delinquency. This project envisions and plans to execute what is coined as *TLDS 360: Tennessee Longitudinal Data System 360 Degree View of the Student*. TLDS will incorporate data elements from other child-serving departments and will facilitate more robust characterizations of health, social welfare and behavioral conditions that influence students' progress from earliest child care, through P12 and higher education, and into the workforce.

The TDOE as the lead agency has partnered with CBER, an external academic research organization, which will serve as the conduit for receiving, aligning and coordinating data for reporting and research protocols to achieve project outcomes. As an established third party contractor, CBER is prepared to integrate data from SAS, Inc. (the vendor for Tennessee's Value Added Assessment System) with data from TDOE, THEC, L&WD, as well as other child-serving departments and agencies. This coordinated approach will permit near- and long-term educational, administrative and research issues to be addressed, including the development of Early Warning Indicators and analyses of teacher effectiveness.

TLDS Governance will be a high-level organization representing all of the partner agencies committed to the success of the project. Initial Project Charters from relevant departments reflect commitments to negotiate data sharing agreements, though much of the data from TDOE, CBER, SAS, Inc., THEC, L&WD, and the Department of Human Services is already available for inclusion in the P-20. The project proposal capitalizes on the current TLDS foundation and positions it for expansion as a nationwide model for multidisciplinary support of student achievement. It corresponds to data system requirements for potential projects funded by Race To The Top grants.

# Project Narrative

## Project Narrative - Project Narrative

Attachment 1:

Title: **Project Narrative** Pages: **24** Uploaded File: **C:\Documents and Settings\CA18071\Desktop\UINARRATIVE [1].pdf**

## *6. Project Narrative*

### TLDS 360: Tennessee Longitudinal Data System 360 Degree View of the Student

“If we remain wedded to the way education is currently provided we cannot imagine other ways...we need some imagination, some fantasy, some new ways of thinking - some magic in fact.” Hedley Beare, Professor of Education, Melbourne

'We imagine a school in which students and teachers excitedly and joyfully stretch themselves to their limits in pursuit of projects built on their vision...not one that succeeds in making apathetic students satisfying minimal standards.' Vision for Education: The Caperton-Papert Platform, Seymour

#### 6(a) Need for the Project

Tennessee perennially ranks near the bottom across the states in per pupil spending on elementary and secondary education. This low level of spending is linked, in part, to relatively low levels of per capita income and thus relatively low tax capacity. Accordingly, the state must ensure the greatest possible return to each tax dollar it generates. The state economy has long relied on manufacturing as the foundation of its economic base, but manufacturing jobs continue to disappear. This is not a new phenomenon—in 1968, more than one-third of Tennesseans were employed in manufacturing, but by 2008 only one in ten workers held a manufacturing job. The ever-increasing pace of economic transformation means the state has to work harder and harder to promote economic opportunity.

Education is the cornerstone of economic security for people and families and the economic development communities. Tennessee needs to improve educational outcomes and teacher effectiveness, promote efficiencies in public service administration and delivery, and ensure accountability with the public at large. The project proposed here would put important information in the hands of teachers to do their jobs better and enable research and reporting to meet these needs. In addition, the breadth of the proposed program of work—the length of the educational continuum captured in the database, linkages to state agencies outside of education and data interoperability—would serve as model for other states developing longitudinal education databases.

#### Background

Tennessee initiated formal development of a longitudinal data system in 2006 when TDOE received a Statewide Longitudinal Data Systems (SLDS) Grant from the Department of Education Institute of Education Science (#R372A05127). The intent was to enable the state to design, develop, and implement a statewide longitudinal data system, referred to as the Tennessee Longitudinal Data System (TLDS), to efficiently and accurately manage, analyze, disaggregate, and use individual student data, consistent with the Elementary and Secondary Education Act of 1965, as amended (20 U.S.C. 6301 et seq.).

TDOE conducted in-depth research into its K-12 information system environment, national standards and best practices in the field, and reviewed status of work already under way to

address many of the grant objectives. TDOE engaged Oracle Technologies for the data warehouse infrastructure and Business Intelligence (BI) Reporting Tool and implemented a design bringing together a significant amount of education data in a common environment. TDOE also established procedures that have improved confidentiality of student records, implementing a new unique student identifier, so cross-system and cross-year data are immediately accessible. The process for assigning unique student identifiers does not involve school district interaction. Numbers are automatically generated at the State Education Agency (SEA) and downloaded into school district databases. Students' confidential information is stored in a separate database and only accessed when data are imported into the warehouse. In compliance with Family Educational Rights and Privacy Act (FERPA) regulations, TLDS provides student-level data for longitudinal analyses without disclosing student identifying information. The warehouse serves a range of users who report varying degrees of satisfaction with the current BI tool. A variety of users obtain data from the warehouse, including TDOE staff, Tennessee Higher Education Commission (THEC), external researchers, managers, and policymakers.

Tennessee's initial SLDS grant also facilitated and prompted connections between K-12, higher education and workforce data. Through a partnership among TDOE, THEC and CBER, a teacher data warehouse was created utilizing the TDOE warehouse data and connecting TDOE data on teacher placement with THEC data on teacher preparation and CBER workforce data. The creation of the teacher data warehouse provides a platform for the next phase of TLDS growth.

Tennessee envisions the next iteration of TLDS as a primary driver of data and analysis to enhance the state's efforts on teacher effectiveness, supporting a P-20 system, revamping and integrating standards and assessments and better aligning targeted interventions. This project will allow these outcomes by addressing four significant needs of the state: First, to train Local Education Authorities statewide to fully utilize the K-12 SAS-based data and expanded data available through the P-20 system; second, to complete its P-16 and P-20 system; third, to advance to a 360 degree view of its students (*8. Appendix A2*); and fourth, to enhance performance across state agencies.

(1) Fully utilize K-12 TLDS data.

It has been well documented that educational value-added assessment accounts for any influence of socio-economic factors that are consistent across time, *if* the assessment is based on multivariate, longitudinal analyses of each student's entire vector of prior academic achievement scores. Tennessee has an established history of research about accelerators and impediments to student progress already running at the teacher level. Interface allows authorized users to access results from analyses that measure the impact of districts, schools and teachers on student academic progress by subject level and by achievement level of students, plus individual student projections to a variety of academic milestones students face. Thus, these results offer educators the opportunity to focus on effective educational delivery, which will result in appropriate academic progress for all students.

However, there are unexpected environmental conditions that can alter academic trajectories of individual students. Examples: Entry into protective custody, incarceration of a parent, family lost jobs, death or serious illness of a parent or other care giver. Any of these would most likely have an unsettling effect on a student's capacity to engage in appropriate academic behaviors.

Building on expertise accumulated through years of measuring of schooling influences on student academic progress and making projections for future student success, this proposal will link measurement expertise across state agencies to identify combinations of strategies that are successfully neutralizing currently unpredicted external forces for students. A 360 degree student view (8. *Appendix A1* and described more fully in (3)) and dashboards to support this proposal go beyond information sharing across state agencies. Dashboards will overlay the state's evaluation of coordinated inter-agency efforts with empirical research tied to student outcomes.

Tennessee has in place an infrastructure to deliver to educators indicators collected within the school environment through a user-friendly interface. Thousands of Tennessee teachers and principals already have responsibility-specific accounts to a secure-access drill down delivery system. With the state's commitment to increase access to all appropriate school personnel by fall 2010, the TVAAS restricted website is a reasonable, cost effective solution to delivery of the 360 degree student view for educational uses. Missing from this existing delivery is access to student/family data from other state agencies that can trigger additional educational support for students whose academic success is threatened or potentially compromised by unexpected events occurring outside of education. Proposed additions to the existing infrastructure will increase the capacity to do the following:

- 1) Provide principals and teachers with an early warning when situations that might impede student performance occur and activate a monitoring of a student's indicators of academic engagement (e.g., grades, discipline, and attendance). This would allow for additional intervention, should evidence accumulate to warrant it. Individual student multi-agency transfer into the system will trigger the following:
  - a. Appropriate principal/teacher notification of change in student environmental/family status (Phase I)
  - b. Appropriate automated monitoring of academic environment behaviors to assess accumulating risk (Phase I)
  - c. Revised individual student probabilities for academic success, given an individual student's change in status. (Phase II)
- 2) Provide feedback to other appropriate state agencies regarding specific future academic risks that might exist due to an individual student's change in status (e.g., failure in grade/missing graduation target). (Phase I)
- 3) Provide aggregate school level feedback to the school system so system level supports can be increased for specific schools as level of severity of potential academic failure increases. (Phase I)

- 4) Provide aggregate school system level feedback to appropriate state agencies regarding counts of student/family overlapped services to improve efficiency of service delivery. (Phase I)
- 5) Provide empirical evidence of whether integrated delivery of services has successfully impacted students' academic performance so the unexpected environmental intrusion is neutralized. (Phase II)
- 6) Identify inter-agency actions that were successful and actions that need improving. (Phase II)
- 7) Link to forecasting for future revenue requirements. The University of Tennessee Center for Business and Economic Research (CBER, the external research partner for this project) and SAS Institute partnership will also improve forecasting capacity within the state regarding need for targeted differentiated future funding to focus on measured effective interventions for highly at risk students. (Phase II)

Phase I will be accomplished in the initial year and Phase II will be added after appropriate research using data collected in Phase I.

(2) Complete TLDS P-16 and P-20: The second purpose of this application is to expand and improve TDOE's P -12 TLDS to a P-20 system to allow data to be collected, archived, combined, analyzed and used to promote data driven analyses and interventions for continuous improvement for learning standards, curricula, instructional processes and programs, professional development, post secondary educational programs and workforce program improvements. Combination of the current TDOE LDS, THEC systems and other data sources will track an individual's academic and educational achievement, and also post-education and career experience. System tools will support practitioner and researcher needs and allow for retrospective (e.g., determination of which curricula were effective) and prospective uses of data (e.g., projections of future capacity and curricula requirements in the education system, predictive studies of student outcomes, and early warning signals for achievement challenges). The current status of the state's TLDS is displayed in *10. Appendix C. —Current Status of State's Longitudinal Data System*.

A core element of TLDS—the P-20 student-level database—will be an invaluable tool that can be used to address an array of important education, administrative issues and policy questions. In the context of teacher effectiveness, only standard metrics like student progression, dropout rates, test scores and value added assessments can be utilized. Extending P-20 to include child care prior to pre-kindergarten and to workforce outcomes, like employment status and earnings, will accommodate a richer analysis of teacher effectiveness by controlling for characteristics and experiences of children before they enter formal schooling and tracing through workforce outcomes that transpire after graduation.

Data Quality: The TLDS will implement a software application data cleansing tool (*10. Appendix A2*) through a third party trusted vendor which will securely move certain student records from a sending agency to a receiving agency authorized by FERPA. This system will track a student's lifecycle. When a student transfers from one district to another, that data will be moved from

one LEA to the other LEA electronically – immediately and securely. The same will be true when a student moves to Postsecondary education. This data cleansing tool will also assist with student drop out data. Tennessee’s dropout rate may be reduced because there will be better tracking of interstate enrollment.

This tool supports serve both the needs to PK-12 and Postsecondary systems. The system translates data from PK-12 sets into formats preferred by Postsecondary users, such as PESC High School Transcript XML or SPEEDE EDI.

P-16. The Tennessee Higher Education Commission (THEC) currently has a unit-record student information system with data back to 1995. The information comprising this system includes enrollment, financial aid, completions, and lottery scholarship information. This student information system has served THEC well in research and reporting on policy issues limited to public higher education.

THEC enjoys excellent working partnership with Tennessee Department of Education. The two agencies have collaborated on many research projects in the past. Having the two data systems separated, however, has limited the types of research studies that have been conducted up to this point. By merging the data into a statewide longitudinal data system, a greater understanding of education in Tennessee will be achieved.

Some of the policy questions that can be answered with the statewide longitudinal data system include:

- How do the state’s high school graduates persist and perform in higher education?
- What pattern of high school course-taking leads to success in higher education?
- What is the predictive value of the state’s tenth grade assessment?
- Who needs developmental education courses in reading, writing and math?
  - How is this related to high school course taking?
  - How is this related to tenth grade test results?
  - How is this related to scores on the GED examination?
- How do under-represented populations persist and perform in higher education?
  - Adults
  - Males
  - Low-income
  - GED recipients
  - Racial/ethnic minorities
- How do the findings inform high school and adult education reform, including development of college-ready standards in the key academic skill areas?
- How do financial aid packaging practices affect college choice, persistence and academic success of low-income students?
- What are the actual graduation rates, adjusted for mobility across systems and other states?
- How do various student retention strategies impact student success?

- What is the employment and wage status of graduates by program of study and degree level?
- Are we graduating sufficient numbers of students in fields with high job vacancy rates?
- How do graduates of various types of teacher preparation programs perform?

The education data warehouse contributes to our store of substantive knowledge and it will increase the speed and routinization with which cross-cutting projects can be completed, leading to increased capacity for research and reporting that is P-16 in nature.

eTranscripts: Since student transcripts are the quintessential longitudinal student record, the most significant impact a state education agency and the U.S. Department of Education can have on the quality of the nation's longitudinal education records is to ensure that schools have the capacity to create and exchange correct, certified and timely student records. TLDS' eTranscript application will permit high schools, the state, legislators, postsecondary institutions and the public to assess where Tennessee high school students apply to college, where they are admitted, and where they actually attend. This system will also simplify transfer of academic records between high schools when students move from school to school, and will allow postsecondary institutions to quickly update academic records for newly admitted students. With appropriate approvals, transcript data from colleges can even be sent back to originating high schools so school districts can assess their own college preparation efforts. Recipients can make faster and better informed decisions about incoming individuals, such as in cases of college enrollment and workforce readiness.

P-20: With completion of P-20 TLDS, Tennessee Labor and Workforce Development (L&WD) will have access to quality decision making data to substantiate the value of federally funded programs within its organization. These data will allow L&WD to demonstrate what transpired in students' lives after completing their education. Programs include, but are not limited to, completion data for GED Programs, Adult Literacy Programs, Training Grants, Pell Grant Applicant Information, Work Force Training, English as a Second Language Training, Unemployment Insurance data, and Tennessee Teens to Work data.

Through successful collaboration with L&WD, TLDS P-20 will boast the abilities of:

- Student Identification Element – tracking individualized data beginning at the fundamental level through an educational student unique identifier throughout their education experience and into the labor force. This identifier will be used across P-12, Community College System, University System, Workforce Tracking and more.
- Adhering to Data Standards - Postsecondary and Higher Education typically involve a high percentage of students whose P-12 education occurred outside the state where the institution is based. TDOE's Master Person Index ((MPI, described in 6(b)(iii)) and L&WD will address this issue by developing algorithms to match student data elements across multiple databases and data fields.
- Subject and Skills Data – L&WD maintains data on individuals and students. The P-20 TLDS will have the ability to consistently manage subjects, skills, intensity and other information regarding courses consistently across the entire system.

- Managing Complexity – Many students are dual enrolled whether it is P-12 to P-16 or P-16 to the Workforce. New skills will enable citizens to remain successful contributors to their communities and the world. Many of these individuals go on to become teachers in the P-12-P-20 System.
- Systems Interoperability – Interoperability will be addressed through Data Security sharing agreements and use of BI tools that allow distraction and reporting of data from multiple databases for consolidation purposes via a business intelligence tool selected during the grant. Presently student level data is available through multiple heterogeneous, autonomous, distributed data sources containing related and duplicated information. Resolution for solving heterogeneous multi-database systems requires discovering and managing certain types of knowledge facts. The TLDS P-16/P-20 will operate from a framework for managing knowledge for interoperable access and use of heterogeneous database systems. The framework will utilize knowledge bases at the integration and component sites. Key issues for resolving heterogeneity are acquisition of appropriate metadata and discerning relationships among constructs of different database schemas. Management of this knowledge in a modular and efficient way is crucial for building an interoperable database system. A multi-database prototype system utilizing the techniques in this proposal is being developed.

(3) Advance to a 360 degree view of students. Tennessee’s proposal is to go much further than extension of TLDS to P-16/P-20. It is to develop, provide appropriate access to, and effectively use a comprehensive TLDS to achieve a 360 degree view of students. Many conditions in addition to students’ academic experiences influence learning, among them: of the almost 1.5M student age Tennesseans under age 18, over 100,000 (9.6%) have a disability; about 350,000 (38.8%) receive or are eligible for Free or Reduced lunch; 8.4% get Families First grants; 27.8% get Food Stamps; and over 670,000, almost 40%, are on TennCare. Child abuse and neglect contribute negatively to the learning experiences. Unfortunately, recent statistics indicate that 11.6% of the reported cases of abuse and neglect were substantiated. (2009 Kids Count Data Book)

In this project, TDOE will bolster TLDS significantly with information from other child serving agencies and the adult Department of Correction in order to inform best practices and help reduce achievement gaps during the near- and long-term. The current TLDS and expertise for data management at CBER create a tremendous base from which the state can align requirements for data transfer, identify data elements and expand utility of the system statewide for informed policy analyses.

The near- and long-term results of the project will permit analyses that validate or refute the extent to which untoward conditions affect educational attainment and other life experiences when matched with student/teacher data about academic achievement. An interagency database built around TLDS will allow analysis of the effectiveness of programs on recidivism, post-prison pursuit of education, and ultimately, labor market outcomes like earnings and unemployment rates.

In addition to THEC and L&WD, agreements will be negotiated for relevant data sharing with these child-serving departments and agencies:

- Department of Children's Services (DCS)
- Department of Health (DOH)
- Department of Human Services (DHS)
- Department of Mental Health and Developmental Disabilities (DMHDD)
- Department of Correction (DOC)
- Bureau of TennCare (TCB)
- Tennessee Commission on Children and Youth (TCCY)

Lead responsibility for achieving data sharing agreements will reside with a policy analyst in the Governor's Office of Children's Care Coordination (GOCCC), serving as Governance Manager for the Project. GOCCC leads and facilitates cross-departmental coordination, multi-departmental collaboration, policy analyses and system reforms. It is charged with translation of science into policy.

The sequence and integration of the service aspects and conditions children experience are depicted in 6 (c) Timeline for Project Outcomes.

Opportunities for policy informed research are limitless under this model of multi-departmental and interagency information transfer. Constraints include federal and state confidentiality rules. However, constraints of FERPA are mitigated by a relationship with CBER, an established trusted third party contractor. HIPAA Business Associate agreements will be negotiated sequentially with DOH, TennCare, and DMHDD, which also has federal substance abuse laws to consider. The state will work within these constraints and others to contribute to a rich data base for analysis by sequencing the order in which agreements are negotiated from easiest to most difficult to achieve.

Multi-departmental data will reside at CBER, which shares fiber optic connectivity with TDOE, THEC, Office of Information Resources (OIR) and agencies depicted in *8 Appendix A3*. CBER is partnered with DOE as the external research organization for this project. CBER has developed other integrated data bases (including with L&WD, DHS, THEC and DOE) and has an extensive track record in conducting and supervising research projects including annual and long-term economic and fiscal forecasts for the Governor and the state; research on education issues and funding and related public service delivery; linkages between higher education and the economy.

Agreements among TDOE, child serving departments and CBER to collaborate on policy issues and data sharing will permit ability to determine, among other outcomes (1) best investments relative to IDEA Part C early intervention services, PreK and Child Care on different levels of academic achievements and how different methods of delivering education affect these outcomes; (2) how conditions and situations such as health care, foster care and home visitation services and other factors affect educational performance; (3) how, through information exchange, each department can perform its functions more effectively by

structuring its relationship to TDOE and Local Education Agencies to support children to achieve their highest potential; (4) how long-term contributions to education, health, and economic returns to the state differ among cohorts of discreet groups such as children in foster care, in children's special services, children eligible for child care subsidies, gifted children, and children in urban versus rural locations.

(4) Enhance Performance Across State Agencies: TLDS P-20, when linked to other agency data, will support improvements in program administration and policy, both within DOE and across state government in Tennessee. These improvements can reduce taxpayer costs, enhance service delivery, support program accountability, and promote better educational and workforce outcomes. Once completed, the integrated interagency database can help reshape the way government works in Tennessee.

Opportunities for improvement of program administration and program outcomes can be placed in four broad and potentially overlapping categories.

- (1) Administrative Improvements: State government agencies in Tennessee have migrated a substantial flow of data to electronic systems. But many paper legacies remain in the state's information and management systems, and these systems are not linked in a fashion to support administrative decision making. This project would overcome that obstacle.
- (2) Accountability: TDOE has two primary systems of public accountability. The first is TVAAS. The longitudinal database underlying TVAAS supports a linkage between teachers and students and enables identification of the educational value added to the student by the teacher. This system currently relies solely on school-level data. The premise of TVAAS is that background characteristics of a student—raw intelligence, family characteristics, peer influences and other factors—are stable and consistent and therefore do not affect changes in student performance from year to year, i.e., value added from the education system. In reality a child's personal and social circumstances are subject to ongoing change. For example, a third grader's parents might go on welfare, a parent might be imprisoned or the child might be placed in the custody of the state and then a foster home. Certainly these changing individual circumstances can be expected to affect a child's performance in school, and TLDS allows these other factors to be fully integrated into the value added model.

An interagency database built around TLDS will allow TVAAS to be recast to include information on the changing circumstances of a child. This will improve the accuracy of the system in evaluating teacher effectiveness. It will also allow identification of risk factors for students, enabling more effective interventions to promote student academic performance and wellbeing.

A second accountability system is the Report Card on Tennessee Schools, produced annually by DOE. This report, and its companion supporting resources on the Internet, includes state, district and school-level information on achievement, demographics, discipline and educator preparation. However, data are limited to PreK-12 education. There is currently

no counterpart report card for post secondary education, Department of Children's Services' schools and Youth Development Centers, Department of Correction education and training programs and other agency educational programs.

The project proposed here will enable development of a Statistical Abstract of Education in Tennessee that would encompass the full range of educational services provided by the state. This same reporting mechanism could utilize interagency data to summarize linkages between educational outcomes and other outcomes, including workforce status and utilization of public services. For example, what do graduates of Tennessee high schools earn relative to graduates from the state's community colleges and universities? How do unemployment rates for high school dropouts compare to unemployment rates for high school graduates? What is the educational attainment status of Tennesseans who utilize services from TennCare and Families First?

- (3) **Teacher Effectiveness and Student Growth:** Teachers are perhaps the most influential factor in affecting student performance. As noted above, TVAAS already gauges teacher performance. Linking TLDS to workforce and public service utilization outcomes can enrich the scope of TVAAS.
- (4) **Outcomes Assessment:** Education and child related services are costly to provide and returns to the state's investments in these services are not well known. An interagency longitudinal database will allow for rigorous examination of program effectiveness across state government in Tennessee. For example, DCS provides interventions and services ranging from foster care and adoption to schools, Youth Development Centers and health services. Other services to the same child might be provided through DHS and TennCare. Controlling for student and family/caregiver characteristics, how do these state services affect a child's educational outcomes and longer-term status in the labor market?

Another example is DOH and TennCare, which provide services to communities and families, including programs to reduce diabetes and promote physical fitness, and specific health care services to individuals within a family. These programs promote individual wellness, in turn facilitating participation in formal educational programs and the labor market. The effects of these services on educational investments and labor market outcomes can be assessed when coupled with data from DOE, THEC and L&WD.

The longitudinal database can also be used to examine the role education plays in affecting other outcomes. For example, research has shown that parental education, especially educational attainment of mothers, has an important bearing on child wellbeing. Interdepartmental data would allow analysis of the impact of maternal education, public service utilization and workforce status on infant mortality rates, vaccination rates, teen pregnancies, and take-up rates for programs like WIC and child special services.

The four core components of this project—enhanced content and utilization of the current sophisticated TLDS capacity by teachers, schools, and school districts; completion of TLDS to a

P-20 system; alignment of information from other child-serving departments with that of DOE to achieve TLDS 360, and enhanced performance across state agencies—will permit the state to move to a new level of competency relative to influences on student achievement. The project is a major puzzle piece contributing to the state’s Race To The Top proposal. It will support School Improvement Grants and the Teacher Incentive Fund. It will inform planning for Investing In Innovation when the RFA for that program is developed.

It corresponds to assurances of the State Fiscal Stabilization Fund. Relative to

- **Teacher Effectiveness:** The project will provide teachers with data dashboards that will provide not only standard educational metrics and value added assessment information but also information from other child serving agencies that influence a student’s ability to learn, generating a 360 degree view of the student.
- **Support of a P-20 System:** The project expressly links the current TLDS with THEC to answer the policy questions above that benefit both Education and Higher Education. TLDS will link L&WD’s programs such as data for Pell Grant Applicant Information, GED Programs, Work Force Training, Unemployment Insurance data, Adult Literacy Programs, Training Grants, English as a Second Language Training, and Tennessee Teens to Work data.
- **Standards and Assessments:** TLDS has an established history with TVAAS of providing multivariate, longitudinal analyses of every student’s entire set of achievement scores, which are widely used by teachers and throughout the education system. This project builds on the current TLDS and strengthens it.
- **Targeted Interventions:** By aligning data from the child-serving agencies with the TLDS to create a more comprehensive picture of student cohorts, schools will be better able to close achievement gaps among students and implement best practices.

Additionally, the project takes into consideration criteria for one of the stakeholder collaborators, Department of Health’s proposal to the Centers for Disease Control and Prevention Recovery Act funded program, “Communities Putting Prevention to Work”, the purpose of which is to promote broad-based policy, systems, organizational and environmental changes in communities and schools.

#### 6(b) Project Outcomes Related to System Requirements and Implementation

TLDS will integrate heretofore-scattered data silos to better connect teachers, principals and superintendants to data about their students, improve operations of DOE and participating agencies, advise education policy and management, and investigate the 360-degree-impact of education on lifecycle outcomes. These objectives require three major outcomes: (i) adaptive and secure data architecture (ii) rich, multidimensional data on students, teachers, and schools, and (iii) access platforms for local school systems, policymakers, researchers, and the public. Proposed products and features related to (i) through (iii) are outlined below, along with their contribution(s) to specific data system capabilities and elements. See section 6(c) *Timeline for Project Outcomes* and 8. *Appendix A4: Itemized Timeline by Outcome* for detailed timing of subtasks related to each outcome.

#### 6(b)(i) System Architecture Products and Features

TLDS architecture refers to the entire framework supporting integration, storage, and management of student data. Rather than construct architecture components around available

data, TLDS architecture will be an outcome in and of itself, designed to be forward-looking and adaptive to new data sources and collaborative opportunities with other information systems and states. TLDS architecture will receive and integrate data from multiple sources and information technology systems, and transform data into a foundation for reporting and research. Much of the architecture will be developed and implemented through Year 1, and TLDS will be ready to store integrated data early in Year 2. Some architecture elements may be modified as additional data is integrated throughout Years 2 and 3, with continuous improvement thereafter.

Contribution toward required data system capabilities and elements: prudent architecture design and implementation will lay the foundation for all data system capabilities and elements, particularly the internal quality and integrity of data.

1. Security features: before sensitive data are merged, security systems will be iteratively designed and tested for data receipt, storage, dissemination, backup, and recovery. Critical first steps will be to (1) identify best practices in other SDLs, and (2) advance those best practices with guidance from CBER, the Office of Information Technology at the University of Tennessee, SAS, Inc., and integrated health information systems currently being developed in Tennessee. Security will be continuously evaluated and improved throughout the life of TLDS.
2. TLDS functional requirements (product): TLDS directors, managers, and staff will define and document the necessary functions of TLDS.
3. Capital products: hardware and infrastructure will accommodate security needs, high-volume storage, and high-speed transfer. Servers and storage will be in place at DOE and CBER throughout development and operation phases, and will be upgraded as needed.
4. Data taxonomy, structure, and documentation features: TLDS staff and subcontractors will design structural components of the database itself in accordance with functional requirements and NCES standards and guidelines for LDS interoperability, metadata, taxonomies, and documentation.
5. Data import design features: TLDS staff and subcontractors will design and implement data import pathways, in accordance with taxonomies, data integrity controls, and governance rules.
6. System evaluation products: a web-based feedback application will connect data warehouse staff with intermediate- and end-users to support continuous improvement. This product will allow bug reports and other complaints to be reported and resolved systematically. Additionally TLDS management will oversee regular, internal reviews of architecture features, and solicit external reviews from stakeholders in local, state and federal organizations.
7. Internal audit features: audit procedures will be designed to seek, report, and correct likely errors in the data. Audits will be added or modified as additional data are incorporated.
8. Incoming data integrity features: Business Intelligence systems with existing LDS elements will be upgraded to enhance internal operations and ensure that audited and cleaned data are delivered to the broader TLDS. Data warehouse staff will interact with DOE, SAS, Inc., and participating agencies to improve data delivery mechanisms and the quality of incoming

data. Where possible, data integrity procedures, middleware, and metadata definitions will be implemented at the agency level. The Steering Committee (described in section 6(d)) will (1) determine the degree to which agencies' information technology can be efficiently adapted to meet TLDS data needs, and (2) determine the most efficient pathways for data transfer between agencies and TLDS

#### 6(b)(ii) Data Integration Products and Features

Data will be integrated in phases, following the resolution of security protocols and implementation of TLDS architecture (see *8. Appendix A3: TLDS Outcomes* for a stylized diagram of data inputs and outcomes; see section 6(c) and *8. Appendix A4 Itemized Timeline, By Outcome* for specific timelines.) During Phase 1, longitudinal data systems in service at DOE, CBER, SAS, Inc., and other partnering agencies will be merged to produce a P-20 longitudinal data system that meets and exceeds many required capabilities and elements of grant-funded data systems. This phase is expected to run through the first quarter of Year 2. During Phase 2, public service agencies with initial agreements to participate in TLDS (see *11. Appendix D-- Letters of Support*) will formalize data sharing agreements and begin contributing data to TLDS. Also during Phase 2, an advanced student identification system (referred to below as a master person index, or MPI) will be utilized to match individuals across otherwise irreconcilable datasets. MPI matches will complete the P-20 LDS and facilitate integration of Phases 2 and 3 data. The MPI and Phase 2 data will be integrated during Year 2. During Phase 3 and Year 3, data from additional agencies will be integrated pending finalization of data sharing agreements.

Contribution toward required data system capabilities and elements:

- Student-level longitudinal data from preschool through postsecondary education and into the workforce.
  - Link between students and teachers.
  - Teacher credentials, including experience, certification, and education.
  - Unique statewide student and teacher identifiers that mask sensitive, identifying information.
  - Student enrollment, demographic, and program participation information.
  - Student mobility and attrition information.
  - Annual test records for students.
  - Information on untested students.
  - Student-level course enrollment records and course grades.
  - Student-level college readiness (ACT) scores.
  - Student-level data on transitions to postsecondary institutions and postsecondary attainment.
  - Internal quality and integrity of data.
- Individual-level longitudinal data on public service utilization. These elements are beyond the scope of the required capabilities and elements but represent tremendous added value to Tennessee's current P-12 LDS and proposed Phase 1 P-20 LDS.

1. Phase 1: P-20 TLDS. Tennessee's existing LDS elements are housed in isolated information technology and governance systems, and no previous attempt has been made to integrate them into a substantially more valuable and complete LDS. During Phase 1, data from pre-K, K12, postsecondary, and workforce information systems will be merged within a secure and unified architecture, in accordance with a collaborative model of governance. Specific data features and products related to this Phase of TLDS development are itemized below.
  - Unique student identifier and masking features. TLDS will use standardized identifiers (state- and district-assigned student IDs, Social Security numbers), names, and unchanging demographic characteristics to link individuals' data longitudinally and across reporting units. Then, a unique identifier will be generated for each individual. This identifier will have no meaning and entail no privacy risk outside of TLDS. Following successful identification, some private data (including Social Security numbers, if applicable) will be masked.
  - Integrate existing longitudinal elements from DOE, CBER, TVAAS, and NCES to form a preliminary P-20 LDS (product). All data elements, unless noted otherwise, are expected to recur on an annual or more frequent basis.
    - Existing DOE data, all dating back to 2006: K12 student achievement, enrollment, demographics, and other available information (disciplinary, extracurricular, and college readiness, for instance) from the Education Information System (EIS) and Statewide Student Management System (SSMS); K12 teacher assignments and credentials from the Personnel Information Reporting System (PIRS); K12 teacher-student match.
    - Existing data at CBER: six unique datasets and surveys on child care and public welfare services, some dating back to 1996; teacher assignments and credentials dating back to 2001 from the CBER-assembled Teacher Education Data Warehouse (TED); postsecondary student data from THEC, representing all higher education institutions in the State (including public and private two- and four-year colleges and universities) and dating back to 1997; earnings and employment data from statewide Unemployment Insurance (UI) records, dating back to 1995. Note that multi-state collaboration is possible through external THEC and UI relationships.
    - Existing TVAAS data (maintained by SAS, Inc.): K12 student achievement, enrollment, and demographics, dating back to 1990; Teacher-student match for tested courses, dating back to 1990; ACT scores, dating back to 2000.
    - Existing NCES Common Core of Data: School- and district-level data on enrollment, demographics, achievement, attainment, and finance, with some fields dating back to 1986.
2. Phase 2: P-20 TLDS Enhancements
  - Develop and implement the Master Person Index (MPI). The MPI feature will improve on the Phase 1 identification system and expand the scope of TLDS to include data without Social Security numbers and other common identifiers. The MPI will permit the seamless integration of new data in Phases 2 and 3, and will provide robust validity checks of Phase 1 identifiers. The MPI will be developed by the State of Tennessee Office of Information Resources (OIR) simultaneously with development of TLDS.

- Integrate data from agencies with formal agreements to participate in TLDS. See *11. Appendix D--Letters of Support* and initial Project Charters. Anticipated highlights from Phase 2 agency data are described below. Actual Phase 2 data will be subject to final data sharing agreements and may include additional agencies not named below.
    - Department of Health: birth certificates, immunization records, and children’s special services.
    - Department of Human Services: free or reduced lunch, child care center quality, child support, and welfare beneficiary information
    - Department of Children’s Services: foster child indicator, foster case information, juvenile justice involvement and youth in transition data.
3. Phase 3: P-20 TLDS Enhancements (ongoing)
- Integrate data from additional agencies, pending formal agreements to participate in TLDS. Anticipated highlights from Phase 3 agency data are described below. Actual Phase 3 data will be subject to final data sharing agreements.
    - TennCare (Tennessee’s Medicaid program): enrollment and benefits for eligible children and families.
    - Department of Corrections: offense histories, recidivism and probation outcomes: GED outcomes while incarcerated, juveniles in the general correction population and offenders up through P-20.
    - Labor and Workforce Development: unemployment compensation payments.
    - Department of Mental Health and Developmental Disability: outcomes for early intervention programs and system of care enrollees.

6(b)(iii) Reporting and Research

TLDS, as proposed, will dramatically improve the depth, scope, and quality of data available to schools, Local Education Authorities (LEAs), the public, DOE, and partnering agencies. Business intelligence features and restricted access portals will be in place by the end of Year 2, and expanded to include additional data and public portals thereafter. In addition to operational efficiencies, TLDS will facilitate rigorous research and policy analysis. Research support features and TLDS access protocols will be in place by the third quarter of Year 3. Reporting and research outcomes, as well as supporting features, are described below.

Contribution toward required data system capabilities and elements

- Web-based access to detailed student data available for teachers, principals and superintendents.
- Enables exchange of data among agencies and institutions within the State and between States so that data may be used to inform policy and practice.
- Timely reporting to parents, teachers, school leaders, and the community at large.
- Facilitate *EdFacts* and State Fiscal Stabilization Fund reporting to the U.S. Department of Education

1. Business intelligence (BI) features:
  - Aggregation and access rules: Members of the TLDS Steering Committee (see section 6(d)) will negotiate aggregation and access rules between data sources and integrated data users. The scope and depth of data access will be user-specific and subject to data sharing agreements, aggregation rules, metadata definitions, and abundant security measures, all of which will be in strict accordance with FERPA, HIPAA, and other applicable laws. Aggregation rules and secure, user-specific access will be programmed and managed by the BI software vendor.
  - BI software is a critical layer between physical data and web-based portals. Current DOE BI systems were launched following the 2006 receipt of a Statewide Longitudinal Data System grant, #R372A05127. This software moved the State's longitudinal data system forward and is a valuable resource for Tennessee educators. Current BI systems, however, are inadequate to support the public and inter-agency products outlined in this application (see "Web-based Portals" below) since data are only available to two individuals within each Local Education Agency (LEA). Funds awarded under this grant will be used to (1) upgrade current DOE Oracle databases and (2) tailor state-of-the-art SAS, Inc. software to improve on the reporting capabilities of the existing BI system. These efforts will facilitate data exchange among agencies, within DOE, among LEAs, among schools, and between DOE and the public. A web-based portal is currently available through SAS for very limited data. The project will explore using this platform to expand dramatically data available to teachers, principals and superintendents throughout all LEAs in Tennessee.
  
2. Web-based portals (products): BI software will facilitate presentation-layer interfaces for schools, LEAs, the public, agencies, and DOE. End-user interfaces will be web-accessible dashboards to TLDS data. Currently, SAS, Inc. maintains secure portals to student test records, projections, and other TVAAS data. TLDS managers will leverage this resource to expand the accessibility and scope of current web-based portals.
  - Public portals: these portals will facilitate public reporting and improve the ease and accuracy with which families and community members can access aggregate education information. Products will include statistical abstracts and interactive tables on school- and district-level enrollment, socioeconomic indicators, achievement, personnel, and finance.
  - Agency portals: secure data will be available to participating agencies (subject to data sharing agreements). For example, a foster child's case manager at the Department of Children's Services will be able to determine if a child's education records followed him to his new school. These portals will generate inter-agency synergies, improve efficacy of public service provision, and add tremendous value to Tennessee's existing longitudinal data systems. SAS, Inc. will host webinars to train agency personnel on the effective use of TLDS dashboards.
  - School, LEA, and DOE portals: secure data will be available to school system administrators, principals, teachers, and families. Portals will be designed to aid school and district operations. In-service TVAAS dashboards developed by SAS, Inc. are user-friendly interfaces designed to deliver timely, important data to educators. TVAAS

restricted-access portal is a reasonable, cost effective mechanism for delivery of the 360 student view for educational uses. Thousands of Tennessee teachers and principals already have secure, responsibility-specific TVAAS accounts with the ability to drill down to a fine level of detailed student information. The state has committed to increase TVAAS access to all appropriate school personnel by fall 2010. This expansion will be concurrent with TLDS development. Missing from existing TVAAS delivery is access to student/family data from other state agencies that should trigger additional educational support for students whose academic success is threatened or potentially compromised by unexpected events occurring outside of education. TVAAS/TLDS dashboards will include data on public service utilization (subject to data sharing agreements), and improve educators' responsiveness to student circumstances. SAS, Inc. will host webinars to train school, LEA, and DOE personnel on effective use of TVAAS/TLDS dashboards. Ultimately, these portals will communicate "early warning" flags to LEA and school personnel when at-risk behaviors (low attendance, accumulating suspensions, low achievement, and so forth) collectively signal the need for intervention and support.

3. Research support features: the research support layer will be designed to securely access micro-data for research purposes. The Steering Committee, in partnership with CBER and data warehouse staff, will develop research access protocols (including procedures to mask private data), evaluate incoming research proposals, and monitor approved research projects, in strict accordance with FERPA, HIPAA, and other applicable laws.
4. Research reports and policy analysis (products): TLDS, as envisioned in this application, will trace a new frontier for the design and implementation of longitudinal data systems. TLDS will support a wealth of research questions currently precluded by data limitations. DOE and CBER researchers will produce reports that guide policymakers and administrators in identifying and adapting successful education delivery systems. Studies will analyze, for instance, determinants of teacher quality, the value of effective teachers, and short- and long-term efficacy of education policies like teacher performance pay, charter schools, as well as any innovations supported by Race To The Top funds. Effectiveness will be measured by K12 outcomes like test scores, high school attainment, and changes in critical achievement gaps, and also by adult outcomes like college attainment, employment, earnings, incarceration, and utilization of health and welfare services.

#### 6(c) Timeline for Project Outcomes

Timelines and primary responsibilities for outcomes and subtasks outlined in 6(b)(i) through (iii) are described below. See *8. Appendix A4 Itemized Timeline, by Outcome* for further details, including specific tasks, dates, and shared responsibilities. Y1-Q1 refers to the beginning of year 1, quarter 1 of three-year window over which funds will be allocated. Year 1, quarter 1 will commence the calendar month following announcement of grant awards.

During Y1-Q1 and Q2, personnel will be hired and a data architecture subcontractor will be identified. These resources will contribute to all outcomes and tasks. Personnel will be hired by Co-Project Directors at TDOE and CBER. The subcontractor's main function will be to aid in design and implementation of a secure and flexible system for importing, storing, and managing longitudinal data from disparate sources. The subcontractor will also serve as a resource during initial waves of data integration and reporting. Also during Y1, the Steering Committee will be established, bringing together representatives from each partner agency and TLDS staff. Representatives will have expertise in both agency-level administration and data analysis. Anticipating frequent meeting during the development stage of TLDS, this committee will meet at least twice yearly to coordinate data sharing and acquisition agreements, evaluate internal and external research proposals, discuss opportunities for inter-agency cooperation, and provide feedback and guidance to TLDS staff.

#### 6(c)(i) System Architecture Timeline

1. Security features. CBER Project Manager 1 and a data architecture subcontractor will oversee the development, testing, validation, and continuous improvement of necessary infrastructure and software security measures. All efforts will be made to meet and exceed federal and state security requirements. Project Manager 1 will serve as the liaison between the subcontractor and TLDS leadership and will be directly responsible for all products produced by the subcontractor. These security features will be planned and designed during Y1-Q1 and Q2, fully implemented by the subcontractor during Y1-Q3 and Q4, and continuously maintained and evaluated beginning in Y2-Q1.
2. TLDS functional requirements. All TLDS directors and managers will plan forward-looking functional requirements and capabilities of the TLDS. Leadership will identify the data needs of end-users (the public, DOE, participating agencies, and researchers) and plan how the TLDS will meet those needs. These functional requirements will be planned during Y1-Q1 and Q2.
3. Capital products. Co-Project Directors and Project Manager 1 will be responsible for acquiring, evaluating and maintaining all capital products. Initial capital products for secure database locations at DOE and CBER will be in place during Year 1, with additional capital products for the partner agencies acquired during Years 2 and 3. The evaluation and maintenance of all capital products may begin in Y2-Q1, after they are in place and fully operational at CBER and DOE.
4. Data taxonomy, structure, and documentation features. Project Manager 2 will be directly responsible for these features, with consultation and assistance provided by the architectural subcontractor. Project Manager 2 will identify best practices and standards during Y1-Q1 and Q2, and implementation and documentation may begin at Y1-Q3.
5. Data import design features. Data import functionality will be designed by the subcontractor; responsibility will lie with Project Managers 1 and 2. These features will be designed during Y1-Q3—Y1-Q4, with testing and evaluation occurring during Y2-Q1—Y2-Q2.
6. System evaluation products. System evaluation will be a collaborative effort of the Co-Project Directors, Project Managers, and data architecture subcontractor. These personnel will ensure that the system satisfies the needs of all end users. Data warehouse personnel will develop a web-based feedback application for bug reports and other complaints during

Year 2, commensurate with the integration and use of Phase 1 and 2 data. Project Manager 1 will regularly evaluate the TLDS architecture and security system, beginning in Year 2 and ongoing. The DOE Co-Project Director will be responsible for coordinating external evaluations, in accordance with state and federal regulations.

7. Internal audit features. Project Manager 1, in collaboration with the data architecture subcontractor and data warehouse personnel, will be responsible for designing data validation and audit processes to seek, report, and correct errors in the data. Audits will be developed beginning in Y1-Q3, simultaneously with the unique student identification system. Additional validation processes will be incorporated on an ongoing basis as the scope of the TLDS expands.
8. Incoming data integrity features. This subtask requires collaboration between CBER, DOE, Project Manager 2, and the Governance Manager. TLDS managers will determine the most efficient pathways for high-quality data delivery, and recommend adaptations to source agencies' information technology systems. Adaptations to DOE Oracle systems will be an important first step, and is expected to commence in year 1, quarter 1. Features to improve incoming data from other sources will be implemented from the beginning of architectural design in Y1-Q3, and will be ongoing.

#### 6(c)(ii) Data Integration Timeline

##### 1. Phase 1: P-20 LDS

- Unique student identifier and masking features: develop algorithms to match students across Phase 1 data files. Several LDS elements spanning pre-K through the workforce are currently in a common location at the University of Tennessee CBER. Additional P-12 student-level data are maintained by DOE and SAS, Inc. Beginning in Y1-Q3, data warehouse personnel will develop matching algorithms that take advantage of Social Security numbers and other in-service serial numbers identified by the Agency Technical Coordinator. Then, data warehouse personnel and the subcontractor will create a single, global identifier that is not traceable to individuals. This sub-task is coupled closely with security features. All confidential data with no TLDS purpose outside of matching will be stored in a separate, secure location. We expect this initial identification algorithm will have broad, but not universal coverage. The Master Person Index (described below) will allow for universal coverage of the unique student identification system.
- Integrate existing longitudinal elements from DOE, CBER, TVAAS, and NCES to form a partial P-20 LDS. CBER will house the TLDS data warehouse. By Y2-Q1, the secure architecture and student identification systems will be in place. At this time, Project Manager 2 will oversee the integration of all available data and the formation of the TLDS.

##### 2. Phase 2: P-20 LDS Enhancements

- Develop and implement the Master Person Index (MPI). The DOE Co-Project Director, OIR, and outside vendors will oversee the development of the MPI through the end of Y1. The Architecture Manager will communicate the limitations of Social Security numbers and other in-service student identifiers to the State of Tennessee Office for Information Resources (OIR), beginning in Y1-Q3. Project Manager 2 and OIR will jointly

integrate the MPI into the TLDS between Y2-Q1 and Y2-Q2. The MPI will reconcile unmatched Phase 1 data and lay the foundation for the integration of Phases 2 and 3 data. The MPI will be adapted or expanded commensurate with its value added, as determined by the Architecture Manager and Technical Director near the end of Y2.

- Integrate data from agencies with formal agreements to participate in TLDS. Through the first half of Y2, TLDS leadership, along with the Governance Manager and Steering Committee, will formalize data acquisition and sharing agreements with selected agencies (including the Department of Children's Services, the Department of Health, and other agencies listed in section 6(b)(ii)2). Project Manager 1, with consultation from OIR and the subcontractor, will merge Phase 2 agency data (via MPI) with TLDS by the end of Y2

### 3. Phase 3: P-20 LDS Enhancements

- Integrate data from agencies with formal agreements to participate in TLDS. TLDS leadership, along with the Governance Manager and Steering Committee, will formalize data acquisition and sharing agreements with identified Phase 3 agencies through the end of Y2. This task will be ongoing as more agencies, organizations, and cross-state collaborators are recruited, and as the data requirements of partner agencies evolve. Project Manager 1, with consultation from OIR the subcontractor, will merge Phase 3 agency data (via MPI) with the TLDS by the end of Y3-Q2.

### 6(c)(iii) Reporting and Research Timeline

1. Business intelligence (BI) features. All DOE and CBER directors and managers and the Steering Committee will be responsible for planning functional requirements of BI interfaces by the end of Y1-Q3. Existing SAS, Inc. TVAAS interfaces will be expanded to include richer student data from DOE, CBER, and participating agencies. The Governance Manager and CBER Co-Project Director will plan and document business rules for aggregation, access, and sharing, starting in Y2-Q1 and ongoing as additional agencies are recruited to participate. SAS, Inc. will program aggregation and access rules, beginning in Y2-Q1, and ongoing as additional data is integrated. Data warehouse personnel will connect BI layers to the TLDS, beginning with integrated Phase 1 data in Y2-Q1, and then with Phases 2 and 3 data throughout Y3. Project Manager 2 will test and evaluate BI tools throughout Y2 and Y3.
2. Web-based portals. Projects Managers 1 and 2 and SAS, Inc. will oversee development, testing, and validation of web-based portals for TLDS data access. The degree of allowed disaggregation will be determined by user class (public, school, LEA, DOE, or qualified employees of the partner agencies), security clearance, and user needs. Portal interfaces will be tested and validated before launch. Dashboards for schools, LEA administrators, and DOE personnel will be launched following successful integration of Phase 1 data. At that time, TLDS managers will develop an early warning algorithm to identify at-risk students using multiple dimensions of student information (attendance, achievement, disciplinary actions, and so forth). TVAAS/TLDS dashboards will be used to notify school leaders of at-risk students. Additional dashboards for qualified agency personnel will be launched following the incorporation of Phase 2 and 3 data. SAS, Inc. will host webinars to introduce qualified personnel to the new TVAAS/TLDS dashboards and early warning notifications. The

first wave of webinars will target school, LEA, and DOE portal users, and the second wave will target agency portal users.

3. Research support features. TLDS leadership and managers will determine functional requirements of a research support layer connecting TLDS data to researchers and policy analysts in Y1-Q3. This class of end-user requires a fine level of detail for data analysis; accordingly, TLDS leadership, Governance Manager, and Steering Committee will plan and document research access procedures and research-specific security measures by the end of Y2-Q2. Research support layers (i.e., statistical packages and supporting features) will be selected in Y2-Q1 and adapted to support access and security protocols.
4. Research reports and policy analysis. By Y2-Q3, Phase 1 and some Phase 2 data will be integrated into the TLDS, the MPI will be operational, and the TLDS will be a valuable resource for research. At this time, the CBER Co-Project Director and Steering Committee will begin evaluating projects requiring access to a finer or broader level of detail afforded by web-based portals. Approved projects will be monitored, and final reports will be collected in a restricted-access library of TLDS research.

#### 6(d) Project Management and Governance Plan

Project location: The project is located within TDOE with Co-Project Directors (CPDs) and support staff located in TDOE and at CBER, a trusted third party already in an established relationship with TDOE, THEC and several other state agencies. This is a collaborative project that goes beyond typically delineated boundaries. DOE's existing LDS Governance, described below and depicted in *8. Appendix A5*, and CBER are responsible for approval and oversight of project activities.

Governance Structure: A Steering Committee chaired by the Commissioner of DOE, empowered to set policy for all interagency components of TLDS, will be composed of the Commissioner or her designee from each partner agency, TDOE and CBER Co-Project Directors, and Finance and Administration, *8. Appendix A5*. The Steering Committee will meet frequently during the development stage of TLDS, then approximately twice yearly once the database has been established. The Steering Committee will coordinate with other interagency policy boards, including the one currently being established for e-health, *8. Appendix A6*.

A Work Group will be appointed composed of one policy and one IT representative from each member of the Steering Committee. The Work Group will be charged with implementing policy set by the Steering Committee, be responsible for evolution of the database as available data and needs change over time, and make decisions within policy set by the Steering Committee on specific access to the database and on what data can be made available to which users. The Work Group will organize functional work areas focused on specific issues such as security protocols, how and when data are to be updated, and performance standards for the participants, among others.

The current TDOE Data Management Committee will be retained as key informants in the Governance Structure as they are currently organized. Areas represented on Data Management Committee are Office of Federal Programs; Field Service Centers/State Schools;

CCD, Non-Fiscal, Curriculum and Instruction; Financials; Career and Technical Development; Office of Assessment; Professional Development; Special Education; Department of Early Childhood; English Language Learners; Free and Reduced Lunch; Highly Qualified; Graduation Rate; Discipline/Dropout; Annual Yearly Progress/Report Card; and Safe and Drug Free Schools.

The CPDs will be responsible for the project's operation during the period of the grant, sustained in DOE by the Department's Chief Analytic Officer and at CBER through integration of the databases developed during the grant into ongoing operations of the Center.

Project Management Controls: DOE and CBER CPDs will meet frequently to assure these functions occur timely:

- DOE's CPD is responsible for enhancing the P-12 to its full potential and expanding TLDS to a complete P-16/P-20 through the existing Governance Structure, *8. Appendix A5*, supported by a Database Administrator responsible for LDS database transactions and reports and a research analyst (Yr 1, Q1, Q2 and beyond). Additionally, in collaboration with a policy analyst in the Governor's Office of Children's Care Coordination (GOCCC), who serves as Governance Manager for the project, the DOE CPD is responsible for initiating multi-departmental data acquisition agreements (Yr 1, Q3, Q4). Staff of the GOCCC is responsible for developing and coordinating the Steering Committee (Yr 1, Q1 and beyond) and developing and monitoring formal Memoranda of Understandings among the departments, CBER and DOE.
- CBER's CPD is responsible for the architecture for the project to be developed by a qualified subcontractor, which will include acquisition of the hardware, development of the software and filling of the database with data from the many partner agencies.

CBER will have two Project Managers (PMs) who will have day-to-day responsibility in coordination with TDOE for different aspects of database development. One PM in CBER will take responsibility for development of software and acquisition of hardware (Yr 1, Q1, Q2) and testing and evaluation (Yr 1, Q3, Q4). PM1 will work closely with the qualified subcontractor who designs and builds the database to ensure the architecture is consistent with Tennessee's needs, allows highly functional and efficient access to appropriate data and analysis and can be efficiently maintained and updated once it has been developed. PM1 will also work closely with partner agencies to ensure they have appropriate hardware and software to upload data seamlessly into TLDS and to download data and analysis in an appropriate format to facilitate usefulness for partner agency operations and analyses. PM1, together with her counterpart in TDOE, will serve as the primary advisors to partner agencies on solving hardware and software problems. This person will serve as the Architecture Manager (Yr 1 and beyond).

The second Project Manager in CBER will take responsibility in cooperation with TDOE for data linkages with partner agencies. PM2 will work with partner agencies, and particularly with the GOCCC Governance Manager in obtaining partner agency agreements on what data are to be included in TLDS and who has access to the data. PM2 will represent CBER in the Work Group to ensure smooth, unimpeded communications on implementation of the governance plan. Further, PM2 together with his or her counterpart will be accountable for developing clear

understanding of the data being placed into TLDS, data cleansing and internal audit for all partner agency data, and a data dictionary that provides a consistent set of definitions across data retrieved from partner agencies so the resulting product can be reliably and consistently matched across underlying data sets (Yr 1, Q3, Q4 and beyond).

A set of academic advisors will work regularly with the core TDOE and CBER project staffs to ensure the data and architecture are designed most usefully for implementation in partner agencies' operations and for analysis of public policy and education outcomes and methods. Further, the academic advisors together with TDOE will develop the initial public reporting on education in Tennessee and on how education interacts and interfaces with other key public policy investments including in health, correction, higher education, and children's services. Academic advisors will come from multiple backgrounds including economics, geography, and accounting.

Adherence to project timelines and budgets will be reported monthly to the DOE Commissioner and Executive Management Team and to CBER's leadership.

Project Partners: The other partner agencies in the project are SAS, OIR, the Departments of Children's Services, Health, Human Services, Mental Health and Developmental Disabilities, Correction, Labor & Workforce Development, THEC, TCCY and TennCare Bureau. Initial Project Charters, included in *11. Appendix D*, articulate commitments for implementation by the partner agencies. Memoranda of Understandings will be formalized during the period of the grant.

Input of teachers and other educators will be sustained through input from and feedback to the District Technology Advisory Committee, extant. In addition, the District Technology Advisory Committee will include representatives of model Teacher/Student IT projects planned or underway in Memphis, Nashville, Knox County and Greeneville Tennessee.

Training and Technical Assistance: Ongoing and sustained training across education sectors is vital to TLDS. If we do not examine and analyze our data we will have wasted millions of dollars on a technical infrastructure and be unable to determine which school courses prepare students for higher education. The overall scope of training will attend to consistent coordinated training for LEAs, Administrators, Counselors, interagency personnel and other child caring personnel who hold appropriate security identification for student data access. These trainings will address needs anticipated over the next five years and beyond, as the State of Tennessee develops a broad capacity to respond to students at risk of, in, or emerging from crises.

Types of Training: The types of training that will be delivered include: Conference trainings at the Annual Superintendents conference, the spring and fall attendance conference, the Annual Teachers Annual Tennessee Educational Technology Conference, web portal training and webinars training.

1. FERPA Rules and Regulations;
2. The Data Elements of the TLDS;
3. Data use for best practices;
4. Data use for student improvement and analyses;
5. Data use for effective teaching; and
6. Data use for curriculum changes/modifications

Web Portal training will be available for teachers, administrators, counselors and school board members and legislators who hold appropriate security permissions. The intent is to reach multiple stakeholders in the education language that they understand. This site will include a data sharing area for dialogue. It will include regular case studies of best practice and lessons learned. It will also have secure portals for authorized users to access the state's longitudinal data system. The web portal will support on demand personalized training which will be used for Professional Development.

Letters of support from all partners and initial Project Charters, as appropriate, are included in *11. Appendix D*.

#### (e) Staffing

Staff support for project and Governance structure for the project is comprised of (1) the DOE Co-Project Director, DOE's Chief Analytic Officer, responsible for enhancing P-12 and expanding to P-20; 2 Data Base Administrators responsible for, but not limited to, the design, implementation, maintenance and repair of DOE's student longitudinal database, to include installation of new hardware/software, security administration, data analysis, database design, data modeling, optimization and performance analysis and tuning; 2 research analysts responsible for providing expert analysis and analytical skills to assess educational performance from teacher to student, student to school, school to district, district to district and LEA to LEA for Tennessee students; and 1 full time administrative support staff responsible for maintaining documentation about the project, timely communications among the partners, and related organizational support;

(2) the CBER Co-Project Director responsible for managing development and operation of TLDS in collaboration with TDOE; Project Manager 1 responsible, in conjunction with a qualified subcontractor, for development of software and acquisition of hardware and for hardware and software problem solving with project partners; Project Manager 2 responsible for data linkages with partner agencies, protocols for data, cleansing, and internal audit, development of data dictionary, and representing CBER in the Work Group; academic advisory staff (one full time equivalent per year), and one support staff; and

(3) one GOCCC policy analyst, the Governance Manager, responsible for multi-departmental project collaboration.