

U.S. Department of Education

Washington, D.C. 20202-5335



**APPLICATION FOR GRANTS
UNDER THE**

Statewide, Longitudinal Data Systems

CFDA # 84.372A

PR/Award # R372A120031

Grants.gov Tracking#: GRANT11026474

OMB No. , Expiration Date:

Closing Date: Dec 15, 2011

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Application for Federal Assistance SF-424		
* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): <input type="text"/> * Other (Specify): <input type="text"/>
* 3. Date Received: <input type="text" value="12/15/2011"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text" value="NA"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="Vermont Department of Education"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="03-6000274"/>	* c. Organizational DUNS: <input type="text" value="8849027010000"/>	
* d. Address:		
* Street1: <input type="text" value="120 State Street, 4th Floor"/>	Street2: <input type="text"/>	
* City: <input type="text" value="Montpelier"/>	County/Parish: <input type="text"/>	
* State: <input type="text" value="VT: Vermont"/>	Province: <input type="text"/>	
* Country: <input type="text" value="USA: UNITED STATES"/>	* Zip / Postal Code: <input type="text" value="05620-2501"/>	
* e. Organizational Unit:		
Department Name: <input type="text"/>	Division Name: <input type="text" value="IT Division"/>	
* f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text" value="Mr."/>	* First Name: <input type="text" value="Brian"/>	
Middle Name: <input type="text" value="L."/>	* Last Name: <input type="text" value="Townsend"/>	
Suffix: <input type="text"/>	Title: <input type="text" value="Director of Information Technology"/>	
Organizational Affiliation: <input type="text"/>		
* Telephone Number: <input type="text" value="802-828-6575"/>	* Fax Number: <input type="text" value="802-828-3676"/>	
* Email: <input type="text" value="brian.townsend@state.vt.us"/>		

Application for Federal Assistance SF-424

*** 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:

84.372

CFDA Title:

Statewide Data Systems

*** 12. Funding Opportunity Number:**

ED-GRANTS-092011-001

* Title:

Institute of Education Sciences (IES): Statewide, Longitudinal Data Systems Program CFDA Number 84.372A

13. Competition Identification Number:

84-372A2012

Title:

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

Add Attachment

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

Vermont Automated Data Reporting (VADR) Project

Attach supporting documents as specified in agency instructions.

Add Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant

b. Program/Project

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

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal

* b. Applicant

* c. State

* d. Local

* e. Other

* f. Program Income

* g. TOTAL

*** 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 in attachment.)**

Yes No

If "Yes", provide explanation and attach

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: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:

ASSURANCES - NON-CONSTRUCTION PROGRAMS

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.

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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 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 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.

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 subagreements.
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 (Clean Air) Implementation Plans under Section 176(c) of the Clean 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. §§1271 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 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 OFFICIAL Kathy Flanagan	* TITLE Commissioner of Education
* APPLICANT ORGANIZATION Vermont Department of Education	* DATE SUBMITTED 12/15/2011

Standard Form 424B (Rev. 7-97) Back

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 an 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 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 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	
<input style="width: 90%;" type="text" value="Vermont Department of Education"/>	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: <input style="width: 100px;" type="text"/>	* First Name: <input style="width: 200px;" type="text" value="Armando"/> Middle Name: <input style="width: 150px;" type="text" value="D"/>
* Last Name: <input style="width: 300px;" type="text" value="Vilaseca"/>	Suffix: <input style="width: 100px;" type="text"/>
* Title: <input style="width: 250px;" type="text" value="Commissioner of Education"/>	
* SIGNATURE: <input style="width: 300px;" type="text" value="Kathy Flanagan"/>	* DATE: <input style="width: 150px;" type="text" value="12/15/2011"/>

SUPPLEMENTAL INFORMATION
REQUIRED FOR
DEPARTMENT OF EDUCATION GRANTS

1. Project Director:

Prefix:	* First Name:	Middle Name:	* Last Name:	Suffix:
Mr.	Brian	L.	Townsend	

Address:

* Street1:	120 State Street, 4th Floor
Street2:	
* City:	Montpelier
County:	
* State:	VT: Vermont
* Zip Code:	05620-2501
* Country:	USA: UNITED STATES

* Phone Number (give area code) Fax Number (give area code)

802-828-6575	802-828-3676
--------------	--------------

Email Address:

brian.townsend@state.vt.us

2. Applicant Experience:

Novice Applicant Yes No Not applicable to this program

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:

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Abstract

The abstract narrative must not exceed one page and should use language that will be understood by a range of audiences. For all projects, include the project title (if applicable), goals, expected outcomes and contributions for research, policy, practice, etc. Include population to be served, as appropriate. For research applications, also include the following:

- Theoretical and conceptual background of the study (i.e., prior research that this investigation builds upon and that provides a compelling rationale for this study)
- Research issues, hypotheses and questions being addressed
- Study design including a brief description of the sample including sample size, methods, principals dependent, independent, and control variables, and the approach to data analysis.

[Note: For a non-electronic submission, include the name and address of your organization and the name, phone number and e-mail address of the contact person for this project.]

You may now Close the Form

You have attached 1 file to this page, no more files may be added. To add a different file, you must first delete the existing file.

* Attachment:

Abstract: The Vermont Automated Data Reporting (VADR) Project

The Vermont Department of Education (VT DOE) has long recognized the importance of providing, to its program staff, policymakers, external researchers, district administrators, and school-level educators, access to comprehensive, reliable, timely and actionable data to inform decision-making and to evaluate education policies and programs. Nearly a decade ago, the Department, through its district partnership with the Vermont Data Consortium (VDC), took the first step in providing this access by establishing the Education Data Warehouse (EDW). Since then, we have continued progress towards this goal by adding additional data analysis tools including a parameter-driven reporting tool and an EDW dashboard module. Despite having taken those useful steps, our current statewide longitudinal data system has many shortcomings.

The Institute of Education Sciences established the Statewide, Longitudinal Data Systems (SLDS) grant program to assist states in establishing data systems that foster the generation and use of accurate and timely data, support analysis and informed decision-making at all levels of the education system, increase the efficiency with which data may be analyzed to support continuous improvement of education services and outcomes, facilitate research to improve student academic achievement and close achievement gaps, support education accountability systems, and simplify the processes used by states to make education data transparent through Federal and public reporting. To date, a total of \$515 million have been awarded to 41 States and the District of Columbia for developing these systems.

Vermont has yet to receive funding under this program, however, 2012 SLDS grant funding will allow Vermont to implement the *Vermont Automated Data Reporting (VADR) project*. The VADR project, addressing grant *Priority 1: K-12 Data System*, will allow the complete implementation of Vermont's K-12 Data System.

Vermont feels that it has put excellent tools in place to help stakeholders analyze data that can help answer key education policy questions about how Vermont is serving its students. The overall vision and goal of the VADR project is to supplement and improve upon these analysis tools by automating the data collection, loading and reporting processes and adding a new tool to measure and monitor student, school and LEA growth.

Deliverables expected to be developed through this project are:

Deliverable 1: All K-12 Schools Participating in Automated Vertical Data Collection Process by May, 2015.

Deliverable 2: Develop State-level Operational Data Store.

Deliverable 3: All VT DOE Data Analysis Tool Data Loads Automated by May, 2015.

Deliverable 4: Establish Enhanced Training Delivery System.

Deliverable 5: All EdFacts Submission Files Capable of Being Automatically Generated by May, 2015.

Deliverable 6: Develop Growth Model Reporting Tool.

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

To add more Project Narrative File attachments, please use the attachment buttons below.

Add Optional Project Narrative File

Vermont Automated Data Reporting (VADR) Project

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Section A - Need for Project

Vermont is pursuing a Statewide, Longitudinal Data Systems (SLDS) grant from the Institute of Education Sciences for the purposes of designing, developing and implementing a statewide, longitudinal kindergarten through grade 12 (K-12) data system (***Priority 1. K-12 Data System***). Vermont recognizes that, while the long-term goal of the SLDS grant program is to support the creation of comprehensive P-20W (early learning to workforce) systems in every state, the establishment of a system that supports informed decision-making by a state's K-12 education stakeholders is the foundation upon which early and postsecondary education and workforce linkages can be made. It is only once Vermont establishes a K-12 Data System through this grant that the state will be able to begin meaningful pursuit of these additional linkages.

A.1 - Description of Vermont's Education Governance Structure and Local Systems

The State of Vermont has one of the most complex education governance structures in the nation. A simplified description of this governance structure follows.

Vermont has 277 town school districts, twelve of which have formed single town district Supervisory Districts (SDs). All other town districts have joined with other town districts to form Supervisory Unions (SUs). An SU is defined in statute as an administrative, planning, and educational service unit. An SD is defined as a single-town SU and SDs are included when discussing SUs as a group of such entities. There are 15 state supported Career & Technical Education centers in Vermont. 12 of these are administered by the SU in which they reside while 3 centers have formed their own administrative Regional Technical Center School Districts that serve as de facto SUs for their Technical Centers. SUs are the comparable Vermont entities to what are referred to as districts/LEAs in other states. *For the purposes of this grant application, SUs will be referred to as districts or LEAs to help reviewers develop a common understanding and the 3 regional technical center school districts will be treated as distinct, separate SU entities.* Vermont is a local control state and, as such, each district makes its own decisions regarding data system purchases and implementation. There are less than 10 Student Information System (SIS) vendors with implementations spread across these districts. One vendor dominates market share with implementations in nearly 60% of Vermont's districts. Five other vendors have implementations covering between 5-15% of these districts, respectively. Remaining vendors have a presence in two districts or less.

A.2 - Background and current status of Vermont's statewide, longitudinal data system

Early Efforts and Expanding Requirements

Over the past ten years, the Vermont Department of Education (VT DOE) has dedicated its data efforts toward implementing a statewide student identifier, meeting vastly expanding statutory reporting requirements, and building a data warehouse to provide longitudinal data to its educational community. In 1998 VT DOE implemented a statewide student identifier which now exists in all student-level datasets across the department. The student identifier initially provided student demographic and program participation information. In 2004 VT DOE's student-level data systems were dramatically expanded to meet the requirements of the No Child Left Behind Act (NCLB). The expansion of the student census allowed tracking of P-12 mobile students and

verification of student enrollment, transfers and dropouts. Also in response to NCLB requirements, Vermont implemented a unique teacher identifier, and an incident level discipline data system.

The increasing number of required data elements prescribed by NCLB, the America COMPETES Act and State Fiscal Stabilization Fund (SFSF) assurances has driven the need for a growing number of VT DOE developed data collection applications, which are the primary means VT DOE uses to collect all state and federal required data and as the source of their data system. While these data collections allow VT DOE to meet requirements, maintaining existing and developing new collections has become a tremendous burden for SEA staff. The burden on districts and schools, who have to fill out these collections, is even greater.

America COMPETES Act required elements and SFSF

The 12 elements prescribed by the America COMPETES Act form the basis of an effective statewide, longitudinal data system. Until recently, VT DOE's data system contained all required elements except for:

- A teacher identifier system with the ability to match teachers to students; and
- Student-level transcript information, including information on courses completed and grades earned.

While VT DOE has an established teacher identifier system, Vermont's data system did not have the ability to match teachers to students. VT DOE also lacked the ability to capture and report information on student-level transcript information.

In response to SFSF requirements to implement a state data system that contains elements specified in the America COMPETES Act, VT DOE ultimately was forced to develop and deploy yet another data collection (Student Educator Course Transcript collection or SECT) this year to establish the teacher-student link and collect student-level transcript information. While this enabled VT DOE to ensure that the State met requirements, this has only added to the slate of data collections VT DOE must develop and maintain and that school staff must respond to.

Education Data Warehouse

In 2005, VT DOE created an Education Data Warehouse (EDW) in collaboration with a consortium of local school districts called the Vermont Data Consortium (VDC). The EDW is the foundation of VT DOE's longitudinal data system. The VDC currently represents only 23 of Vermont's 60 supervisory unions. The member districts pay consortium dues providing training on the use of the tool and – with a tiered membership level and higher dues – the benefit of loading local data into the district model of the EDW. All VDC member districts have access to the state model storing data collected by the state from schools and districts. The state model of the EDW contains student, program, teacher, discipline, assessment, and school finance data. Depending on the data, the EDW in the state model contains between seven to 14 years of longitudinal data.

There are two important distinctions between the state and district model of the EDW. The state model does not currently allow the link between teachers and students. The district model allows for this linkage and member districts can upload local assessment data, standard or grade expectation-based indicators, class/course lists, grades, attendance, discipline and program

indicator data. The population of the district model is available only to VDC members and is entirely optional. Only 13 VDC members have loaded local data into the district side of the model.

Challenges

The new data reporting requirements brought about by NCLB and the implementation of the EDW proved challenging for both the state and local districts. Most local districts lack the financial, technical and human resources necessary to accumulate, clean, report and analyze data. In an attempt to improve data quality and reduce local burden, VT DOE hired a consulting firm (through a National Center for Education Statistics (NCES) cooperative system grant) to conduct site visits and create a best practices guide for meeting core data reporting requirements. Technological barriers documented during the site visits include too few computers, out-of-date computers, no wide area network, and a lack of technology staff (or staff working on contract). A major finding was that, even in districts with no technological barriers, the staff expected to complete data requests lack the time and tools to meet the requirements efficiently. Technical staff members are typically unavailable because of competing needs and the opinion that data reporting is largely a data entry task. Data reporting is a tremendous burden on schools; some school secretaries have to complete the task “gratis” nights, weekends, and after the school year end.

Prior to State Fiscal Stabilization Fund (SFSF) assurances requiring State collection of data that would allow for the linking of teachers and students, the dual data model of the EDW seemed an ideal solution over and above creating more data reporting requirements for local districts to allow for this link and all the rich analysis that it allows. Unfortunately, the implementation of the district side of the model has progressed slowly. As mentioned above, less than one third of Vermont districts have taken advantage of the district EDW model to link students and teachers to the wealth of performance, program participation and demographic information included in the state EDW model. Other schools either rely on their local data system or lack the ability to access and analyze linked student/teacher data. Even those districts successful in loading their data into a district warehouse have difficulty using their data for a number of reasons. Two major issues are the following:

- The local data tends to have many errors in student identifiers. The accuracy of the student identifiers is essential to linking between local and state data and looking at student achievement longitudinally.
- The EDW ad hoc query tool and the extensiveness of the EDW data model prove difficult for most EDW users except those with additional data analysis training. Even districts employing data analysts trained to use the ad hoc query tool do not take advantage of this resource because administrators unaccustomed to using data for decision making do not provide these analysts with questions that can be answered using longitudinal data.

Data-driven Reporting System

To respond to the difficulties using the ad hoc query tool and to make education information more accessible, VT DOE gained an NCES cooperative system grant to create a data-driven reporting system. VT DOE sought to expand and enhance the data warehouse reporting capabilities by developing a series of new report “templates.” These report templates are used to create new reports that can be available to both internal users and the general public via the VT

DOE web site. The templates can also be used to clone future reports using the same report design but accessing different aggregated source data.

Once developed or cloned, the report file is published to the report server which then renders the reports on demand for the end-users in HTML when the report is accessed through an URL. The reports draw data from a set of custom tables in the EDW.

The design approach is “database-centric” in that the report definition elements are contained in the report database. Very minimal configuration needs to be done with the report development tool when cloning report templates. One of the guiding principles for this project was to minimize the amount of complex, custom coding for the report templates.

Reports are parameter-driven to focus the report data, typically for a particular school and/or time period. Most reports have dynamic links to automatically change the displayed report statistic (i.e. switch from showing breakdown by race to breakdown by poverty level), as well as offering direct linking to other reports where the linked report parameters are automatically picked up from the linking report. All reports have help pages set up to provide documentation and definitions for the report viewers. One result of this project is that VT DOE is perfectly poised to quickly create data reports cloned from existing report templates and driven through a report database in the EDW.

EDW upgrade and Dashboard Implementation

This past year, VT DOE contracted with its EDW vendor to upgrade to the latest software version and also to implement the vendor’s dashboard module. This project is well under way with the upgrade complete and the dashboard module scheduled to launch in the project’s first two pilot districts in the first quarter of 2012. This dashboard module will provide easy-to-read, color-coded indicators for district administrators, principals and educators. It will provide snapshots of student, educator, school and district-level performance and effectiveness indicators and be much more intuitive for those district personnel lacking the data analysis skills or training needed to dig deep into the EDW’s main query-building tool. The usefulness of this tool is limited to districts that have current local warehouse implementations, until VT DOE is able to add the teacher-student link to the state model of the warehouse.

A graphical depiction of Vermont’s current data collection and reporting system is included as **Artifact 1 of Appendix A**.

A.3 - Limitations of Vermont's current SLDS

While the establishment of the EDW, the creation of the data-driven reporting tool and the ongoing implementation of the EDW dashboard module have helped and will help VT DOE provide excellent data analysis tools to its education stakeholders, the current model of Vermont's longitudinal data system still has significant shortcomings.

Some of the most challenging aspects of the current system include:

- All VT DOE data collections are done via online or distributed data collection applications. This creates a tremendous burden for those in districts performing data entry and/or creating manual processes to extract data from their source systems. It also has become increasingly difficult for VT DOE development staff to manage the increasing number of data collections needed in order to comply with an ever-growing list of federal and state data reporting requirements.
- As mentioned above, less than half of Vermont's districts belong to the data consortium that provides training and support to districts on the effective use of the EDW and soon-to-be-released dashboard tools. While these offerings are tremendous tools for districts that are able to come up with the resources to establish local warehouses, these tools will not truly be effective until they – and the necessary training on their use – are made available to all Vermont districts.
- The fact that the state model of the EDW does not currently have the ability to link teachers to students limits the usefulness of the ad hoc reporting tool and dashboard module for those districts that have not implemented a local warehouse.
- Like Vermont's data collections, the preparation and loading of data into the EDW is largely a manual process as well. VT DOE does not have an organized central data repository that makes it easy to compile all data necessary for these loads. This being the case, data loads can only currently happen two or three times per year. While the data loaded into and stored within the EDW is comprehensive, the frequency of these loads makes them much less timely and, thus, much less useful than they could be were data loads happening on a more timely basis.
- Having data coming into the VT DOE via disparate data collection mechanisms and lacking a coherent centralized data repository makes VT DOE's task related to federal *EdFacts* reporting a time-intensive, manual process as well.

A.4 - Comparing Vermont’s current SLDS to Priorities and Requirements for “Priority 1: K-12 Data System”

<p><u>Governance and Policy Requirements:</u></p> <p>Need and Uses: <i>In addition to providing information that helps to improve student achievement and reduce achievement gaps among students, a successful data system should address several of Vermont’s other key educational policy questions. The system should provide data and data-use tools that can be used in education decision-making at multiple levels, from policy to classroom instruction.</i></p>
<p>Status: While the data-analysis tools in place form the decision-making backbone of Vermont’s current SLDS, there are two significant shortcomings of this current system as it pertains to this requirement:</p> <ul style="list-style-type: none"> • Many districts lack access and training on these decision-making tools. • The data contained in these tools are not timely or actionable due to the current load schedule. <p>NEED: Vermont needs to extend access to all districts and establish a mechanism where data loads are happening more frequently. Automated/streamlined data loads will make these much more useful tools in the education community’s effort to improve student achievement, reduce achievement gaps and answer key educational policy questions.</p>
<p>Governance: <i>A successful data system rests upon a governance structure involving both State and local stakeholders in the system’s design and implementation. Particularly when expanding the data capacity in existing K-12 systems to include other educational data, an SLDS must identify the entities responsible for the operation of the statewide data system, and data confidentiality and access, as well as the means to resolve differences among partners.</i></p>
<p>Status: Vermont does not have a permanently established SLDS governance committee in place at the current time. As mentioned previously, VT DOE partnered with a district consortium in the selection and creation of the EDW. This partnership has allowed stakeholders to design and regulate components, access and improvements to the system. Having not received grant funding for system improvements since it was established, the push and support for a permanent SLDS governance committee has diminished.</p> <p>NEED: VT DOE recognizes that the work paid for under this grant requires a stable and consistent governance structure. This grant will provide the opportunity to reconstitute a permanent SLDS governance committee to oversee the work paid for by this grant and to guide Vermont’s SLDS into the future.</p>
<p>Institutional Support: <i>A successful data system requires institutional support from leadership within the SEA and from relevant stakeholders within and outside the SEA. The support must include authorization to develop and implement the SLDS, as well as the commitment of the necessary staff and other resources. If the SLDS is to be expanded to include data from other systems, all involved institutions must agree to a shared vision for deliverables and objectives.</i></p>
<p>Status: Vermont has long recognized the value a decision-support-system with reliable data could bring to its education stakeholders. This was the driving factor behind VT DOE’s and the VDC’s work to establish the EDW. This system was established at the request of the state’s Education Commissioner and district leaders through requesting and receiving a \$1M appropriation from the state legislature. VT DOE leadership has provided technical staff dedicated to supporting established data analysis tools and has included in its budget funds to pay for continued licensure and system improvements. The Vermont education system has been</p>

pursuing additional funding in support of its data systems since that time. Support for an improved SLDS has continued and grown over time. The Vermont legislature enacted statute (**included as Artifact 8 of Appendix A**) in 2009 establishing a “Prekindergarten-16 council” (PK-16 Council) whose goal, among other things, is to “ensure implementation of a prekindergarten-16 longitudinal data system”. Education stakeholders both within and outside the SEA realize that the establishment of an improved SLDS to answer state educational policy questions is critical in order to be able to answer key policy questions and to improve the delivery of education to Vermont’s students. (**see Evidence of Coordination and Support in Appendix B**)

Sustainability: *A successful data system requires ongoing support from the SEA after it has been implemented. At a minimum, the system requires ongoing commitment of staff and other resources for system maintenance, quality control, and user training.*

Status: As mentioned above, VT DOE has provided staff for system maintenance, quality control, and support and has provided annual funds to cover system licensing, maintenance and support. VT DOE also budgeted enough money this past year to pay for the aforementioned system upgrade and the implementation of the vendor’s dashboard module. Funds to pay for licensing, maintenance and support of the system have been and will continue to be included in the department’s budget and support of this system will continue to be part of VT DOE’s Information Technology division.

NEED: In addition to the aforementioned support, VT DOE recognizes that the need for resources responsible for user training will continue after the grant period ends. VT DOE is prepared to approach the state legislature to ask that funds be budgeted annually to continue the support of the districts and their training in the years to follow the grant period.

Technical Requirements:

Federal Reporting: *A successful data system must be able to meet Federal reporting requirements, including those of the U.S. Department of Education’s (Department) EdFacts system. The system should provide efficiencies that reduce the burden of Federal reporting for schools and districts.*

Status: VT DOE has a full-time, dedicated EdFacts Coordinator who is responsible for gathering all data needed for all EdFacts reporting. While VT DOE has been exceptional at submitting all EdFacts files on a timely basis, the current process of gathering the needed data from disparate systems and sources is quite cumbersome and inefficient.

NEED: VT DOE needs to develop within its SLDS the capability to automate as much of this process as possible. The timing of cyclical data collections often causes VT DOE’s EdFacts Coordinator to have to wait for a data collection to finish in order to gather a few final pieces of a file submission. Streamlining and automating much if not all of this data collection as well as the creation of EdFacts submission files will make this system much more efficient and reduce the burden of Federal reporting for the schools and districts as well.

Privacy Protection and Data Accessibility: *An SLDS must ensure the confidentiality of student data, consistent with the requirements of the Family Educational Rights and Privacy Act (FERPA) and State laws or regulations concerning the confidentiality of individual records. The system should also include public documentation that clearly articulates what data will be accessible, to which users, and for what purposes.*

Status: VT DOE’s data analysis tools utilize underlying row-level database security as well as organization and role-based access rules to ensure that the confidentiality of student data,

consistent with FERPA, is maintained. VT DOE suppresses any value smaller than the small-n of 11 in any public report it publishes.

NEED: While VT DOE vigorously follows all FERPA rules in order to protect student privacy, VT DOE will need to work with stakeholders to provide public documentation articulating what data will be accessible, to which users, and for what purposes.

Data Quality: *A successful data system should use a common set of data elements with common data standards to allow interoperability and comparability of data among programs such as the Common Education Data Standards (CEDS), as available and applicable. A successful data system has the capacity to exchange data between the SEA and its LEAs, as well as among LEAs, or with other appropriate State agencies or educational entities.*

Status: VT DOE has an established data dictionary for its data collections from schools and districts. Field names and data definitions are consistent across many data collection applications. As a local control state, however, Vermont’s LEAs are free to utilize any SIS or whatever other data system tools they wish. This being the case, data elements can differ greatly from one LEA to another.

Regarding data quality, the data collections VT DOE creates have database and field-level business rules and user documentation that result in nearly error-free, reliable data. The reality of having many different SIS’s at the LEAs, not having these systems directly linked to a state system, and only collecting data once or twice a year is that it is likely that many LEAs prepare data submissions outside of their source systems without verifying the quality of the data in source systems.

NEED: VT DOE needs to establish a central data repository that follows the model of CEDS. This will establish a data system with a common set of data elements and common data standards. Establishing this central data repository that utilizes the good work of the people that are putting together CEDS puts in place a standard that many vendors and education practitioners are already using. Using CEDS as the basis for this repository also positions Vermont well should they wish to initiate inter-state data sharing in the future.

NEED: VT DOE also needs to automate its data collection process. By automating data collection directly from source LEA systems, it is possible to identify data quality issues that might exist in those systems. It would not be possible for an LEA reporting the data to manipulate the data outside of their system before reporting it to the SEA. This inherently improves the quality of data in these source systems.

Enterprise-wide Architecture: *A successful SLDS includes an enterprise-wide data architecture that links records across information systems and data elements across time and allows for longitudinal analysis of dropout and graduation rates and student achievement growth. The architecture should include, at a minimum, a system for assigning unique student identifiers, a data dictionary, a data model, and business rules. The system must make data dictionaries publicly available.*

Status: VT DOE has in place an architecture that includes a system for assigning unique student identifiers, a data dictionary, data models for data collections and data analysis tools like the EDW, and business rules for all of its data collections. The EDW allows for longitudinal analysis of students and cohort groups for dropout and graduation rates and student achievement. VT DOE does not currently make data dictionaries publicly available.

NEED: VT DOE must make data dictionaries related to their data system publicly available and plans to do this as its data system and data dictionaries are updated during the implementation process.

