

# **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 # R384A100023**

Closing Date: NOV 19, 2009

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**Application for Federal Assistance SF-424**

Version 02

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

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

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

**State Use Only:**

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

**8. APPLICANT INFORMATION:**

\* a. Legal Name: Wyoming Department of Education

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
830208667	809872336

**d. Address:**

* Street1:	2300 Capitol Avenue
Street2:	Hathaway Building, 2nd Floor
* City:	Cheyenne
County:	Laramie
State:	WY
Province:	
* Country:	USA
* Zip / Postal Code:	82002

**e. Organizational Unit:**

Department Name:	Division Name:
	Information, Data and Technical Services

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

Prefix:	Ms.	* First Name:	Meredith
Middle Name:	J		

\* Last Name: Bickell

Suffix:

Title: Information, Data and Technical Services Supervisor

Organizational Affiliation:

Wyoming Department of Education

\* Telephone Number: (307)286-0419 Fax Number: (307)777-6234

\* Email: MBICKE@EDUC.STATE.WY.US

**Application for Federal Assistance SF-424**

Version 02

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

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**10. Name of Federal Agency:**

U.S. Department of Education

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

84.384A

CFDA Title:

Statewide Longitudinal Data System Recovery Act Grants

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

ED-GRANTS-072909-001

Title:

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

**13. Competition Identification Number:**

84-384A2009-1

Title:

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

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

Wyoming's Enterprise Education Information System (LDW19) Project

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: WY-001

\* b. Program/Project: WY-001

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

**Attachment:**

Title :

File :

**17. Proposed Project:**

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

\* b. End Date: 12/31/2013

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

a. Federal	\$ 13183951
b. Applicant	\$ 0
c. State	\$ 3907410
d. Local	\$ 0
e. Other	\$ 0
f. Program Income	\$ 0
g. TOTAL	\$ 17091361

**\* 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 9/11/2009.

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: Ms. \* First Name: Meredith  
Middle Name: J  
\* Last Name: Bickell  
Suffix:

Title: Information, Data and Technical Services Supervisor

\* Telephone Number: (307)286-0419 Fax Number: (307)777-6234

\* Email: MBICKE@EDUC.STATE.WY.US

\* Signature of Authorized Representative: \* Date Signed:

**Application for Federal Assistance SF-424**

Version 02

**\* Applicant Federal Debt Delinquency Explanation**

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



U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization: Wyoming Department of Education

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

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

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

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

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

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

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

Period Covered by the Indirect Cost Rate Agreement: From: 7/1/2008 To: 6/30/2011 (mm/dd/yyyy)

Approving Federal agency: [X] 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:

[X] 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:  
Wyoming Department of Education

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

**SECTION B - BUDGET SUMMARY**

**NON-FEDERAL FUNDS**

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	\$ 123,390	\$ 123,390	\$ 123,390	\$ 0	\$ 0	\$ 370,170
2. Fringe Benefits	\$ 42,570	\$ 42,570	\$ 42,570	\$ 0	\$ 0	\$ 127,710
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	\$ 1,097,898	\$ 1,097,898	\$ 947,898	\$ 0	\$ 0	\$ 3,143,694
7. Construction	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
8. Other	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
9. Total Direct Costs (lines 1-8)	\$ 1,263,858	\$ 1,263,858	\$ 1,113,858	\$ 0	\$ 0	\$ 3,641,574
10. Indirect Costs	\$ 92,262	\$ 92,262	\$ 81,312	\$ 0	\$ 0	\$ 265,836
11. Training Stipends	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
12. Total Costs (lines 9-11)	\$ 1,356,120	\$ 1,356,120	\$ 1,195,170	\$ 0	\$ 0	\$ 3,907,410

## 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:** Meredith J Bickell

**Title:** IDT Services Supervisor

**Date Submitted:** 12/03/2009

### 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 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: Meredith J Bickell Title: IDT Services Supervisor Applicant: Wyoming Department of Education Date: 12/03/2009	
<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**

Wyoming Department of Education

**PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE**

Prefix: Ms.      First Name: Meredith      Middle Name:  
Last Name: Bickell      Suffix:  
Title: IDT Services Supervisor

Signature: \_\_\_\_\_      Date: 12/03/2009

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

**1. Project Director:**

Prefix:      \* First Name:              Middle Name:              \* Last Name:              Suffix:  
Ms.          Meredith                      J                              Bickell

Address:

\* Street1:          2300 Capitol Avenue  
Street2:            2nd Floor  
\* City:              Cheyenne  
County:            Laramie  
\* State:            WY\* Zip / Postal Code: 82002 \* Country: USA

\* Phone Number (give area      Fax Number (give area  
code)                              code)  
(307)286-0419                      (307)777-6234

Email Address:

MBICKE@EDUC.STATE.WY.US

**2. Applicant Experience**

Novice Applicant                       Yes               No               Not applicable

**3. Human Subjects Research**

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

Yes               No

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

Yes      Provide Exemption(s) #:

No      Provide Assurance #, if available:

**Please attach an explanation Narrative:**

**Attachment:**

Title :  
File :

# Project Narrative

## Project Narrative - Project Abstract

### Attachment 1:

Title: **WY-LDW19 Project Abstract Pages: 1** Uploaded File: **C:\Documents and Settings\mbicke\Desktop\WY-LDW19\_ProjectAbstract.pdf**

## **Project Abstract**

### **Wyoming's Enterprise Education Information System (LDW19) Project**

The utilization of data is important to everyone: parents, teachers, policymakers and administrators. The driving factor behind all data collection is the concept that the data are collected and analyzed, reports are produced, and decisions affecting student learning are made based on the accuracy of the data. Wyoming's current statewide longitudinal education data system must be enhanced to meet this demand. The long-term goal for the WDE's statewide longitudinal data system is a sustainable enterprise education information system. To achieve this, Wyoming needs to fully link longitudinal student records to the postsecondary institutions, standardize and update our data collection methodology, decrease the data-reporting burden to the local school districts, expand user access for data reporting and offer tools and training for all users. The WDE's proposed system will be the unified data source empowering an information culture focused on continuous improvement. The system has been named LDW19. The "19" is a direct reflection of Wyoming's commitment to the 12 essential elements outlined in the America COMPETES Act plus the 7 required capabilities of this grant application.

Wyoming seeks grant funds to produce five desired outcomes:

1. **Creation of a longitudinal data store, operational data store, and reporting data mart derived from user needs.** Our data mart will emphasize ease of access and usability of the data held within the data store. This will increase the capacity of the WDE to distribute data, thereby further reinforcing the need for and value of the longitudinal data system.
2. **Enhancement of the intrastate data collection and reporting mechanism.** This enhancement will improve the speed and accuracy of data collections. Time burden to local school districts will be decreased and federal and public reporting will be more efficient. It will ensure security for access to data for research to improve student academic achievement and close achievement gaps.
3. **Successful deployment of a statewide assessment data analytical tool.** An assessment data analytical tool will generate information to support and justify teachers' educational decisions and will help document evidence of teaching effectiveness.
4. **Linkage between the WDE P12 data and postsecondary data sets.** The ability to link records over time and between institutions improves the quality of information used to make decisions affecting student learning. Transitions from one school to another must be analyzed to support the improvement and availability of educational services.
5. **Successful deployment of a statewide early dropout prevention data analytical tool.** The first step toward an effective dropout prevention strategy involves tracking and analyzing basic data on which students are showing early warning signs of dropping out. In-depth analysis at the individual level, as well as the community level will provide a complete picture of the challenges faced by today's students.

LDW19 will bring to fruition WDE's vision of an enterprise education information system.

# Project Narrative

## Project Narrative - Project Narrative

### Attachment 1:

Title: **WY-LDW19 Project Narrative** Pages: **28** Uploaded File: **C:\Documents and Settings\mbicke\Desktop\WY-LDW19\_ProjectNarrative.pdf**

**Project Narrative**  
**Wyoming’s Enterprise Education Information System (LDW19) Project**

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**Need for Project**

The utilization of data is important to everyone; parents, teachers, policymakers and administrators. The driving factor behind all data collection is the concept that the data are collected and analyzed, reports are produced, and the information is analyzed from which informed decisions are made. The ability for this to impact student learning rests on the back of accurate data and being able to link multiple types and sources of data to create better information to be used in making superior decisions. Wyoming’s longitudinal data system has done a great job of automating the data collection and cleansing process, but must now be enhanced to meet end-user demand. The long-term goal for the Wyoming Department of Education’s (WDE) statewide longitudinal data system is a sustainable enterprise education information system that supports stakeholder decisions with high-quality information. To achieve this, Wyoming needs to strengthen, expand, and enhance its information system. With grant funding, Wyoming will be able to:

- Link longitudinal student records to the postsecondary institutions and employment outcomes;
- Standardize and update data collection methodologies;
- Decrease the data reporting burden of the local school districts and postsecondary institutions;
- Expand user access for data reporting; and
- Offer tools and training for all users.

Users would extend from university chancellors to first grade students to the mother of a high school student to a seventh grade science teacher.

Our proposed enterprise education information system will be the unified data source empowering an information culture focused on continuous improvement for the Wyoming Department of Education in its evaluation and support systems, Wyoming’s classrooms, schools and school districts, Wyoming’s postsecondary institutions, and policymakers and the public. With funding from the Institute for Education Sciences through the American Recovery and Reinvestment Act, Wyoming will be able to partner its developing longitudinal information system with expanded participation with the Learning Exchange and Resource Network (LEARN) Consortium to be a leader in education improvement and excellence.

➤ **Summary of Current Status**

The WDE has implemented the following components for the collection, storing, and reporting of data without receiving any federal grant funding:

- The WDE data warehouse (DW3) that contains the capacity to store compliance and longitudinal data sets.

- The Wyoming Integrated Statewide Education (WISE) Data System and the Wyoming Transcript Center, which provide a secure, standard infrastructure and protocols to submit student-level data to the WDE. This infrastructure uses modern virtualized infrastructure components and the School Interoperability Framework (SIF) specification.
- The Wyoming Education Fusion portal provides a secure centralized location for access, authentication and authorization services to enable sharing resources and data back to the school districts and colleges.

The WDE desires to comply with both the letter and spirit of the America COMPETES Act. While it may appear from the November 2009 survey by the Data Quality Campaign that Wyoming is well on its way to full compliance and even ahead of a number of other states, additional efforts are critical for ultimate success and full compliance. The current tools for analyzing and reporting longitudinal data lag the industry. Resources, technical capacity, and even additional infrastructure are required to achieve the intent of the Congressional mandates.

### ➤ *Wyoming's Education Data System Components*

#### **Wyoming Education Data Warehouse (DW3)**

The WDE has an established operational data warehouse in place since 1989 called DW3. State funding has allowed the WDE to obtain the latest technology, both hardware and software, but has not allowed for expansion. Statewide school district staff record identifiers have been in place since the beginning. The WDE phased in statewide student record identifiers in 2005. Protocols have been established to protect personally identifiable student and staff records and to control access, authentication, and authorization.

DW3 has well-defined data elements and was established to track and report compliance data, but has been expanded to support key data elements for performance measures related to the Wyoming Public Education and Wyoming Department of Education Strategic Plan. The plan calls for the WDE and school districts to improve student performance in third grade reading proficiency and eighth grade math proficiency, and to increase attendance and graduation rates. DW3 enables the WDE to examine student progress and outcomes over time, but is limited to accredited public P12 schools and Hathaway Scholarship Program recipients. The WDE is in its infancy stages of linking student and teacher records. A small percentage of our school administrators have begun to link teacher identifiers with their specific teachers and students. Implementation of the proposed statewide longitudinal data system will allow collection and analysis of teacher certification and preparation data with student data.

Funding from the Institute for Education Sciences (IES) under the American Recovery and Reinvestment Act (ARRA) will support the development of elements for a standardized teacher evaluation system that will use student performance to contribute to an overall teacher/administrator evaluation system. Furthermore, while the WDE does have the ability to match student records between the P12 and postsecondary education systems, matching these student records is challenged by technical complexities, limits on populated fields, and systemic limits on resources and the capacity to communicate between Wyoming's P12 and higher education data systems. Although the current system technically possesses many of the key elements generating robust, useable analyses from the existing data structure, it is inefficient and labor intensive.

### **Wyoming Integrated Statewide Education (WISE) Data System**

The WDE is its final year of implementing the WISE Data System, a system of standards and procedures set up to acquire, organize, and report education data. The primary goal of the WISE Data System is to collect, certify, and transform school district data into standardized data sets and to begin horizontal integration and vertical reporting across Wyoming's school districts for the purposes of cleaner and more reliable data. The WISE Data System uses the SIF protocol and has been focused on establishing a system for sharing and reporting data sets that are stored at local school districts in their internal software packages.

Through the WISE Data System procedures, school districts are able to create significantly more consistent and reliable data that are submitted vertically to the WDE into DW3 for statewide reporting and that are used by the districts and schools as they move core data records horizontally between their local software applications to guide continuous improvement. The second goal of the Wyoming Public Education and Wyoming Department of Education Strategic Plan is to ensure efficient and effective operations. There is a need to return data back to the districts. This return of data would avoid duplication of effort and move beyond the existing one-way vertical data path. Also in support of effective and efficient operations, the WDE will work with school districts to develop a common set of functional requirements and standards for Student Information Systems. These standards will be aligned to the data that the WDE collects.

Efforts will be made to support our Bureau of Indian Education (BIE) schools. The WDE will provide professional development for data entry and reporting. We will recommend their system to be SIF compliant in order for the WDE to support data reporting at the same level as our public schools. Our State Superintendent of Public Instruction has said many times, "I believe in these students...I believe they can achieve at the same level as all students." The goal is to allow the tracking and linkage to expand the WDE support and reporting as part of the statewide effort. The WDE believes this will require a transformation in the way all vendors and agencies participate together.

### **Wyoming Transcript Center (WTC)**

The WTC was established in 2006 allowing for the secure transfer of electronic transcripts. Transcripts are managed by the school of ownership and all data is protected using industry leading security protocols. A district submits the raw transcript data via electronic submission to the WTC. It is then categorized and placed into a common acceptable format. It is made available to other districts via the WTC software application, and also for submission to over 300,000 recognized educational institutions within the United States. Our transcript center contributes significantly to the national effort to minimize the need to reenter data and also ease student transitions.

Schools and postsecondary institutions can quickly attend to the educational needs of the student by having access to consistent and standardized electronic transcript data. At the school level, electronic transcript data can help identify early indicators of those students not on-track to go to college. Uniform transcript data sets will enable thorough examination of students' preparation to meet the demands of postsecondary education, the highly-skilled 21st century workforce, and the Armed Forces. This data may also be used to inform policy and practice of the preparation programs.

Additional funding resources will allow expansion of the WTC. Although not yet possible, the ideal circumstance would include transfer of all student records between and among all Wyoming schools in a secure environment. Wyoming student records could be requested and transferred in a secure electronic

environment, saving time, postage and printing. A successful grant would also allow for the expansion of postsecondary data exchange and analysis for all students specifically for those not receiving the Hathaway Scholarship. The end result will be significant cost savings and improved student support. The WDE also desires to be a model and a pilot state to establish standards and protocols for the "National Electronic Transcript Center," which the WDE hopes will be part of the National Data Center.

### **Wyoming Education Fusion Portal**

While the WISE Data System is a set of technical procedures and specifications for exchanging data, the Wyoming Education Fusion portal is the web-based interface to realize the results of those exchanges. The Fusion portal utilizes 21st-century access, authentication, authorization and security structures. The WDE's directory and identity manager is a state of the art implementation of those requirements that we all share. It is secure and maintained by the WDE. The Wyoming Education Fusion portal was established in 2008 with two purposes specific to data systems.

The first goal of the Fusion portal allows for disseminating disaggregate information securely to appropriate stakeholders. It is where education data is separated into its component parts and displayed to local stakeholders such as districts, schools, and classrooms. Access is granted through a user role matrix allowing data sets to be targeted and displayed to the correct users. Secondly, aggregate information is published for public consumption. The data is collected together from diverse sources and displayed in a useful format. Aggregate information is non-personally identifiable, and is produced for a broad group of consumers. Examples of aggregate information displayed through the Fusion portal to the public include graduation and dropout percentages.

Additional funds under this grant will support the development of "automated forms." It is our desire to aggregate data in the reporting format and configure it to comply with required reports for United States Department of Education (USDE) and other government agencies including workforce, child care, and health. An improved portal would be a major step toward providing information to educators and the public to address individual needs of students and improve teacher performance, assessment and accountability information and enrollment data.

### **➤ *Wyoming's Next-Generation Statewide Longitudinal Data System***

The WDE requests funding to fill in substantive gaps within the existing system and expand and improve upon the capacity of its longitudinal data system by implementing Wyoming's vision of an enterprise education information system. It will serve as the unified data source that will empower an information culture focused on continuous improvement from the student and classroom to the state legislature thus enhancing the state, the nation's workforce and community. Implementing this next-generation information system, called LDW19, will better support education and non-education stakeholders in their decision-making throughout the state, which is not otherwise possible under the existing longitudinal data warehouse.

Funding from the IES under the ARRA would enable the WDE to link through a preschool to postsecondary education pipeline and across state agencies (including workforce); ensure that that data can be accessed, analyzed and used, and communicated to all stakeholders; and build the capacity of all stakeholders to use the longitudinal data for effective decision-making. Specifically, the WDE would utilize ARRA grant funding to create an improved (a) longitudinal data store, (b) operational data store, and (c) reporting data mart that would support increased transparency, accountability, and improvement.

LDW19 will build upon the foundational framework of the state's existing limited longitudinal data system and advance the existing data dictionary and data collection metadata system begun by DW3 through expanding linkages to postsecondary education and workforce data. Grant funding will be used to improve the accessibility and communication of data by allowing LDW19 to be the primary source for releasing further information to support data-driven decisions through the Fusion portal. Finally, grant funding would allow the WDE to build the capacity of all stakeholders to use the data for effective decision-making through the provision of a comprehensive training plan to end-users.

Through ARRA grant funding, LDW19 will address identified system deficits and expand and improve on five of the grant applications required data system capabilities, where the system must:

1. Enable states to examine student progress and outcomes over time, including students' preparation to meet the demands of postsecondary education, the 21st century workforce, and the Armed Forces. Such a system must include data at the individual student level from preschool through postsecondary education and into the workforce (e.g. employment, wage, and earnings information); facilitate and enable the exchange of data among agencies and institutions within the State and between States so that data may be used to inform policy and practice. Such a system would support interoperability by using standard data structures, data formats, and data definitions to ensure linkages and connectivity among the various levels and types of data;
2. Link student data with teachers, i.e., it must enable the matching of teachers and students so that a given student may be matched with the particular teachers primarily responsible for providing instruction in various subjects;
3. Enable the matching of teachers with information about their certification and teacher preparation programs, including the institutions at which teachers received their training;
4. Enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers, and school leaders on the achievement of their students.

Although the grant application is focusing on these first five capabilities, the other two plus the twelve key elements will be indirectly improved through this project.

LDW19 will be advanced by partnering with several entities:

1. The Learning Exchange and Resource Network (LEARN) Consortium. The LEARN system connects existing data systems in a safe, authenticated way that manages the privacy and security of records and leaves control in the hands of the states. The WDE has formed a partnership with and has developed a collaborative relationship with the LEARN Consortium. With financial support from the WDE and this grant, the LEARN system will support the WDE efforts to exchange information in a common data format, adhering to academic standards and smart content that knows how to avail itself to teachers, students, and parents in a just-in-time approach. By making tagged data, secured identity management, and federated relationships available to third-party application developers, the WDE and the LEARN partnership will enable market forces to drive continuous improvement for learners, all while realizing greater efficiencies and cost savings. Without this change to our information system paradigm, the WDE will not be able to facilitate the learning of tomorrow. The WDE considers our participation in the LEARN Consortium to be an important part of our comprehensive proposal for achieving breakthroughs in the four reform areas:
  - Making progress toward rigorous postsecondary- and career-ready standards and high-quality assessments that are valid and reliable for all students, including English language learners and students with disabilities;

- Establishing prekindergarten to postsecondary and career data systems that track progress and foster continuous improvement;
  - Making improvements in teacher effectiveness and in the equitable distribution of qualified teachers for all students, particularly students who are most in need; and
  - Providing intensive support and effective interventions for the lowest-performing schools.
2. Wyoming school districts, by creating a statewide data warehouse model. Support from this grant will allow the WDE to build the architecture for each district to store a core set of data tables that contain all state and federal required reporting data, and state and local assessment data. The architecture will maintain each district's data in a separate and secure warehouse using leading edge software. Additionally, each district will have local control of data tables to define and store other data deemed critical by the district. A common tool set for reporting will be provided. Also a common library of reports, largely automated and available on demand, will be developed and shared. The data warehouse model will provide the mechanism for the WDE to provide districts and schools, preschools, BIE schools, community colleges and the University of Wyoming with workforce data and value-added statistics. The data warehouse model will provide the districts the capacity to build longitudinal archives of the data submitted to the WDE. The reporting tools then will allow the districts to analyze these longitudinal data. The data model will align to the National Education Data Model (NEDM) and the LEARN architecture and contribute significantly to developing processes and procedures useful at the national level.
  3. The Wyoming Community College Commission (WCCC), by implementing Objective 8, System of Continuous Improvement, of their strategic plan. The System of Continuous Improvement includes building a statewide longitudinal data system for the seven Wyoming community colleges, developing an accountability system that allows the WCCC and the colleges to demonstrate return on investment, and using data to promote student success and program improvement. The Community College Strategic Plan, of course, has been coordinated with other WDE initiatives and will result in better, more seamless services to the students of Wyoming and improved access to more continuous student data.
  4. The University of Wyoming (UW), by developing a strategic plan to expand the linkages between Wyoming high school students and those attending UW. The WDE currently collects a minimal postsecondary student data set to meet the requirements of Wyoming's state merit scholarship, the Hathaway Scholarship Program. A successful grant would fund the University in partnership with the WDE and Wyoming community colleges in developing data capabilities to collect and analyze data on transfer students, scholarship students, non-scholarship students; in short, on all students. The proposed system, LDW19, will support the University of Wyoming strategic goals of providing longitudinal data to (1) analyze the impact of student's P12 course-taking patterns on success at the postsecondary level (2) verify dual and concurrent enrollment course taking patterns and verify the validity of student achievement associated with these courses; (3) connect student-level data for graduates with employment data at the state, regional and national level; and (4) emphasize the quality of teacher preparation programs at the University of Wyoming. Furthermore, a robust student longitudinal data system will allow research and assessment on students requiring remedial education at the postsecondary level, rigorously assess graduation, retention, and persistence rates specifically linked to demographic characteristics and early performance and course-taking patterns. This type of research and assessment is currently not possible with existing data systems.
  5. The Wyoming Department of Workforce Services, by developing a strategic plan that will import critically identified data into LDW19. This strategic plan will use data sets similar to the sets

identified by the WDE and the uses will be implemented in the format of reports. These reports will be released to the public through the Wyoming Education Fusion portal described earlier.

➤ ***Capability #1 – Examine Student Progress and Outcomes Over Time***

The existing data warehouse, DW3, enables the WDE to examine student progress and outcomes over time, but it is limited to accredited public P12 education organization data. The WDE has made strides building the capacity to collect postsecondary student data and is collecting a minimal postsecondary student data set to meet the requirements of the state-funded Hathaway Scholarship Program. The postsecondary data set is securely collected four times per year through the WTC and is limited to validating the status of scholarship recipients. The data sets are then pulled from the WTC and loaded into DW3. Aggregate Hathaway Scholarship Program reports are provided through the Wyoming Education Fusion portal. The WDE is currently developing a web application for Wyoming postsecondary institutions to retrieve scholarship recipient information to enable them to make determinations regarding scholarship eligibility. DW3 includes a minimum amount of preschool student data. Data is collected specifically on children with disabilities ages 3-5 receiving services from the developmental preschool centers located throughout the state. This data enables the WDE to meet specific federal and state special education reporting requirements.

With this grant the WDE will improve and refine its current data model based on the National Education Data Model and the LEARN architecture. The data collected and stored will facilitate the WDE's capacity to measure teacher and principal effectiveness and the equitable distribution of qualified teachers for all students, particularly students who are most in need. The ability to match teacher and principal records with multiple longitudinal measures of effectiveness will be developed in the LDW19. Postsecondary data collection will be significantly expanded beyond what is necessary to validate the status of scholarship recipients. The WDE will develop and implement a logical model by building a parallel system. Once the parallel system is fully vetted, the WDE will migrate existing data sets. The LEARN architecture is designed to track students over time and creates a secure, locally-managed record-level data store. In particular the LEARN system will provide a neutral place for workforce, Armed Forces, postsecondary, early childhood and P12 data to be securely and privately stored without proprietary ownership.

➤ ***Capability #2 – Exchange Data Among Agencies and Institutions***

The most efficient and cost-effective process is to collect data at the state level and provide users appropriate access to it. The WISE Data System has the capacity to exchange data among agencies and institutions within Wyoming.

However, there have been two quality components identified that are limiting functionality within the WISE Data System. The first quality component is the needed integration between the WISE metadata dictionary and WISE data collections. As part of the system, the WDE uses the WISE metadata dictionary to define and document the data elements and validation rules for a number of WISE data collections. The only output at this time from the WISE metadata dictionary is textual reports, which can be used to manage the WISE data collections, but there is no automatic way to create and manage collections with the information captured in the WISE metadata dictionary.

The integration will take the information regarding collections within the WISE metadata dictionary and automatically create and manage the WISE data collections. This would result in greater operational

efficiency within the WDE, and also increase the likelihood that the collections created within the WISE Data System match the intent.

The proposed integration between the WISE metadata dictionary and the WISE data collections would give the WDE data analysts control over the following collection items:

- Turning rules on or off;
- Changing the severity of rules;
- Turn collections on or off;
- Changing optionality of or code sets used for fields;
- Making other changes in the characteristics of fields: length, data type, format, etc.;
- Picking business rules by type and setting parameters to implement that rule; and
- Doing custom SQL that returns records that meet or fail the query.

The second quality component is a tool allowing validation and verification of the SIF protocol collected data. After several years of requesting SIF data from multiple vendors to provide data for various WISE data collections, the WDE has learned that there can be large discrepancies between what vendors send via SIF. In addition to specifying which optional or extended elements may be required for a data collection, the state must often provide the semantics of how various data elements are to be interpreted. Often, at least one vendor must adjust their default SIF behavior to accommodate these interpretations. In general, the task of getting multiple vendors to recognize and adjust to the optional and extended SIF elements, and getting them all to provide a specific semantic interpretation is an enormous challenge.

The WDE requires a tool, which will allow it to validate and verify the correctness of the SIF data for specific collections. SIFcheck is the tool, which will be integrated with the SIF agent used in the WISE data collections ensuring mandatory, optional, and any extended elements are all provided in agreement with the collection definition. In addition, the SIFcheck tool will allow users to run trials of verification and validation rules directly against the SIF data. This solution provides much more than SIF certification, since it validates the data format against the specific needs of a data collection, not just the syntax of the mandatory fields. It also allows validation rules to look for errors in the relationships between SIF Objects, a feature not in the certification suites offered by the SIF Association, which often indicates an incorrect interpretation of the semantic meaning of the data in the collections.

The SIFcheck trials allow the configuration and use of multiple rule sets against collections of SIF Objects. It allows data analysts to associate a specific set of SIF Objects with a set of requirements, written as rules. Examples of rules which might run against a specific set of SIF Objects are:

- Rules to detect missing mandatory, optional, or extended elements;
- Rules to detect simple syntax errors in any of these elements;
- Rules to detect when an optional element has no value populated in any object, which often means the field is not mapped correctly;
- Rules to detect missing object references – Object A has a reference to Object B, which was never provided; and
- Rules to detect data fields which should hold values from a known set of values (authoritative data), but which hold invalid values.

In addition to these core features, the tool can facilitate the reporting and notification of the appropriate participants. This is an important point, because often the issues in SIF require the notification and cooperation of both vendor and district data managers to resolve issues.

Our current contractor, ESP Solutions Group, will provide a SIFcheck WDE user license to collect and manage SIF data. The license includes services to support the installation of the SIFcheck software, configure SIFcheck, and train the WDE administrators.

ESP Solutions Group has piloted the use of SIFcheck internally and used the results for clarification of SIF issues with vendors. By extending this capability, districts will be allowed to request their own SIF syncs for WISE data collections, automatically run SIFcheck trials against the resulting SIF data sets, and report SIF issues directly to the district data manager and optionally the associated vendor representative if so configured.

The WDE will also improve, expand, and enhance the data collection management process by developing certification programs for district personnel who submit data to the WDE; creating certification programs for the WDE collection stewards; and expansion of user collection guidebooks. The LEARN system relies on the development of common longitudinal data standards and an open standard design. By utilizing a common vocabulary and transactional standards data can flow easily through the educational pipeline, across school, district, community college, university, and across state lines, and allow access to authenticated users at all levels. The LEARN system will allow the collaborating and linking of core data without each system compromising their structure or security.

➤ ***Capability #3 – Link Student Data with Teachers***

The existing data warehouse, DW3, has the capacity and the data sets to link students to teachers. There are no statutory barriers to these linkages. However, student/teacher reporting is limited to our assessment vendor who provides student-level results to districts at the teacher level. Wyoming has begun within the Fusion portal to disseminate a variety of student performance reports, which are targeted to meet the school district administrator's needs.

With this grant the Fusion portal will be expanded to include more state and local assessment information and analytical tools to drill down into the data and provide views of the data for students, parents, teachers, and administrators. A fundamental aspect of the LEARN system is taking comparable, relevant, accurate, timely, and valid data on individual students and teachers and connecting them. Enhancing the linkages is necessary to answer questions of teacher effectiveness and identify exceptional teachers. The WDE will provide a comprehensive training program to help districts use the data to make decisions to ensure student success.

➤ ***Capability #4 – Match Teachers with Certification and Preparation Programs***

The existing data warehouse, DW3, contains teacher certification information allowing for verification of teaching assignments. The WDE collects detailed staffing assignment data for all staff employed in Wyoming school districts. Reported teacher assignment data includes specific subject area and low and high grades taught. Data sets are collected for all classes, by school, taught by each Wyoming teacher. Wyoming's Professional Teaching Standards Board (PTSB) is the agency that oversees teacher licensure in Wyoming. PTSB issues teaching licenses and determines highly qualified status for existing and prospective teachers. To determine if Wyoming teachers are properly certified and highly qualified the

WDE uses a cumbersome process. The WDE staffing data sets and PTSB licensure and highly qualified status data sets are linked via social security number for each teaching assignment reported to the WDE. A cross-reference table, linking combinations of assignment subject area and low and high grades taught with combinations of PTSB license subject area, low and high grades allowed to be taught, and effective and expiration dates, is used to validate the existence of proper teaching credentials for each teaching assignment, and to identify where proper credentials appear not to be in place. The WDE staff responsible for ensuring that Wyoming meets all federal highly qualified teacher requirements, state teacher licensure requirements, and data collection and reporting requirements work closely with PTSB staff in the coordination of all policy and administrative details needed to meet our collective responsibilities.

With this grant the WDE will be able to streamline processes. Building a statewide longitudinal data system for the seven Wyoming community colleges and defining the link to the University of Wyoming's data sets will enhance LDW19 to include linkages to teacher preparation programs. By enabling a comprehensive P20 system, and tracking individuals with a comprehensive unique ID, the LEARN architecture will facilitate the connection of teacher information to complete the feedback loop for higher education teacher preparation programs to connect teacher preparation and student learning.

➤ ***Capability #5 – Generate Decision-Making Informational Reports***

The existing data warehouse, DW3, has the ability to generate reports through the Fusion portal to parents, teachers, and school district administration on the achievement of their students. However, with the limitations of DW3, report generation is time consuming. The current reports are only available in non-interactive formats.

With this grant the WDE will be able to expand the number, type, and format of reports available through the Fusion portal. The LEARN platform provides universal access to learning management and/or student information systems. These tools for gathering relevant data on students make it possible to provide just-in-time information to specific stakeholder groups. The LEARN system contemplates a timeline for gradually shortening the refresh cycle on data, ultimately providing continuous feedback loops to the classroom. Most of the policymakers, educators, administrators, and business leaders who will use the information are not trained statisticians and LDW19 will include user-friendly tools and user-specific training plans. The grant will enable the inclusions of an analytical tool for identifying potential dropouts (early prevention). The WDE will also become an affiliate of the Wyoming Health Information Network (WHIN), which provides aggregated statistics regarding the utilization of state social programs. The WHIN data is summarized by gender, age, zip code, and state social program. The WHIN system contains two types of programs – state/government (dependence/assisted) type programs (Medicaid, state supported mental health and substance abuse treatment, food stamps, workers compensation, unemployment insurance) and skill development/self-sufficiency type programs (Workforce Investment Act, Workforce Development Training Fund). As a WHIN affiliate, the WDE will have collaborative access to the WHIN data analytics enhancing the information obtained from the WDE data warehouse. The WHIN system provides cross-agency statistical information to key stakeholders across state agencies helping them make educated decisions supporting the many facets of student lives and ultimately impacting student achievement.

Some examples of reports the WDE is expecting LDW19 to produce at the community level with the partnership of WHIN are:

- Percentage of students that meet a certain criteria and determine how that relates to the percentage of recipients in a program or programs captured in the WHIN database;

- Percentage of students receiving free/reduced lunch compared to the number of children that receive state assistance;
- Substance abuse ratios;
- Impacts of mental health and substance abuse treatment within a community and student performance;
- Percentage of graduates and how that relates to the percentage on state assistance;
- Student attendance percentages compared to the number of students receiving state assistance;
- Comparison in grades and graduation rates and the unemployment rate and/or workers compensation rate;
- Comparison of the utilization of state resources before and after key school district programs are implemented to show the potential cross-agency impact of school district interventions; and
- Identify areas for increased management of resources with other state agencies to support families at risk and improve outcomes for their students.

➤ ***Capability #6 – Ensure Quality and Integrity of Data Stored***

The LEARN data governance structure includes quality checks such as the ability of local entities to validate and certify their data at appropriate times, while DW3 ensures the quality and integrity of the data through rigorous business rule application and adjudication processes. With the implementation of LDW19 data quality and integrity will be inherently improved.

➤ ***Capability #7 – Meet State and Federal Mandated Reporting Requirements***

The LEARN system creates a “Federal Data Store” for EDFacts, Adequate Yearly Process (AYP), and all other official USDE data collections. The system creates a secure, locally-managed record-level data store for each state from which all federal reports are generated; each data store will contain individual records that will be designed to meet the federal collection requirements and allow the state to certify their data before submitting it to USDE. This will provide strong relief of data burden on both the WDE and school districts. DW3 has been meeting state and federal reporting requirements of the WDE. With the implementation of LDW19 reporting functionality will inherently be improved.

➤ ***Key Elements***

The State of Wyoming has worked diligently to put in place a system that contains the twelve elements prescribed by the America COMPETES Act. Grant funding from the IES through the ARRA would enable Wyoming to solidify, expand, and enhance the collection and usage of all twelve elements through the implementation of the state’s next-generation enterprise education information system, LDW19.

1. The WISE Student Record ID (WISER ID) is a unique, non-personally identifiable, statewide P12 student identifier that connects a student’s data across districts and institutions. Deployment of the WISER ID system began at the start of the 2005-06 school year. This process of uniquely identifying student records fulfills the requirements of No Child Left Behind (NCLB) by enabling the tracking of students across districts. WISER IDs remove many of the barriers to sharing and using that data and are the basis for tracking and reporting individual student information to the WDE. The ability to link records over time improves the quality of information used to make decisions affecting student learning. WISER IDs are needed to examine students’ transitions from one school to another. As Wyoming works to prepare high school students for the demands of higher education, educators and policymakers need the ability to match data on student achievement. The WISER ID system allows two-way communication between the P12 and postsecondary systems. Developing the capacity to uniquely identify out-of-state students who enroll in higher

- education is necessary to provide a complete picture of postsecondary enrollment and transfer issues. A successful grant would provide the capacity to create a comprehensive unique identifier to accommodate out-of-state postsecondary students and children in the prekindergarten system.
2. Student-level enrollment, demographic, and program participation information has been collected since 2005 for students in the P12 system. Information on Hathaway Scholarship recipients at the postsecondary level has been collected since 2006.
  3. A more robust student-level collection of exit, transfer in, transfer out, and drop out was implemented in the fall of 2009 for students in the P12 system. LDW19 will allow for additional tracking to be implemented at the postsecondary level.
  4. Postsecondary student data is collected for Hathaway Scholarship recipients through the WTC allowing for secure sharing of data between the WDE and Wyoming postsecondary institutions and for school districts to send electronic transcripts to numerous postsecondary institutions. The WTC is a secure electronic system that meets the requirements of the Federal Family Educational Rights and Privacy Act (FERPA). Student data are kept private through a set of security procedures that are also used in the banking industry. The WTC provides effective data downloads to the WDE's data warehouse where the data are immediately available for analysis.
  5. The WDE has very well defined and robust business rules to ensure data quality, validity, and reliability.
  6. The system fully complies with NCLB requirements.
  7. The system includes students not tested on the state assessment, by grade and subject.
  8. A unique statewide teacher identifier with the ability to match teacher records to student records is included. Going forward, that unique identifier would be associated with postsecondary information collected for graduates of teacher preparation programs at the University of Wyoming.
  9. The collection of student-level P12 transcript information began with the senior class of 2009. Exchange of college transcripts using the WTC is still in the implementation stages.
  10. ACT testing is required for all high school juniors and results are loaded into the current system.
  11. Given the type of data collected to meet the Hathaway Scholarship Program requirements the capacity to perform statistical studies between high school and Wyoming postsecondary outcome data exists. The Hathaway Scholarship statute requires the WDE to determine the percent of high school graduates who meet the success curriculum; perform statistical studies on the relationship between the courses taken and grades earned by high school students including the student's score on the ACT or WORKKEYS test; and statistical studies on the relationship between the courses taken and the grades earned in high school and the student's college or university GPA.
  12. The Hathaway Scholarship Program also allows for vertical curricular alignment between P12 and postsecondary institutions within the state of Wyoming and promotes adequate preparation for success in postsecondary education.

➤ ***Additional Benefits of Partnering with the LEARN Consortium***

The LEARN system creates an individual record for each child, fully integrating information on special education, English Language Learners (ELL), early childhood program participation, etc. The LEARN architecture includes the possibility of housing health and other "high security" data to the extent that state policy allows it.

LEARN is a collaboration of states working toward the same goal. The current LEARN pilot states are Colorado, Maine, New Mexico, and Wyoming. The WDE believes that by sharing the services, applications and processes, we will vastly enhance our own efficiency and innovation and contribute the same to others.

The LEARN architecture is an open standard relying on well-known transactional mechanisms already in use and utilizing the work done on the NCES Data Handbooks and the National Education Data Model (NEDM) to dictate a standard of definition and taxonomy. Each Data Fortress in the LEARN infrastructure will be based on the NEDM model and will be compliant with the work soon to be underway on National Data Standards. The collaboration involved in LEARN heightens the need for longitudinal data standards and will showcase the success of utilizing those standards.

The strength of the LEARN architecture is in its ability to provide relevant information to classroom teachers. By linking information systems to appropriate digital academic content, suggestions about digital media interventions can be tailored to the learning moment and to the benefit of teachers. Furthermore, by utilizing identity management, having federated security, and making tagged content available to third-party application developers, the LEARN system enables market forces to drive continuous improvement for learners, all while realizing greater efficiencies and cost savings. The Colorado Growth Model project utilizes the best thinking in growth model calculations to generate meaningful, accurate, and fair statistics. This information can then be quickly returned to learners, parents, teachers and administrators to allow for a more personalized learning experience.

The LEARN architecture is designed to create a robust data backbone offering information as a utility for every user (teacher, administrator, learner, parent, researcher, and policymaker). The LEARN data model will include the data sets required by ARRA and ACA and will allow for early childhood, P12, postsecondary, and workforce systems to be stored in the easiest way possible. The LEARN system will integrate data from the classroom to the capital.

The LEARN architecture and design will incorporate core elements and standards so as to align with the needs of workforce, labor, and other agencies. The LEARN architecture is also eminently extensible, so as to allow for eventual connections to other systems. Moreover, the standardization of the data structures will make it easier to connect, as state-specific solutions will be less necessary to design and build.

With LEARN system, the state will have the ability to provide de-identified record level data to authenticated researchers. Access to this information will allow the research community to analyze learners as never before and provide information back to educators with the potential to have a positive impact on student achievement.

The LEARN Consortium has sought the opinion of numerous stakeholders in constructing the design and architecture of the system and great care is being taken to ensure all stakeholder groups remain informed and involved. The WDE have done this in our own state and leveraged the national work of EIMAC, the NCES Forum, and the LEARN Consortium. Major advocacy organizations were consulted in the process, including teacher unions, major businesses, and civil rights leaders. Individual practitioners – educators, school leaders, and district superintendents – and their professional organizations shared in the development of the LEARN model.

### ➤ ***WDE Strategic Goals***

Funding from the Institute for Education Sciences would allow the Wyoming Department of Education and the state's public schools to better use data to identify areas of in need of improvement and the effectiveness of programs and targeted assistance. A centerpiece of the WDE's growing culture of

continuous improvement is its State System of Support of schools and school districts across the state. Good, reliable data is critical to this process. Grant funding will allow the state's next-generation enterprise education information system, LDW19, to better support the WDE's system of evaluation and support by growing DW3 into a more comprehensive and mature system. Through the expansion of the DW3's framework, advancing the existing data dictionary, releasing further information through the Fusion portal, and creating and rolling out a comprehensive training plan, LDW19 will be able to support the WDE's goals.

WDE's goals are:

1. To improve student performance through improving attendance rates, increasing graduation rate, increasing Hathaway Scholarship eligibility, improving third grade reading proficiency, improving eighth grade math proficiency, and increasing the percent of advance and comprehensive diplomas awarded;
2. To ensure efficient and effective operations through improving the system capacity of the district and the WDE by implementing the Performance Excellence/Baldrige Management System, improving North Central Accreditation average scores improving customer service ratings, improving performance on special education core indicator results, and increasing the number of schools and districts making AYP; and
3. To ensure safe, orderly, and healthful school environments through adopting and implementing policies and programs to reduce bullying and improving prevention and intervention activities to reduce alcohol and chemical use rates.

#### ➤ ***State Fiscal Stabilization Fund***

Grant funding will allow the state's longitudinal data system to provide better support in meeting the requirements of the State Fiscal Stabilization Fund. The improved system will:

1. Provide comprehensive informational reports around placement of teachers and their qualifications;
2. Specifically address and improve data collection and use of data collected;
3. Provide an assessment data analytical tool and professional development to districts that will include both state and local assessments;
4. Provide a wealth of information and assistance to Wyoming's struggling schools; and
5. Provide dashboard indicators to administrators at the postsecondary level regarding student performance and employment data.

#### ➤ ***Summary***

The WDE will be focusing on the first five required data system capabilities of the grant application:

1. Examining student progress and outcomes over time from early childhood into the workforce;
2. Exchanging data among agencies both within Wyoming and with other States;
3. Strengthening the linkages between student records and their assigned teachers;
4. Enabling the matching of teachers with their preparation programs; and
5. Easily generating timely data-driven reports for parents, teachers, and school leaders on the success of their students.

LDW19 will bring to fruition WDE's vision of an enterprise education information system through:

- Building strong partnerships with other Wyoming organizations and the LEARN Consortium;
- Expanding and building upon the framework of the current system;
- Enhancing the existing data dictionary and data collection metadata system; and
- Providing data driven information to key decision makers.

Wyoming's commitment to using data as part of a growing culture of continuous improvement has been ongoing since the first development of its education data system in 1989. This commitment is reflected in Wyoming being one of 11 states in the nation that satisfied all 10 Data Quality Campaign elements. As Wyoming looks forward in the development of its state system and data needs nationally, the Wyoming Department of Education strongly desires to be part of the bold national data standardization effort. The progress the WDE has made, with additional federal dollars and the plans we have for the future, will support national efforts. The WDE's work will ultimately save thousands of hours and millions of dollars as we share our progress with other state partners and ultimately the nation.

## **Project Outcomes Related to System Requirements and Implementation**

The long-term goal for the WDE's statewide longitudinal data system is a sustainable enterprise education information system. LDW19 will be the unified data source which will empower an information culture focused on continuous improvement.

### **➤ Outcome #1 – LDW19/Statewide Data Warehouse Model/LEARN**

LDW19 will expand and build upon the current framework of DW3 to include an improved longitudinal data store, operational data store, and reporting data mart. Through this outcome it is the WDE's desire to partner with key district technology personnel to create a statewide data warehouse model that will be used to expand and improve their current frameworks. Through a statewide data warehouse model, common standards and tools would be identified to virtually align the WDE's infrastructure with that of local districts.

The data collected and stored will include information that permits measurement of teacher and principal effectiveness and the equitable distribution of qualified teachers for all students, particularly students who are most in need. It is imperative the LDW19 system allows for matching of teacher and principal records with multiple longitudinal measures of effectiveness in order to develop accurate effectiveness measures.

## **Learning Exchange and Resource Network Consortium (LEARN) Products**

### ***Core Membership***

Core Membership of the LEARN Consortium will add five key aspects to the first desired outcome. Joining the LEARN Consortium will give the WDE a state data fortress, the Extract Transfer Load (ETL) between our core longitudinal data store and the fortress, and the federal reporting module. It also creates the backbone – the data utility – that allows both researchers and third party applications to access appropriate, secured, roster and longitudinal data. The five key aspects are as follows:

#### **State Data Fortress**

The state data fortress will either be a centrally co-located repository or a federated structure within our own longitudinal data store. The WDE will determine this in cooperation with our internal stakeholders and our partner states. The design of the fortress will be guided by the national data standards conversation through the National Education Data Model (NEDM) and the necessities of each of the state partners in the LEARN Consortium.

The system will ensure stable, secure local controls on access and use of the data. It will also ensure that Wyoming can enforce our own local policies and regulations inside the framework of the system, regardless of what our state partners do.

The system will enable a Standards Management System allowing the WDE to upgrade, compare, manage, jury, and distribute our academic standards in an accessible manner. It will also ensure that Wyoming can establish our own specific, concrete, measurable standards inside the framework of the system, regardless of what our state partners do.

#### Longitudinal Data Store Linkage

The linkage of the fortress to the longitudinal data store will have two primary functions:

1. Provide an easy to access and configure ETL between the core longitudinal data store and the data fortress. Each type of ETL will be configured to be a scheduled event, manually triggered, or set to go off when triggered within the data system. ETL involves:
  - a. Extracting data from outside sources;
  - b. Transforming it to fit our operational needs, which will include quality levels; and
  - c. Loading it into the data warehouse.
2. This part of the system will provide a direct linkage to our state's authentication and authorization system provided through our Fusion Enterprise Directory Manager. This structure will provide Automated Program Interfaces (APIs) for third-party systems (either internal, business partners or other states) to identify themselves, generate trust relationships, authenticate and grant access to the data appropriate for their role. It will also provide a user-interface for our security administrator to manage and configure this process.

#### Federal Reporting Module

The system will incorporate a Federal Data Store for EDFacts. The system will build upon newly implemented calculation processes for AYP. It will be the source for reporting all other official USDE data collections. The system will create a secure, locally-managed record-level data store from which all EDFacts and AYP reports can be generated. The system will securely house the student and teacher portfolios and allow the WDE to certify the data before the reports become "official."

#### Secure Research Interface

The system will provide authenticated access to researchers subject to Wyoming regulations and policies. The system will also give authorized users a view of the linkages between early childhood, postsecondary and workforce systems. The LEARN Consortium will aid us in creating the contracts and data ETL schemas with all non-P12 entities. The WDE will work with the other consortium partners to do the same.

#### Third Party Interfaces

The LEARN Consortium will publish connection interfaces (leveraging Web Services, SIF, and proprietary connections) through the platform to give access to application interfaces (i.e., LMS and Formative assessment) for small and/or poor school districts and to promote an open educational ecology.

### ***Student Back Pack***

The Student Back Pack set of services and components from the LEARN Consortium will allow LDW19 to empower teacher professional development and student achievement. These services represent the system's capacity to track a student's location and status. The Back Pack represents a secure set of data which will travel with the student throughout their educational tenure and into the workforce. It will be a cache of data essential for student success, including a neutral venue to share, discuss and analyze. The Student Back Pack includes the following:

#### Classroom Manager Module

Fundamentally this will allow for class rosters to be established and for students and teachers to be linked. It will also allow a visual navigation method for accessing rosters.

#### Student/Teacher View

Each teacher and student will have a view they utilize. The view will provide longitudinal information on the teacher or student - in essence a profile. The view will also be able to generate a transcript or student record that can be downloaded by the student's school (possibly a new school), authenticate applications, or act as a transcript broker. The student/teacher view will be a safe, neutral "landing zone" for the student and teacher data.

#### Dropout/Graduate Tracking

Dropout and graduate tracking is possible because of the system's capacity to track the student's location and status. This tracking will not be at a very fast pace at first, but it will allow for resolution of dropout issues across state lines to our neighboring states and across the country, and tracking students after high school graduation and through the workforce.

### ***Growth Model***

It is generally accepted that student achievement cannot be understood by static point-in-time evaluations. Some form of mechanism for tracking performance over time, combined with a more holistic view of the student, is necessary to create an accurate assessment. One of the more powerful and user-friendly mechanisms for doing this and displaying the results is the Colorado Growth Model Application.

#### Colorado Growth Model Module

The growth model used in Colorado, Indiana, and Massachusetts was developed by a team of education experts and researchers. The application was built in partnership with the Colorado Department of Education and they are now planning to create a multi-state version of the application. The WDE plans to participate in the design and adoption of the multi-state application, joining partner states in developing a rich and thorough growth model and data dissemination tool to impact student performance.

### ***Digital LEARNing Library***

#### Learning Resource Exchange

The Public Broadcasting Service (PBS), the Corporation for Public Broadcasting (CPB), and the Council of Chief State School Officers (CCSSO) are working together to transform the way education media information is collected, shared, and used by states, educators, policymakers, district administrators, and parents.

Through the PBS distribution network of 356 station licensees, the Digital Learning Library (DLL) provides teachers and students with a growing collection of thousands of high-quality digital media resources, including videos, images, animations, simulations, and instructional games. These resources relate to core content subjects including reading and Science, Technology, Engineering, and Mathematics (STEM) Education Coalition, and are available at every level from prekindergarten through high school. Educators and students have instant access to more than 40 years of PBS programming and a full range of purpose-built digital learning objects. An algebra teacher could organize a collection of resources for their students that include a video segment from NOVA, an interactive simulation demonstrating the mathematical concept and a Frontline interview with an innovator who used the concept to invent a new technology. Each digital resource is aligned to current state academic standards, but will also be aligned with the Common Core Standards initiative.

#### Engaging Students in STEM

Teachers and students will have immediate access to objects from over 40 years of PBS STEM programming and the interactive simulations and resources that help make abstract concepts more understandable developed by the support from CPB. These engaging resources directly support STEM teachers in the classroom as well provide students with informal learning opportunities by viewing programming at home or after school.

#### Instruction Center Module

By aligning targeted content to lesson plans and curriculum, the system can deliver that content to students and teachers in small, rural, or poor districts that would otherwise not have access to those kinds of tools.

### ➤ ***Outcome #2 – Evaluation/Improvement of WISE Data System/Data Steward Certification Program***

The second outcome is a mature statewide data collection and reporting system. By executing a meticulous evaluation of the existing WISE Data System, including project deliverables and the implementation of those deliverables, this grant will take our mechanism to the next level.

The WDE also desires to improve the WISE Data System by extending the WISE metadata dictionary and the WISE data collections by the following means:

- To include rule templates sufficient to express the customizable rules of WISE data collections. The rule templates will be integrated with the existing WISE metadata dictionary capabilities to allow rule creation to use the elements and code sets already expressed in the WISE metadata dictionary.
- To produce intermediate forms which can express the elements, code sets, and rules produced within the WISE metadata dictionary. The intermediate forms will be exportable from the WISE metadata dictionary for use in other software agents.
- To import intermediate forms which can express the elements, code sets, and rules produced within the WISE metadata dictionary.
- To allow control and update of collections using intermediate forms acquired from the WISE metadata dictionary. The WDE should be able to control the activation, severity, and operation of rules within the limits of the values provided by the WISE metadata dictionary.

