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Project Narrative

Need for the Project

Background

All states are held to state-defined high standards of accountability as required under the No Child Left Behind Act (NCLB), but not all states have the same advantages in providing the technical support needed to improve learning. Larger states benefit from economies of scale and can fund substantial and highly leveraged personnel and technology resources. However, as the 49th most populous state in the Nation,¹ North Dakota has limited state education agency resources to develop an accountability infrastructure that goes beyond reporting of data to a system that provides data useful to advancing professional practice in the classroom and educational research that informs both policy and practice.²

The North Dakota primary and secondary education system is comprised of the State Department of Public Instruction (DPI), and approximately 184 active locally controlled school districts. Districts are supported by eight Regional Education Associations (REAs). All but 13 of the 184 districts have fewer than 1,000 students. While the five largest districts in North Dakota have their own data warehouse, the small size of North Dakota's other districts limits the availability of their resources to conduct research and data analysis. North Dakota has already made significant investments in its data system but needs federal support to create an integrated longitudinal data system and improve the equitable access of data resources between larger districts, who can afford their own data systems, and smaller districts, who cannot.

Current Investments to Meet Data Needs

North Dakota prides itself on creating and maintaining an accountability system that meets the federal reporting requirements of *EDFacts* and the Family Educational Rights and Privacy Act (FERPA). North Dakota has invested over \$3 million in developing its statewide data collection systems. DPI began building an online system, the State Automated Reporting System (STARS) for collecting data to meet NCLB requirements and establishing a state student identifier. STARS also provides the data collection and calculations required for State financial aid. The online collection system has been rewritten to meet heightened data needs as demands for data required by the Education Data Exchange Network (EDEN)/ *EDFacts*, technology standards and data quality issues have increased.

The second generation STARS expands the state collection system in program areas to meet more *EDFacts* requirements and increase data validations and quality enhancements to improve the data. STARS has created a strong foundation to build upon as North Dakota moves toward

¹ US Census Data, 2005.

² The ND DPI has 90 current state employees (Source: Interview with DPI executive staff), compared to comparable SEAs - District of Columbia Office of the State Superintendent (257), Rhode Island (211), and Delaware (224). Source for other SEAs: Study of State-level Education Costs in the District of Columbia, Government of the District of Columbia, 2007.

collecting the data elements and quality audits needed to provide a robust collection system for a statewide longitudinal data system (ndSLEDS).

The State of North Dakota has funded DPI and the Education Standards and Practices Board (ESPB) over \$1 million in the 2007 biennium to rewrite existing 25 year old mainframe applications for foundation aid, teacher licensure and school approval and accreditation which were not capable of supplying longitudinal data. The North Dakota Department of Career and Technical Education (CTE) and DPI also began investigating data collections and determined that duplicate collections existed. As a result, CTE retired an online collection system by adding additional elements to STARS. DPI's, ESPB's and CTE's understanding of the need for preparing for a longitudinal data system and the importance of data quality yielded combined projects to consolidate systems and use a single state education database to form a master data management strategy for achieving a 'single version of the truth.'

In 2006 DPI, school districts and special education units, began work to establish a single statewide special education data system that provides on-line capacity to manage and develop Individualized Education Programs (IEPs), meets state and federal reporting requirements, reduces the reporting burden on the special education units, and meets the State's master data management strategy. All data that districts must supply to the special education data system pass through STARS to eliminate duplicate data collections. The statewide special education data system completed implementation in September 2008.

Needs to Be Met by ndSLEDS

STARS is the primary operational data store responsible for collecting data from school districts. STARS provides limited reporting back to school districts as it concentrates on data collection validations and has no real capacity to allow external access for mining its longitudinal data to conduct research or analysis. As described in Objective #2 below, STARS requires extensive manual compilation from multiple data sources to meet federal and state reporting requirements. North Dakota education stakeholders need a tool that allows them to access and analyze data on student academic growth and achievement at the school level. There are three primary needs:

- Need for usable, timely, and quality data
- Provision of data and analysis tools to schools
- Training of teachers and administrators to use data to improve student achievement

Usable, Timely, Quality Data

STARS is missing data and linkages in core areas, including the linkage of teacher to course and student data. Districts need to improve availability of education data to stakeholders for analysis of student achievement. Most districts do not properly track staff data, hindering their ability to better support educators in raising student achievement. STARS also lacks formative assessment data to provide timely interventions to students in need of additional academic support. Further, STARS does not meet four of the Data Quality Campaign's (DQC) ten essential elements for an efficacious SLDS, including:

- A teacher identifier system that matches teachers to courses to students

- Student-level transcript information, such as courses completed and grades earned
- Student-level college readiness test scores
- Ability to match students from P-12 and higher education systems

Provision of Data and Analysis Tools to Schools

To transform North Dakota’s raw natural data resources into a rich array of knowledge and lessons learned, North Dakota must plan, design, develop, and implement a statewide longitudinal data system, to be named “ndSLEDS,” the North Dakota Statewide Longitudinal Education Data System. The core technical components needed for ndSLEDS are described in more detail in the Project Design section and include:

- Source data systems
- A robust data dictionary and data model
- Hardware and data warehouse platform
- Extract, transformation, and loading software and/or processes
- Business intelligence toolset
- Privacy and security protection

Training and Governance

Improved and new data and technology alone are not sufficient to transform how data are used within the state to achieve the student achievement goals of NCLB. The system must provide training and support for users and be properly governed and managed especially as it serves as the basis for data sharing among state agencies.

In 2007, the State Legislature authorized the Information Technology Department (ITD) to form a Statewide Longitudinal Data System Committee to plan for and propose a SLDS capable of disseminating data on North Dakota Workforce Intelligence and Education Outcomes. The committee hired a consultant to develop a strategic roadmap for establishing a Workforce SLDS. The roadmap made a priority recommendation for the development of a K-12 SLDS and a separate higher education SLDS that can contribute to the future statewide Workforce Intelligence and Education Outcomes Longitudinal Data System. The roadmap recognized an education SLDS as the fundamental component of a comprehensive statewide multi-agency data system capable of studying services provided to North Dakota’s citizens across the P-20 education and workforce spectrum.

Objectives for Proposed System

North Dakota is applying for funding to create a K-12 SLDS and link K-12 data with data from agencies outside of the state education agency (SEA). North Dakota has nine objectives for the proposed K-12 SLDS grant that will meet the needs described above. A crosswalk of how each objective meets the needs of North Dakota is below.

North Dakota LDS Need	ndSLEDS Objective
Usable, Timely, Quality Data	Obj. #1 Improve student achievement and reduce gaps among student achievement by providing transparent and longitudinal

North Dakota LDS Need	ndSLEDS Objective
	<p>formative and summative assessment data at the item level by student.</p> <p>Obj. #5 Meet all 10 Data Quality Campaign elements of a successful Longitudinal Data System, providing a data system that is comprehensively relevant, user-friendly, accurate, and secure.</p> <p>Obj. #6 Link student high school performance with workforce unemployment insurance.</p> <p>Obj. #9 Enable the electronic transfer of student grades by course (eTranscripts) from 9-12 among districts and to institutions of higher education.</p>
<p>Provision of Data and Analysis Tools to Schools</p>	<p>Obj. #2 Improve the data collection and reporting process for state and federal reports by automating and consolidating data collections to provide transparent, timely and quality source of data available to districts and program administrators.</p> <p>Obj. #7 Plan, design, implement and support a statewide longitudinal education data system comprised of a robust data dictionary, data model, extract, transformation and loading processes, and business intelligence toolset.</p> <p>Obj. #8 Provide secure accessibility of the Statewide Longitudinal Data System to all districts and other appropriate stakeholders (subject to FERPA).</p>
<p>Training and Governance</p>	<p>Obj. #3 Provide a governance structure that collaboratively sets direction, drives full participation, and validates data quality.</p> <p>Obj. #4 Provide universal training and support to improve data quality and use.</p>

Objective #1: Improve student achievement and reduce gaps among student achievement by providing transparent and longitudinal formative and summative assessment data at the item level by student. Begin to establish the data infrastructure to assess the impact of professional development on teaching and learning. Initiate statewide agreement on the data elements required and ways to categorize professional development within the state. Support analysis of the impact of professional development on student outcomes as a priority research area for the North Dakota higher education and educational research communities.

Outcome: Districts will have access to ndSLEDS data marts of three years of longitudinal assessment data at the item level, and teacher data linked to courses and students.

Current system: Summative assessment data are currently collected, but are not readily available to stakeholders outside the DPI. Formative assessment data are not widely collected or

analyzed. DPI is currently working with the Governor's office on behalf of educational constituents to fund the use of formative assessments for all districts. Professional development data are not readily available from districts.

Proposed system: DPI will form a professional development committee to spearhead the collection and addition of professional development data to the ndSLEDS data warehouse to assess the impact on student achievement. DPI will procure an enterprise web based business intelligence (BI) tool. The BI environment will provide the longitudinal data from the SLDS to appropriate stakeholders in a secured role-based structure that meets FERPA requirements.

Objective #2 Improve the data collection and reporting process for state and federal reports by automating and consolidating data collections to provide transparent, timely and quality data available to districts and program administrators.

Outcome: A single, stable repository of data for consistent federal and state reporting will be created providing districts and program administrators quality and timely data. State and school district data administrators will identify, test and pilot an enterprise strategy for replacing manual file extractions and reporting with automated data exchanges.

Current system: STARS requires districts to manually upload or directly input data into its system. School districts' reporting requirements have increased to nearly daily uploads resulting in undue burden on the districts. Data submitted into STARS are not available for districts to readily access or in formats that provide the districts feedback. There remain manual data collections that lack validations, quality and coordination with State and district data stewards. North Dakota demographics are extreme. The more than 100 of North Dakota's school districts are considered small, local school districts and do not have the resources to implement and support a student information system (SIS) nor data warehouses.

Proposed system: This inequity in district capacity may only be addressed through enterprise architecture and centralized services for support and training. ndSLEDS will build upon the North Dakota education enterprise architecture comprised of a single state education database, the statewide special education data system and the state's initiative to fund and support a statewide SIS. STARS will be enhanced to include data collections that are manual today and to supply ndSLEDS with these elements and the *EDFacts* reports.

DPI and school districts are very interested in implementing Schools Interoperability Framework (SIF) to standardize and automate data collections and benefit from SIF's data exchanges to other entities. This project will procure a consultant who will evaluate and recommend how DPI can develop the enterprise architecture to more cost effectively create an SLDS that automates data collections, and validates and corrects data errors at the source. Additionally, the consultant will recommend a short-term and long-term strategy for integrating the SIF architecture into DPI's and the districts' enterprise architecture. The project will conduct a pilot program to implement SIF based on consultant recommendations.

Objective #3: Provide a governance structure that collaboratively sets direction, drives full participation, and validates data quality.

Outcomes: The Data Governance charter will be created. Periodic checks on districts' success in meeting data standards will be instituted.

Current system: DPI lacks a comprehensive data governance system to ensure institutional collaboration and support, and consistency, accuracy and quality of data. The DPI Data Advisory Council (DAC) consists of 13 members representing eight districts and three state agencies (DPI, CTE, and the Education Technology Council). The DAC is responsible for addressing DPI data reporting issues, including data management, and data confidentiality and access. The DAC is not a legislatively authorized body that can officially rule on data definitions, require data submissions, or mandate data audit and verification procedures. There is also a lack of structure and resources at the district level to provide adequate data stewardship and verification of data.

Proposed system: Building on the successful governance structures that have been established in other states, DPI will expand DAC membership create a formal data governance structure as described in Project Design, Phase 1, and supported by the Governor and ND Legislature. DPI will also create a master data management plan to establish structure and resources at the district level, with the goal of providing adequate data stewardship and verification of data. The data governance system will establish a process for continuous improvement of data quality and sharing among programs.

Objective #4: Provide universal training and support to improve data quality and use.

Outcomes: Districts will have administrators, teachers and other relevant stakeholders trained as “super-users” who will train remaining district stakeholders through a train-the-trainer model.

Current system: North Dakota invests some dollars in training a portion of educators to use data, but lacks the resources for statewide training and support of a SLDS. While the number of classroom teachers collaborating on item analysis of assessments to pinpoint student strengths and weaknesses and differentiate instruction accordingly has increased, much more training is needed. There is no comprehensive statewide support structure for helping stakeholders discuss and resolve issues related to data-driven decision making, as well as, research, learn and promulgate best practices.

The State also participates in NCES forums and CCSSO events related to longitudinal data systems.

Proposed system: In cooperation with local school districts, DPI will train relevant stakeholders as “super-users”.

Because data quality must begin at the source of the data, training will emphasize the need for adhering to consistent data policies and outline training procedures for all staff that generate key data elements. Super-users will train remaining district stakeholders within their districts through a train-the-trainer model. REAs will receive additional training and provide ongoing consultation and support to districts. For very small districts, regional education staff will serve as the district trainers. Satisfaction with training will be measured through questionnaires distributed at the end of training. On-line surveys will be sent periodically after training to assess perceived impact of ndSLEDS on instructional practice and student achievement. In addition, annual data retreats will be supported in every district and REA to review reports generated by ndSLEDS and assist teaching staff in using those reports to modify instruction.

Objective #5: Meet all 10 Data Quality Campaign elements of a successful Longitudinal Data System, providing a data system that is comprehensively relevant, user-friendly, accurate, and

secure.

Outcome: All ten Data Quality Campaign elements will be met.

Current system: DPI has been engaged in achieving the ten elements of the DQC and evaluates policy and systems regularly on opportunities to achieve all elements. DPI has realized six of the ten elements today and has prepared for the implementation of the remaining elements as much as possible.

Proposed system: DPI realizes that the DQC ten elements form the foundation of a comprehensive longitudinal data system and will fulfill the remaining four elements by enhancing the STARS system to collect additional data elements, implementing automated data reporting, and developing and implementing data policies and procedures.

In order to meet all ten data quality campaign elements and supply this information to ndSLEDS, North Dakota will need to do the following:

- DQC Element #5 - A teacher identifier system that matches teachers to courses to students: While North Dakota has established a unique teacher id and quality assurances of two teachers not sharing ids, North Dakota has not completed the linkage of teachers to courses and to students. North Dakota will change its data collection system to collect this information at all grade levels within the STARS collection system, as well as leverage SIF student record exchanges and vertical reporting to automate the collections as described in Objective 2. North Dakota is well positioned to succeed in this task as state course code alignment is well established. DPI can leverage the experiences of North Dakota districts that have implemented their own data warehouses to address this challenge.
- DQC Element #6 - Student-level transcript information, including information on courses completed and grades earned: North Dakota will change its data collection system to include grades and course completion records, and will utilize SIF.
- DQC Element #7 - Student-level college readiness test scores: North Dakota will design and implement the data warehouse with ACT, SAT, and Advanced Placement exams results.
- DQC Element #9³ - Ability to match students from ndSLEDS to higher education systems: North Dakota districts and the North Dakota University System (NDUS) are currently implementing a policy that includes state student identifiers on high school transcripts. All North Dakota Institutions of Higher Education (IHEs) will collect the identifier from the transcripts. Additionally DPI and NDUS are currently working together to electronically provide historical student ids to IHEs in order to populate the state student ids within IHEs.

Objective #6: Link student high school performance data with workforce unemployment insurance data to accomplish two goals: 1) enable research on how students' academic

³ While addressing this element is out of the scope of this grant, this grant provides the foundation for enabling this element and North Dakota has committed resources to achieve this element.

performance impacts workforce success and progress post-graduation., and 2) measure the impact of work on the academic performance of students who maintain jobs while attending high school.

Outcome: Create a datamart which combines North Dakota students to unemployment insurance wage and employment data to allow for research on student outcomes.

Current system: Education and workforce research is conducted using flat file data extracts, but low matching rates limits the value of the research.

Proposed system: CTE and DPI will have a joint data mart enabling them to research workforce status and high school performance. The system will utilize a probabilistic matching engine DPI is currently implementing which results in higher match rates to deliver larger data sets capable of meaningful research.

Objective #7: Plan, design, implement, and support a statewide longitudinal education data system comprised of a robust data dictionary, data model, extract, transformation and loading processes, and business intelligence toolset.

Outcome: A successful pilot of ndSLEDS will be implemented in Year 2. The statewide roll-out of ndSLEDS will be completed in Year 3.

Current system: “The State Automated Reporting System (STARS) is an ASP .Net application utilizing SQL Server 2005, recently deployed in the fall of 2007. This system is a replacement of the first generation data collection system implemented in 2001. Districts are required to report data to DPI three times per year, however STARS is available year round and many districts use STARS on a daily or weekly basis. STARS primarily collects: student enrollment information within a district and school; student program services such as 504, ELL, Title I, Migrant, etc.; Licensed Personnel and the courses/units they instruct aligned with a state course code, Non Licensed Personnel, Title I consolidated application, and a variety of other programs.

“North Dakota does have a state student identifier which is implemented through STARS by means of an online interface. Districts needing to assign many student ids will send a file to DPI who in-turn runs a routine to determine probabilistic matches and assign new ids and returns the file to the district; this is an iterative process.

“North Dakota does have a Teacher License Number issued that is not the SSN.”⁴

Proposed system: STARS will serve as one of the operational data stores from which data will be extracted to ndSLEDS. DPI will manage the planning, design, development, and implementation of the ndSLEDS (see enterprise architecture). The planning and design phases of this project will evaluate the available data sources to determine the highest quality and viable data sources; STARS, student information systems (SIS) via SIF, district data warehouses and direct access to SIS databases. Existing data stores will be cleaned and new data stores will be added as necessary. The data dictionary will be improved to include other data sources outside of DPI, which will provide the toolsets needed to better manage metadata. Web-based data marts accessible via business intelligence tools will be created from requirements identified in the project planning based on input from district administrators, teachers, parents, DPI program

⁴From RFP issued to provide a report for the planning and budgeting of Statewide Longitudinal Data Systems primarily focused on our PK-12, Higher Education and Workforce development initiatives.

managers, researchers, legislators and other key stakeholders.

Objective #8: Provide accessibility of key data via ndSLEDS to all districts and other appropriate stakeholders (subject to FERPA). This objective ensures student privacy is protected while reducing the inequity of data resources among districts, furthering educational research, and enabling districts, schools and teachers to improve their curriculum and instructional strategies.

Outcome: All of North Dakota districts will have secure access to data via ndSLEDS.

Current system: North Dakota education data including student assessment, teacher qualifications, education program, school finance data and others are not available for analysis through a web-based business intelligence tool.

Proposed system: Web-based data marts will be created based on stakeholder needs identified in project planning requirements sessions. DPI will compile a list of named users (subject to role-based security) and provide access to appropriate data marts (subject to FERPA requirements) via ndSLEDS. DPI will procure sufficient business intelligence licenses to meet estimated usage demand.

Objective #9: Enable the electronic transfer of student grades by course (eTranscripts) from 9-12 among districts and to institutions of higher education.

Outcome: Student records will be electronically transferred in 2011.

Current system: STARS currently doesn't have student grades by course or the ability to electronically transfer student course information among institutions. North Dakota needs the ability to provide data transition from high school to college and between districts to transfer electronic data about students in a timely manner.

Proposed system: Districts will be capable of transferring student record transcript information to college or other districts.

Project Design

North Dakota's Project Design is based on the activities required to create a statewide longitudinal data warehousing system, ndSLEDS. The Project Design occurs in five phases implemented over a four-year timeline and is comprised of the following core design components:

ndSLEDS Project Phase	Project Design Component
Phase 1 ndSLEDS Project Initiation and Structure	<ul style="list-style-type: none"> • Data Governance • Project Management • RFP Development
Phase 2 ndSLEDS Infrastructure Initiatives	<ul style="list-style-type: none"> • Plan and Execute SIF Pilot • Expand Data Dictionary • Enhance STARS
Phase 3	<ul style="list-style-type: none"> • Project/Program Planning

ndSLEDS Project Phase	Project Design Component
Build and Pilot ndSLEDS	<ul style="list-style-type: none"> • Design, and Development of Data Warehouse • Business Intelligence Tool • ndSLEDS Pilot
Phase 4 Conduct Statewide Roll-out and Training of ndSLEDS	<ul style="list-style-type: none"> • Staged Roll-out • Statewide Training
Phase 5 Enhance and Sustain ndSLEDS	<ul style="list-style-type: none"> • Design and Implement eTranscript Initiative • Design and Implement Workforce Data Integration • Execute Support Plan • Implement System Enhancements • Provide Ongoing Training

Details for each project design component are provided below. Descriptions include objectives accomplished, requirements met, requirements needing to be developed, and approach.

Phase 1: ndSLEDS Project Initiation and Structure

<p>Design Components: Data Governance, Project Management, and RFP Development</p>
<p>Proposed Objective(s) Accomplished: Objective #3</p>
<p>Requirements Met:</p> <p>Governance and Data Quality - DPI established the DAC to form the beginnings of data governance between DPI and school districts. Through the past four years the DAC has advised all aspects of new data collections and the design of new systems. The current data governance has responded to these short-term cyclic needs for decisions, agreements, and communications in an informal fashion creating subcommittees when needed. While the current structure may respond to terminable projects, it must formalize governance and data stewardship to implement and maintain an enterprise data collection system and longitudinal data system.</p>
<p>Requirements Needing to be Developed:</p> <p>Governance – DPI needs to establish a statewide governance model that expands the scope and quality of data and identifies key entities and positions responsible for operating ndSLEDS at the state, regional and local educational agency level (for data quality and validation purposes). North Dakota also needs to create a project management structure and plan for implementing ndSLEDS.</p> <p>Data Quality – North Dakota needs to develop an ongoing plan for training those entering or using data, as well as procedures for monitoring the accuracy of information.</p>
<p>Approach:</p> <p>DPI will create a formal data governance structure. The support from the Governor and Legislature is expected to support DPI in developing and sustaining structured data governance. The following governance structure will be formed to design, implement and manage ndSLEDS</p>

data collections.

State Education Data Policy Committee (DPC)

The Data Policy Committee will be comprised of senior DPI, CTE and ESPB officials. These agencies are the custodians of the data which comprise the state education database and ndSLEDS. The committee ensures the data governance mission and objectives align with and support the goals of the agencies and programs participating in the ndSLEDS and data collections. The Data Policy Committee addresses any data issues that cannot be resolved by the Data Management Committee (see below), or other data stakeholders. The Data Policy Committee also provides support to the Data Management Committee and data stewards, as needed, in implementing data governance policies.

The Committee is responsible for privacy policy and ensures adherence to FERPA and all other state or federal data privacy policies. Data sharing agreements with entities and efforts within and outside the P-12 education such as Department of Human Services, ND Universities, research communities, and workforce intelligence initiatives will be approved and governed through this committee and the Data Research and Collaboration Data Stewardship Committee.

Data Management Committee (DMC)

The DMC will supersede the existing DAC and be comprised of the existing eight representatives from districts and additionally the DPI Data Quality Manager, the DPC representatives from DPI, CTE and ESPB, an ED*Facts* coordinator, a district superintendent, DPI technical staff, and district technical staff. The DMC will proactively define and align rules affecting data collections and usage, including privacy. DMC members will construct data stewardship subcommittees comprised of DMC members and program managers at the SEA and district level and provide a resolution to any data issues

Data Stewardship Committees

The Data Stewardship Committees will be created as subcommittees of the DMC. The stewardship committees will be responsible for data elements comprising their domains and will provide data definitions and quality standards published through the data dictionary. The stewardship committees will coordinate between themselves for common data elements and the Data Management Committee to determine methods of enforcing quality through validations at the source. Training and usage standards will be developed and published by the subcommittees. Each subcommittee will develop a process of auditing data for completeness and integrity and conduct the audits on an appropriate schedule. A process of auditing and evaluating the SLDS published reports will be created to evaluate and monitor privacy and accuracy of data usage. The stewardship committees will report their activities to the DMC to ensure proper coordination across data domains and to serve as an added check for data consistency.

Subcommittees	Responsibilities
Data Collection	Creation of uniform data collection process within the SIS systems, SIF manifests, student record exchange and SLDS. All data stewards will coordinate their collections through this committee and ensure data validations and quality are applied during the collection process.
Data Dictionary	Compiling data definitions and standards from domain subcommittees.

	coordinating and monitoring data elements that cross domains, and publishing the data dictionary.
Program Areas	Specific program areas will be created with DMC members, SEA and district representatives that are engaged in the specific data domain. The responsibilities include auditing data elements for usefulness, auditing the reports utilizing these elements and identifying new elements.
Assessment	Collection/report usage of all summative and formative assessment data.
Teacher Licensure	Teacher licensure data and usage in ndSLEDS.
Career & Technical Education	Usage of CTE data elements and coordinating CTE and K12 common data elements.
Data Research and Collaboration	Creation and auditing of data sharing agreements. An inventory of data elements that are exported and imported will be maintained and audited for quality and appropriateness. Audits of exported data usage will be conducted and made available to the DMC and DPC.

Project Management

In this component, North Dakota will organize team resources and establish the detailed project scope. In addition, the team will begin work on creating deliverable templates and setting up the project management structure. The approach for this complies with the Project Management Institute’s Project Management Body of Knowledge (PMBOK) standards and is described in the Project Management Plan (Section e) below.

RFP Development and Contractor Selection

DPI’s approach to developing ndSLEDS will be to contract with a third party for establishing the data warehouse. DPI does not have the internal resources to plan, design, develop and implement a data warehouse. DPI also believes that qualified vendors have developed best practice data models and implementation approaches that can be leveraged for North Dakota without reinventing the wheel. DPI will assign resources to work collaboratively with the vendor team to enable support of DPI as described in the Sustainability section below. DPI will write an RFP for creation of the ndSLEDS data warehouse and distribute it to qualified vendors. DPI will create an evaluation committee composed of representatives from K-12 districts, ITD, CTE, and ESPB, and a set of processes and protocol to select a vendor.

Phase 2: ndSLEDS Infrastructure Initiatives

Design Components: Plan and Execute SIF Pilot, Expand Data Dictionary, Enhance STARS

Proposed Objective(s) Accomplished: Objective #2(b), and portions of Objectives #5, and #7,

Requirements Met:

Data Quality- North Dakota has established a data dictionary internally and continues to build on the definitions.

Requirements Needing to be Developed:

Data Quality – ndSLEDS will need to improve data quality at the data source. Validations currently are at the state level post-submission which creates multiple iterations of uploads. DPI adds more validations on a yearly basis which further burdens the districts to achieve quality data after their data collections are complete. They are not able to proactively change their collection systems and processes until after the fact. Implementation of SIF will facilitate data validations at the source. Additionally, data stewardship committees will be engaged in further developing the data dictionary, contributing to greater data consistency at the source.

Interoperability - Collecting data from districts will apply an enterprise approach like that used for establishing ndSLEDS. North Dakota expects to receive state funding and support for a current initiative to adopt and fund a statewide SIS for all school districts to implement by May of 2012. The systems will be hosted centrally within ITD. The ndSLEDS project will build upon this local data architecture and provide a budget and proof of concept for North Dakota to automate data collections from the districts. The SIF will be installed and tested. Additionally, evaluations of the architecture will be conducted to take advantage of this enterprise approach.

Federal Reporting - Combining a statewide SIS with SIF is expected to reduce the local reporting burden.

Approach:**SIF Pilot**

The Schools Interoperability Framework will be installed and piloted. This effort will determine the value SIF can contribute to the state selected SIS for reducing the burden on district reporting through automated data collections. Student Record Locator, the Student Record Exchange and vertical reporting will be implemented to identify the extent of element collection that can be realized through this architecture. Results are expected to deliver a cost benefit analysis of reduced district labor which will justify statewide purchasing in the following biennium.

Data Dictionary Expansion and STARS Enhancement

DPI will expand on its current data dictionary to incorporate additional elements, including elements discovered during the SIF pilot which STARS will be expanded to collect. The data stewardship committees will engage in this process and become responsible for the element definitions and usage, as well as determining the proper validations and where validations should occur, always striving for validations at the source.

DPI will begin developing an enterprise metadata management strategy to identify the requirements and the incorporation of the data dictionary. This effort will define the methodology to be used for the development of the data warehouse.

Phase 3: Build and Pilot ndSLEDS

Design Components: Data Warehouse, Business Intelligence Tool, ndSLEDS Pilot

Proposed Objective(s) Accomplished: Objective 7.

Requirements Met:

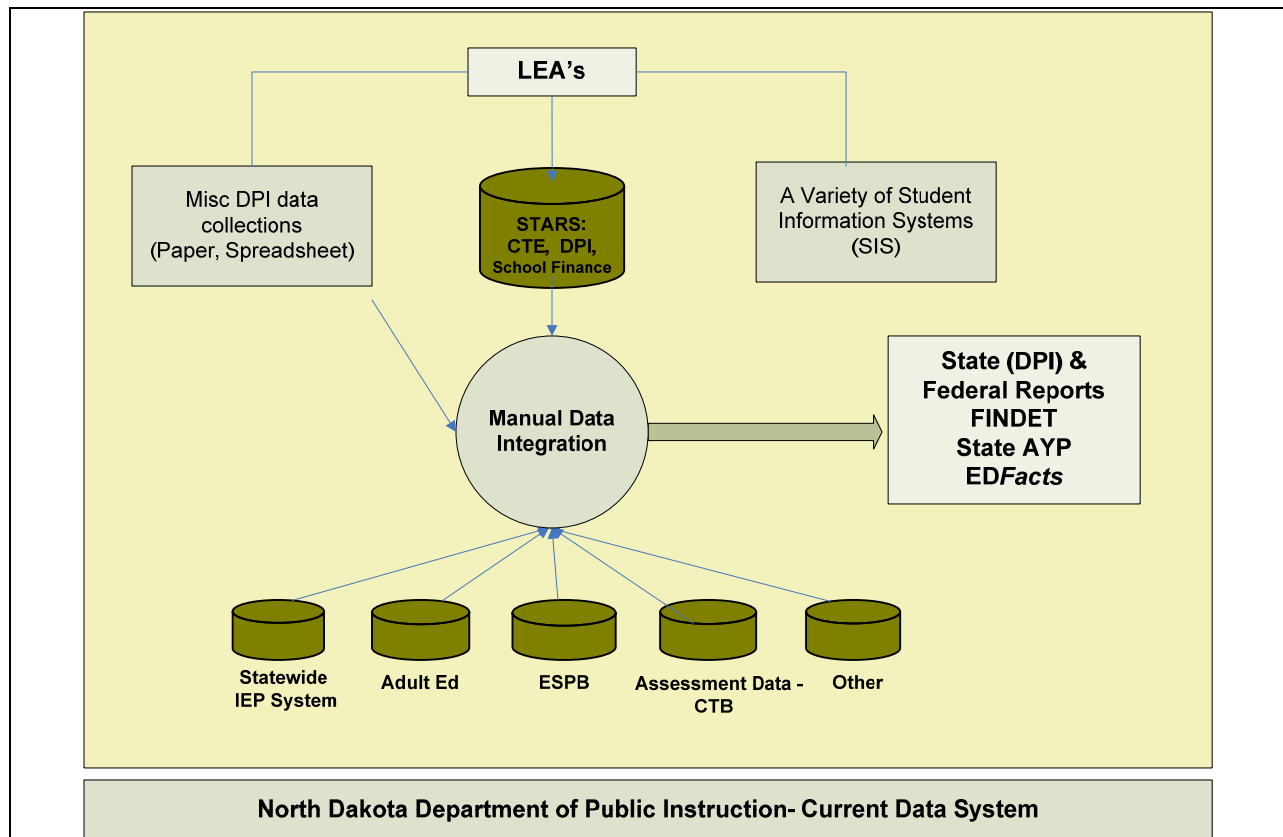
Needs and Uses – DPI used Federal NCLB Title II, Part D funds to create professional learning communities to build district capacity. Specifically, teachers learned how to use assessment item-level information to analyze student performance and improve instructional practice. Of the state's 184 school districts, five districts participated in introductory and data retreats in 2007-2008. In addition, North Dakota's Math-Science partnership program tracks student achievement in math and science using CTB assessment data. Teachers get an electronic summary of item level analysis, but it is in a spreadsheet format and presumes comfort with the data dictionary, which many teachers do not have.

Privacy Protection and Data Accessibility – North Dakota currently complies with FERPA requirements.

Enterprise-Wide Architecture – DPI and its partners ESPB, CTE, ITD, EduTech and school districts have implemented enterprise architecture for education in North Dakota. A state education database comprising data from CTE, ESPB and DPI forms the foundation of a single operational system for storing and collecting K-12 education data. The statewide special education data system is a single system chosen by DPI and North Dakota Special Education Units and districts that integrate with the state education database for ensuring single data collections.

Leveraging enterprise architecture is not new to DPI or most state agencies in North Dakota; the demographics in North Dakota do not afford North Dakota alternatives. The more than 100 small local school districts do not have the resources to implement and support a SIS nor data warehouses. This inequity in district capacity may only be addressed through enterprise architecture and centralized services for support and training.

As shown in the diagram below, North Dakota's current enterprise-architecture is a data collection and reporting system that involves extensive manual effort.



Requirements Needing to be Developed:

Needs and Uses – North Dakota needs to better understand the needs and uses of data to improve student achievement and reduce achievement gaps among students for its district and school administrators, teachers, researchers, legislators, parents, and other stakeholders. For example, North Dakota recognizes the immediate need to provide item level analysis by student to teachers to enable disaggregated analysis of their students. Through ndSLEDS, North Dakota will make data more visual and more impactful, replacing spreadsheets with more sophisticated analytical and reporting tools. Stakeholders will log in and see a real-time dashboard of what is happening within their own district, school, or classroom so they can better analyze how to improve student achievement. The provision of this data will enable improved data-driven decision making and advance professional practice throughout the state.

Establishing ndSLEDS and linking students to teachers to courses to grades will allow North Dakota to look at a specific program and how that program impacts student achievement. For example the state’s Math-Science Partnership program aims to strengthen student knowledge and skills by enhancing teachers’ content knowledge and teaching skills. The Math-Science Partnership Program assesses teacher improvement and subsequent impact on students. North Dakota will also collect the highly detailed data required to discern discrepancies on local grading compared to objective assessment measures.

As the core operational data store for ndSLEDS, enhancement of STARS will improve the data quality, availability, and timeliness. North Dakota will continue to analyze performance of STARS and define requirements through focus group sessions with stakeholders and review of

help desk/support issues. As STARS is also critical to collecting inter-agency data, its enhancement will support expansion efforts to align ndSLEDS data with higher education and workforce data.

Privacy Protection and Data Accessibility – North Dakota will create enterprise policies, procedures and rules regarding the protection of student data to ensure compliance with FERPA in all areas, including data reporting, data accessibility, and providing data to the research community. For example, North Dakota proposes reporting student data by the regions to provide a mechanism for aggregating data (e.g., into groups such as, small, rural, high needs based) so individual students are not identified. To support the state’s research community, North Dakota will pursue a “de-identification” approach where DPI will form an agreement with research groups to provide a data mart that complies with FERPA standards, while still providing the fine grain level of data. All data presented over the web will be protected with the highest levels of security and access.

Enterprise-Wide Architecture – North Dakota needs to develop an enterprise-wide data architecture that links records across LEAs and data elements across time and that allows for longitudinal analysis of student data.

Approach:

Project/Program Planning

The purpose of the Project/Program Planning is to identify the user needs and uses of the system, as well as create the project templates, standards, and overall planning documents. Requirements definition is the collection of information needed to ensure ndSLEDS meets the needs of all users. System planning is the development of the tasks, deliverables and resources required to accomplish project objectives. The ndSLEDS project will include the development of communication, change management, training, security, and testing plans.

The project team will finalize functional requirements through interviews and focus group sessions of stakeholder groups (e.g., districts, teachers, DPI program managers). These focus groups will identify a prioritized list of report/data needs (e.g., data and use, data accessibility/presentation, security, frequency, source data, distribution) and core issues (e.g., data quality, data availability, and authoritative source).

Plans will be developed in the following areas:

Communication – Formalized communication process and means by which to reach each ndSLEDS stakeholder group (e.g., face-to-face meetings, newsletter, e-mail, website, conference calls); also provides master communication schedule providing a calendar of when information is distributed to whom.

Training - Describes user groups and skills/courses required to help each user group learn how to use ndSLEDS to improve student outcomes. Describes how training will be provided (e.g., instructor-led, web-based tutorial). Calculates how many trainers are needed based on the curriculum and estimated class sizes. Lays out the statewide strategies for developing professional practice communities based on data-driven decision-making.

Change Management – Identifies user/stakeholder resistance to change and strategies to overcome resistance, including communications, training, meetings, and incentive programs (e.g., award/recognition programs). Identifies organizational structural, job description, and policy/procedural areas that impede effective implementation of ndSLEDS.

Security – Defines each authorized role allowed to access ndSLEDS, the components of ndSLEDS each role is able to see, and the functions each user can perform within ndSLEDS.

Testing – Outlines the testing procedures required to ensure ndSLEDS’ quality, including system testing, data quality testing, and user testing.

Design and Development: Enterprise-Wide Architecture

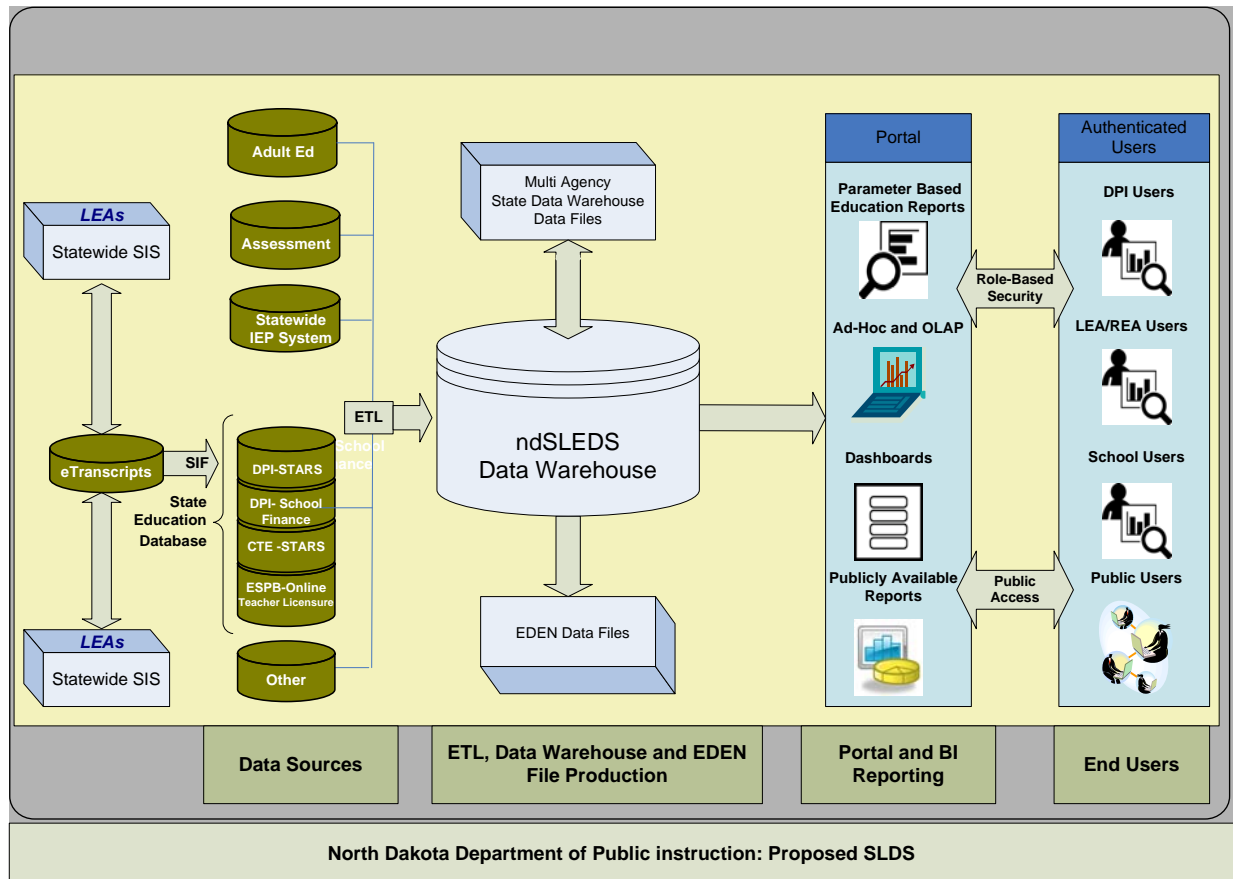
North Dakota’s approach to designing and developing an enterprise-wide architecture is to build upon the North Dakota education enterprise architecture and implement an enterprise data warehouse housing all districts’ longitudinal data. The business intelligence tool that is selected will be an enterprise product capable of scaling to all 8,000 North Dakota teachers in a secured environment.

Collecting data from districts will apply an enterprise approach as well. North Dakota is currently working to adopt and fund a statewide SIS for all school districts and anticipates achieving 100 percent participation among districts by May 2012. The systems will be hosted centrally within the Information Technology Department.. DPI will apply an enterprise approach to automating the data collection and student locator by utilizing SIF. Additionally DPI will evaluate the enterprise architecture established to take advantage of this architecture to determine the most cost effective means of collecting data.

Interoperability - ndSLEDS will provide further automation of *EDFacts* data collection, and faster compilation of SLDS data. This project will automate the collection of district data by providing electronic generation of student identifiers utilizing SIF with district SIS systems and additionally automating the collection of data elements for state and federal reporting utilizing vertical SIF reporting solutions and direct database access. ndSLEDS will also serve as the foundation for research initiatives in the workforce and post-secondary arenas.

As shown in the diagram below, the design approach for ndSLEDS is to build a statewide foundational longitudinal data system that consolidates critical K-12 data sources into one digital repository and provides this data to a wide array of stakeholders including teachers, administrators, legislators, state agency personnel, and the general public. North Dakota’s current state education data base, comprised of DPI-STARS, school finance, CTE-STARS, and ESPB On-Line Teacher Licensing will become an operational data store providing core district student demographic, financial, teacher and course and grade information. ndSLEDS will integrate with the statewide special education data system (IEP system), TIENET, for special education data, and include extractions from assessment and adult education sources as well. ndSLEDS will encompass the majority of data required for *EDFacts* reporting. Data will be accessed by users through a portal that requires user authentication based on defined roles. Data

will be presented through an array of tools and views including, parameter-based education reports, ad-hoc queries, dashboards, and publicly available reports.



Business Intelligence Tool

DPI will procure an enterprise web-based business intelligence (BI) tool. The BI environment will provide the longitudinal data from the SLDS to appropriate stakeholders in a secured role-based structure that meets FERPA requirements. Data will be provided in an array of transparent, user-friendly methods as described in the Enterprise Architecture entry,

ndSLEDS Pilot

DPI will provide an initial introduction of ndSLEDS to a small group of districts--the ndSLEDS Pilot. The purpose of the ndSLEDS Pilot is to ensure that ndSLEDS meets user needs and operational performance measures. Communication and training materials will also be assessed. Based on user feedback, DPI will make program and system improvements in preparation for the statewide roll-out.

Phase 4: Statewide Roll-out of ndSLEDS and Statewide Training

Design Components: Staged Roll-out of ndSLEDS, Statewide Training

Proposed Objective(s) Accomplished: Objectives 1, 4, 7, and 8.

Requirements Met:

Since Phase 4 is an extension of Phase 3 activities, expanding from a pilot system to a statewide application of ndSLEDS, please refer to the Phase 3 ‘Requirements Met’ section.

Requirements Needing to be Developed:

The requirements needing to be developed in Phase 3 also apply to Phase 4 of the project design. The requirements developed in Phase 3 at a pilot level would then be extended to the full state for the Phase 4 Statewide Roll-out of ndSLEDS. An additional requirement needing to be developed is included below.

Data Quality – As ndSLEDS is released statewide, there will be a need to train all education stakeholders to give them an understanding of the system, its data sources, and how data can be accessed, analyzed and transformed into knowledge that drives educational improvements at all levels. Since quality data is an essential part of the success of ndSLEDS, it is imperative that ndSLEDS training instruct data stewards and all stakeholders on data policies that ensure the integrity, security and proper use of information that feeds into and out of ndSLEDS.

Approach:

Staged Roll-out

Based on the results of the ndSLEDS Pilot in Phase 3, DPI will make documented improvements in all areas including, governance, project management, system functionality, technical architecture, and training and communication materials. DPI will develop a roll-out strategy to make ndSLEDS available to districts on a phased basis to allow for a carefully managed and resource-efficient implementation. A staged process will help provide adequate levels of support for new users and capitalize on opportunities for improvement as they occur.

Statewide Training

DPI will identify user groups and skills/courses required to help each user group learn how to use ndSLEDS to improve student outcomes such as increased student achievement and graduation rates. DPI will develop a statewide training plan identifying how training will be provided (e.g., instructor-led, web-based tutorial). The training plan will identify how many trainers are needed based on the curriculum and estimated class sizes. Training will include use of actual student data relevant to the user’s role to “conduct longitudinal analysis, analysis of cohorts, and analysis of individual student performance at the learner outcome level. This will help teachers adjust lesson plans, content and delivery as needed to meet individual group needs.”⁵ In addition to evidence-based decision making, training will instruct data practitioners in data policies to improve data quality and consistency at the source. Upon acceptance of the training plan, the training materials will be developed and training courses will be delivered to education stakeholders throughout the state.

⁵ Business case for a student data reporting system, DPI, July 2002.

Phase 5: Expand and Sustain ndSLEDS

Design Components: Design and Implement eTranscript Initiative, Design and Implement Workforce Data Integration, Execute Support Plan, Implement System Enhancements, Provide Ongoing Training

Proposed Objective(s) Accomplished: Objectives 1-4, 6, 8, and 9.

Requirements Met:

Interoperability – DPI’s current system allows for efficient data sharing from school district to state. Additionally, the state education database facilitates data sharing among its contributing agencies—DPI, CTE, and ESPB.

Sustainability – DPI currently provides support resources for the State data collections through their research and development staff members.

Requirements Needing to be Developed:

Needs and Uses – The ndSLEDS help desk will identify additional user needs based on analysis of calls into the help desk and user satisfaction surveys.

Interoperability – Adding electronic transcript capabilities to ndSLEDS will enable school districts to exchange student information among each other as students transfer facilitating higher data quality and continuation of key student services, especially for mobile student populations. Additionally, implementation of eTranscripts is needed to improve communication between K-12 and post secondary so students are better served.

Sustainability – North Dakota needs to establish a comprehensive support structure to provide resolution to user issues with ndSLEDS and associated data collections. In addition, North Dakota needs to develop and implement a continuous improvement process to iteratively improve ndSLEDS.

The DPI is working with the Governor and the Information Technology Department to establish the resources needed to sustain the North Dakota statewide SIS effort which will include the resources to support the expansion of student data into a statewide LDS. Additionally, the budgets will include the creation of personnel to provide training and ongoing research of educational data for the districts and regions.

Approach:

Design and Implement eTranscript Initiative

North Dakota will procure services that will allow school districts to exchange electronically transcript information for students in grades 9-12 and deliver such transcripts to institutions of higher education. Through eTranscripts, ndSLEDS will help schools ensure high school transfer students remain on track to graduate high school fully prepared to succeed in college or the workplace. The eTranscript system must employ the proper securities to protect student information. For example, it would not allow an eTranscript to be delivered to a higher education institution without parent or student permission.

Design and Implement Workforce Data Integration

DPI will work with CTE, and Job Service North Dakota to develop a data mart of shared data between the agencies. The agencies will identify data elements that will inform educators in preparing students for post-secondary education and the workforce, and inform Job Service North Dakota of career fields in which students have received training from DPI and CTE. Unemployment insurance data from Job Service North Dakota will be included in the data mart and probabilistic data matching will be used as a way of identifying students who have not returned to school or who qualify for special programs.

Execute Support Plan

North Dakota will provide an ongoing commitment of resources to sustain ndSLEDS after the initial implementation is complete. North Dakota's approach to ongoing operations and maintenance includes the following support structures:

North Dakota will provide a four-tiered support structure to help all users in resolving issues with ndSLEDS. Level 0 will be a list of frequently asked questions (FAQs) on the ndSLEDS website, along with a quick reference guide, and other ndSLEDS supporting material. Level 1 will be the designated Data Stewards at each district who will have been trained by the Data Governance Office (DGO) established in DPI by the Program Manager and Project Director. Level 2 will be through the REAs which will be supported through two new positions trained in data driven decision making on ndSLEDS. These trainers will be responsible for supporting and training regional resources to build their capacity.

Level 3 support is DPI's DGO which will provide policy and operational support for Level 1 Data Stewards and Level 2 REA resources, including, but not limited to:

- Facilitating and coordinating meetings of Data Stewards
- Collecting metrics and success measures and reporting them to data stakeholders
- Providing ongoing Stakeholder Care in the form of communication, access to information, record-keeping, and education/support
- Overseeing resolution of ndSLEDS bug/fixes and system enhancements
- Reporting on common issues and help desk trends

Implement System Enhancements

As the DPI's DGO collects and analyzes success metrics for ndSLEDS, including data quality, the office will identify ways to continuously improve the system. Each year, stretch targets will be set in goal areas and project success will be measured against achievement in these areas. Additionally, the DPC will annually identify any needed technical or data enhancements to ndSLEDS and will adopt and execute a plan for enhancement implementation.

Provide Ongoing Training

The structure and approach of the ndSLEDS training will serve as a structure for the DPC to provide ongoing training related to responsible use of data to improve education outcomes.

Institutional Support

Education of our citizens is by nature a complex and collaborative undertaking where many individuals, groups, and organizations contribute knowledge, expertise and support at all stages of life. North Dakota has a history of statewide collaboration, partly enabled by our small size, which has created a close-knit state community. Collaboration in the development of ndSLEDS is critically important to enable inter-agency agreements about data sharing, use and definitions, to conduct educational and workforce research and apply the results to the classroom, to provide targeted and effective professional development, and to smooth the transition of citizens as they move through life’s stages (i.e., birth to pre-k to elementary and secondary to post-secondary and/or the workforce). The table below describes the supporters of ndSLEDS and their role in its implementation, including authorization and/or support for development and implementation of ndSLEDS, commitment of resources, and for those sharing data, a common vision and objectives for ndSLEDS. Copies of letters of support for ndSLEDS are attached to the application.

Supporter	Role in ndSLEDS
ND Governor’s Office	The ND Governor supports the development of a statewide K-12 LDS. His office is available for consultation.
ND Legislature	The ND Legislature supports the building of longitudinal data systems. The legislative IT Committee is committed to supporting this system.
North Dakota University System	Will advise DPI in development and identification of essential elements for collection. Will serve as partner in development of the governance process. Provide any research pertaining to the system.
Department of Career and Technical Education	Responsible for all Career Tech. Education in North Dakota. This agency will be part of the data governance council. The agency will also contribute their data to the warehouse.
ND Information Technology Department (ITD) and CIO chair of the Statewide Longitudinal Data System Taskforce (SLDST)	The North Dakota State Information Technology Department hosts all databases and systems for state agencies. Provides system administration, enterprise architecture, project management and software development services for agencies. Additionally the CIO serves as the chair of the SLDST. The Taskforce will serve as advisor to the DPI and the project manager. It will also facilitate collaboration among other agencies
Education Technology Services (EduTech)	Responsible for the training and support of student information systems and other district school technologies.
Department of Commerce	This department is developing its own business intelligence programs. Will share their data and also assist in analyzes of data.

Supporter	Role in ndSLEDS
Job Service North Dakota	Job Service will provide workforce data for inclusion in ndSLEDS.
Education Standards and Practices Board	ESPB sets the standards for teacher training and licensing Of teachers in ND. ESPB will share (when permitted) data with DPI to coordinate teacher information for analysis.
North Dakota Leadership & Educational Administration Development (LEAD)	State funded, educator driven organization which provides training for local teachers and administrators – for instructional improvement. LEAD will provide training for local school personnel on data usage, data driven decision making and how to use data for student achievement.

Project Management Plan

North Dakota Century Code requires all projects of this size follow the state standards on project management known as the Project Management Institute’s PMBOK. Additionally the size of this project requires Large Project Oversight, a Legislative Information Technology review committee whose staff monitors projects on a quarterly basis. Vendors and contractors who participate in the project are required to utilize this common framework of project management which has resulted in many successful projects in North Dakota and within DPI.

DPI will prepare the project management plan using the following organizational structure and responsibilities:

Project Sponsor

G. David Massey, Assistant State Superintendent for DPI will serve as the Project Sponsor, and will be responsible for securing the funding and human resources to design, implement, and sustain the project. The Project Sponsor must consider for approval all actions affecting budget, scope, schedule, and quality that are escalated with recommendations by the Project Manager (PM). Based upon the input of the Project Team, the PM, and the Executive Steering Committee, the Project Sponsor will provide final sign-off on any escalated change.

Executive Steering Committee

This committee is chaired by the Project Sponsor and comprised of DPI managers, the North Dakota Enterprise Project Manager, the North Dakota State Chief Information Officer (CIO), the director of the Educational Technology Council, and project vendors. The PM meets with this committee quarterly to convey status of the project, outstanding issues, budget information and escalation of project issues or risks. A meeting of the Executive Steering Committee can be requested at any time by the PM or any member of the committee.

Project Manager

The DPI PM will hold a Project Management Professional certificate and have experience in similar sized projects. The PM is responsible for ensuring that the Project Team completes the project. The PM develops the project plan with the team and manages the team’s performance of

project tasks. It is also the PM's responsibility to secure acceptance and approval of deliverables from the Project Sponsor and Stakeholders. The management controls developed and monitored by the PM will encompass: Cost, Scope, Schedule, and Quality Management (CSSQ). Formal processes of managing the CSSQ include: Integrated Changed Control, Human Resource Management, Communications Management, Risk Management and Procurement Management.

Project Business Case and Charter

A business case and project charter shall be developed and executed to initiate the project and to secure commitment for the resources (human, financial, equipment, etc.) necessary for the project. The Project Sponsor shall formally approve the project charter in writing. An Executive Steering Committee shall be established to provide management support to the project. A project plan shall be developed as the primary planning document for the project. The project plan shall follow PMBOK guidelines, and the guidelines of the North Dakota Project Management Guidebook and Project Plan Template.

Project Team

The Project Team is the group that is responsible for planning and executing the project. It consists of a PM and a variable number of Project Team members who are brought in to deliver their tasks according to the project schedule.

Program Manager

DPI will assign a role responsible for coordinating tasks between the State and school districts. This key role will provide communication plans, coordinate status meetings and design meetings with the school districts and represent the districts cohesively as a member of the Project Team.

Large Project Oversight

The project status report shall be submitted to the State Information Technology Department Large Project Oversight on a quarterly basis, or when a milestone exceeds twenty percent of planned cost or schedule. The report should include an executive summary, budget, schedule, issues, risks, project accomplishments and upcoming activities. Throughout the life of the project, if changes occur which would impact the project objectives as stated in the original business case, or changes to cost, schedule, scope or quality as defined in the project plan, those impacts shall be included in the project status report.

Prior Successful Experience

A 2006 Title II-D grant was received from the U.S. Department of Education to cover some of the start-up costs associated with implementing the Viewpoint data warehouse. Fifty thousand dollars was used to pay for development of the North Dakota data model and \$25,000 was used to pay for professional development for administrators and teachers in the first school districts that adopted the Viewpoint data warehouse. Both projects were implemented on-time and within budget.

Project Personnel and Resources

The proposed ndSLEDS will require dedicated human and capital resources to go from concept to an operating system. The table in this section outlines the specific roles, responsibilities, and time that will be committed to ndSLEDS.

(* indicates a sustained role, Assigned Time is indicated as sustain if different than development)

	Role	Responsibilities	Assigned Time
*	Executive Sponsor	Overall responsibility for funding, sustaining and project signoff.	5% DPI 5% sustain In-Kind
*	Program Manager	Establish and formalize the data governance structure. Coordinate with school districts and other agencies. Establish the data governance office within DPI to formalize communications and support for district data collections and problem escalation.	100% DPI Open Position In-Kind starting Yr 4
*	Project Director	Data Quality Manager Responsible for coordinating the data stewardship and program managers. Creation of the data dictionary, data collections, SIF pilot project results and eTranscripts.	75% DPI 35% sustain
*	Data Stewards	Data Stewards are representatives from the SEA, Education Standards and Practices Board, Career and Technical Education, and School Districts that are considered the domain experts on specific data sources. Data Stewards are existing State resources with responsibilities that include working with the ndSLEDS project implementation team to define and implement data governance processes, evaluate and fix data quality issues, and provide domain expertise to integrate and use data in the ndSLEDS.	5%
*	QA/Testing	Responsible for testing and verifying quality of software products for all projects including the SIF Pilot, the ndSLEDS Data Warehouse, and the ndSLEDS BI Reporting Tool.	50% DPI 20% sustain
*	Sr. Research Analyst	DPI research director responsible for statistical analysis; developing requirements and performing analysis on data and defining report requirements.	50% DPI
*	DPI Programmer	Experienced .Net developer responsible for STARS collection enhancements.	50% DPI In-Kind
*	DPI Programmer	Experienced SQL Server and .Net developer responsible for state education database enhancements, metadata management.	50% DPI In-Kind
*	STARS Contractor	Responsible for enhancement to the state education database and the integration of STARS student locator to SIF.	20% 10% sustain In-Kind
*	EdFacts Coordinator	Team member providing support for ED <i>Facts</i> reporting and providing guidance regarding collection expansions	30% DPI/ 30% sustain

	Role	Responsibilities	Assigned Time
		and element definitions.	In-Kind
*	DPI Trainer	The Trainer will work with the contractor to develop end-user training materials and course room content and sustain ongoing training post implementation.	50% DPI
*	District Help Desk Support	Help desk personnel responsible for working with districts on SIF reporting and data collections. Provide Level 1 support at a Regional level before escalation to State.	50% Open Position
*	DPI Help Desk Support	DPI help desk provides Level 3 reporting supporting regional and district data stewards issues, problem resolution and monitoring problem logs for efficiency.	50% DPI In-Kind
*	Regional Trainer	Responsible for supporting and training district regional resources in data driven decision making	100% Open Position In-Kind
*	Regional Trainer	Responsible for supporting and training district regional resources in data driven decision making	100% Open Position In-Kind
	RFP Writer	ITD contract resource responsible for writing the data warehouse RFP.	10% in Phase 1
*	Project Manager	ITD contract resource responsible for overall project management of all ndSLEDS initiatives. Certified PMP.	100% ITD 20% sustain
*	IT Engineer	ITD contract resource providing system administration of hardware and software infrastructure	50%
*	DBA ETL Developer	ITD contract resource responsible for implementation, configuration, and testing of the data warehouse and ETL programs. Coordinating with the Project Director and team members involved with metadata management.	75% 50% sustain
*	Portal Report Developer	ITD contract resource responsible for configuring end-user access and security related to all BI reports and related content.	100% 30% sustain
*	Report Developer	ITD contract resource responsible for designing, developing, and testing of BI reports.	100% 30% sustain
*	QA/Tester	ITD contract resource responsible for working with the state QA staff to develop quality assurance and test procedures for software products for all projects including the SIF Pilot, the ndSLEDS Data Warehouse, and the ndSLEDS BI Reporting Tool.	50% 10% sustain
	Data Analyst	ITD contract resource during Phase 1 responsible for defining data quality standards and establishing formal	50% Phase 1

	Role	Responsibilities	Assigned Time
		processes for sustaining quality through the DMC committee.	
	DW Vendor	Vendor team selected from an RFP process to install, configure, and launch the data warehouse and BI reporting tools.	Phases 2-4
	Enterprise Consultant	Contract resource during Phase 1 responsible for reviewing existing enterprise infrastructure and recommending cost effective strategies to leverage and expand existing platforms.	Phase 1
	eTranscripts Vendor	Vendor team selected from an RFP process to install, configure, and launch the eTranscripts solution. The vendor is expected to provide implementation and training services.	Phase 5
	SIF Vendor	Vendor team selected from an RFP process to install, configure, and launch the SIF pilot. The vendor is expected to supply the necessary resources to provide services to install, integrate, and train State staff for Student Locator interface, Student Record Exchange and Vertical Reporting.	Phase 1-2

Resumes of key staff who will contribute to the success of ndSLEDS are included as attachments to the application.

Summary

North Dakota needs a robust longitudinal data system that provides value back to the districts through providing data transparency and making quality and timely data available to practitioners and researchers to inform practice and improve student achievement.

The funding proposed in this grant application will pay for DPI’s K-12 longitudinal data system software, hardware, development and implementation costs, as well as the seed money required to develop improved governance, training, and research initiatives. DPI will contribute the staff necessary to support and sustain ndSLEDS. These efforts establish the K-12 foundation as part of a larger collaborative statewide vision where students are tracked from K-12 to post-secondary education and to the workforce through a seamless integration of data across core state institutions.

ndSLEDS Timeline

The ndSLEDS project is anticipated to begin April 2009 for completion by April 2013. Accordingly, the timeline is presented by project year, starting with the second quarter of the calendar year and ending with the first quarter of the calendar year. The shaded boxes corresponding to the beginning of each phase shows the duration of the phase. An 'X' indicates activity in a quarter, and a '▲' indicates a project milestone.

Tasks	Year 1				Year 2				Year 3				Year 4			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Phase 1: ndSLEDS Project Initiation and Structure																
Establish Data Governance and Project Management																
1 Establish ndSLEDS Project Committee	X															
2 Hire consultant to review ND enterprise data collection strategy & SIF	X															
3 Establish Data Governance structure		X														
4 Establish and enforce LDS-wide data standards		X	X													
5 Define a data integration strategy			X													
6 Implement formal data quality process			X													
Objective #3: Outcome/Milestone: The Data Governance charter will be created.			▲													
Project Planning																
1 Communicate with Institutional Partners	X															
2 Establish DPI project management structure and plan	X															
3 Develop Project Charter	X															
4 Research BI Tool		X														
5 Develop and Issue SLDS RFP			X													
Phase 2: ndSLEDS Infrastructure Initiatives																
1 Procure, install and configure SIF pilot				X	X											
2 Execute SIF Pilot					X	X										
3 Continue to expand K-12 Data Dictionary					X											
4 Improve core operational data store (STARS)					X	X										
Objective #9 Sample student records will be electronically transferred by 2011.						▲										
Objective #2b Data administrators will identify, test, and pilot an enterprise strategy for replacing manual file extractions and reporting with automated data exchanges.						▲										

Tasks	Year 1				Year 2				Year 3				Year 4			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Phase 3: Build ndSLEDS																
Plan, Design and Develop Data Warehouse																
1 Award Contract				X												
2 Finalize project plan				X												
3 Develop communication, training, testing, and change management plans				X												
4 Select and procure hardware and software					X											
5 Define data and reporting requirements					X											
6 Create high-level enterprise architecture design					X											
7 Design and develop ndSLEDS data model					X											
8 Design and develop data conversions and ETL programs					X	X										
9 Create stakeholder-specific data marts					X											
10 Test ETL system							X									
11 Make corrections based on system testing							X									
Objective #2a Outcome/Milestone - A single, stable repository of data for consistent federal and state reporting will be created providing districts and program administrators quality and timely data.																
							▲									
Implement Business Intelligence Tool & Pilot ndSLEDS																
1 Procure and configure business intelligence toolset					X											
2 Develop BI reports (Pilot set)					X	X										
3 Test Reports/QA/User Acceptance Testing						X										
4 Make corrections based on system testing						X										
5 Develop pilot training materials						X										
6 Roll-out pilot reports to stakeholder groups							X									
7 Roll-out pilot Federal reports to stakeholder groups							X									
7 Provide ndSLEDS pilot training							X									
Objective #7a Outcome/Milestone - A successful pilot of ndSLEDS will be implemented in Year 2.																
							▲									
Phase 4: Conduct Statewide Roll-Out and Training of ndSLEDS																
1 Evaluate pilot results							X	X								
2 Based on evaluation, make improvements to ndSLEDS data, reports, and training methodology								X	X							
3 Plan staged statewide roll-out of ndSLEDS									X							
4 Develop and implement statewide system, and support plans									X	X						
5 Develop and deliver statewide ndSLEDS training									X	X						
6 Go-live statewide with ndSLEDS										X						
Objective #1 Outcome/Milestone - Districts will have access to ndSLEDS data marts of three years of longitudinal assessment data at the item level, as well as teacher data linked to courses and students.																
														▲		
Objective #4 Outcome/Milestone - Districts will have their administrators, teachers and other relevant stakeholders trained as "super-users" who will train remaining district stakeholders within their districts through a train-the-trainer model.																
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Section C of Form 524

	2009	2010	2011	2012	Total	Total
	Year 1	Year 2	Year 3	Year 4	Budget	In Kind
1. Personnel						
Executive Sponsor	\$4,500	\$4,500	\$4,500	\$4,500		\$18,000
Program Manager	\$70,000	\$70,000	\$70,000	\$70,000	\$210,000	\$70,000
Project Director	\$32,500	\$48,750	\$48,750	\$32,500	\$162,500	
Data Stewards (10 people)	\$20,000	\$20,000	\$20,000	\$20,000	\$80,000	
QA/Testing	\$0	\$15,000	\$15,000	\$6,000	\$36,000	
Sr. Research Analyst	\$0	\$27,000	\$27,000	\$16,200	\$70,200	
DPI Programmer	\$20,300	\$29,000	\$29,000	\$29,000		\$107,300
DPI Programmer	\$15,750	\$22,500	\$22,500	\$22,500		\$83,250
STARS Contractor	\$35,000	\$35,000	\$35,000	\$35,000		\$140,000
EDFacts Coordinator	\$16,800	\$16,800	\$16,800	\$16,800		\$67,200
DPI Trainer	\$0	\$25,000	\$25,000	\$25,000	\$75,000	
District Help Desk Support	\$0	\$15,000	\$15,000	\$15,000	\$45,000	
DPI Help Desk Support	\$0	\$15,000	\$15,000	\$15,000		\$45,000
Regional Trainer	\$0	\$50,000	\$50,000	\$50,000		\$150,000
Regional Trainer	\$0	\$50,000	\$50,000	\$50,000		\$150,000
Sub Total					\$678,700	\$830,750
2. Fringe Benefits						
Executive Sponsor	\$1,350	\$1,350	\$1,350	\$1,350	\$0	\$5,400
Program Manager	\$21,000	\$21,000	\$21,000	\$21,000	\$63,000	\$21,000
Project Director	\$9,750	\$14,625	\$14,625	\$9,750	\$48,750	\$0
Data Stewards (10 people)	\$6,000	\$6,000	\$6,000	\$6,000	\$24,000	\$0
QA/Testing	\$0	\$4,500	\$4,500	\$1,800	\$10,800	\$0
Sr. Research Analyst	\$0	\$8,100	\$8,100	\$4,860	\$21,060	\$0
DPI Programmer	\$6,090	\$8,700	\$8,700	\$8,700	\$0	\$32,190
DPI Programmer	\$4,725	\$6,750	\$6,750	\$6,750	\$0	\$24,975
STARS Contractor	\$10,500	\$10,500	\$10,500	\$10,500	\$0	\$42,000
EDFacts Coordinator	\$5,040	\$5,040	\$5,040	\$5,040	\$0	\$20,160
DPI Trainer	\$0	\$7,500	\$7,500	\$7,500	\$22,500	\$0
District Help Desk Support	\$0	\$4,500	\$4,500	\$4,500	\$13,500	\$0
DPI Help Desk Support	\$0	\$4,500	\$4,500	\$4,500	\$0	\$13,500
Regional Trainer	\$0	\$15,000	\$15,000	\$15,000	\$0	\$45,000
Regional Trainer	\$0	\$15,000	\$15,000	\$15,000	\$0	\$45,000
Sub Total					\$203,610	\$249,225
3. Travel						
Annual Trip to DC (2 people)						
Airfare	\$1,600	\$1,600	\$1,600	\$1,600	\$6,400	
Lodging (3 nights)	\$1,080	\$1,080	\$1,080	\$1,080	\$4,320	

Transportation / Parking	\$210	\$210	\$210	\$210	\$840
Meals / Incidentals	\$450	\$450	\$450	\$450	\$1,800
Data Stewards (5 people per Qtr)					
Lodging (4 nights)	\$5,200	\$5,200	\$5,200	\$5,200	\$20,800
Transportation / Parking	\$3,600	\$3,600	\$3,600	\$3,600	\$14,400
Meals / Incidentals	\$2,000	\$2,000	\$2,000	\$2,000	\$8,000
BI Training (3 people)					
Airfare	\$2,400	\$2,400			\$4,800
Lodging (4 nights)	\$2,160	\$2,160			\$4,320
Transportation / Parking	\$420	\$420			\$840
Meals / Incidentals	\$900	\$900			\$1,800
Sub Total					\$68,320
					\$0

4. Equipment

Servers					
Warehouse Servers/ License/ Storage					
	\$0	\$116,000	\$50,000	\$50,000	\$216,000
Servers SIF	\$0	\$8,000	\$1,000	\$1,000	\$10,000
Laptops	\$3,000	\$0	\$0	\$0	\$3,000
Network Switches / Firewalls	\$0	\$40,000	\$0	\$0	\$40,000
BI Tool	\$0	\$500,000	\$100,000	\$100,000	\$700,000
DW Software	\$0	\$280,000	\$47,600	\$47,600	\$375,200
SIF Pilot license	\$0	\$125,000	\$0	\$0	\$125,000
eTranscripts license	\$0	\$159,000	\$159,000	\$159,000	\$477,000
Sub Total					\$1,946,200
					\$0

5. Supplies

General Office Supplies	\$2,500	\$3,000	\$4,000	\$2,500	\$12,000
Sub Total					\$12,000
					\$0

6. Contractual

ITD Contract					
RFP Writer	\$20,900	\$0	\$0	\$0	\$20,900
Project Manager	\$59,500	\$108,800	\$108,800	\$42,500	\$319,600
IT Engineer (hosting support)	\$0	\$80,750	\$80,750	\$80,750	\$242,250
DBA and ETL developer	\$0	\$129,200	\$161,500	\$80,750	\$371,450
Portal/Report developer	\$0	\$96,900	\$161,500	\$161,500	\$419,900
Report developer	\$0	\$96,900	\$161,500	\$161,500	\$419,900
QA/Testing	\$0	\$80,750	\$80,750	\$0	\$161,500
Data Analyst - Data Quality	\$133,000	\$0	\$0	\$0	\$133,000
Unemployment Insurance Data	\$0	\$0	\$0	\$75,000	\$75,000
SLDS Labor					

DW Project Manager	\$0	\$243,200	\$76,000	\$0	\$319,200	
DW ETL Engineer	\$0	\$266,000	\$66,500	\$0	\$332,500	
DW BI Developer	\$0	\$266,000	\$66,500	\$0	\$332,500	
DW Training and Content	\$0	\$133,000	\$133,000	\$66,500	\$332,500	
Enterprise Consultant	\$35,000				\$35,000	
eTranscript Implementation	\$	25,000			\$25,000	
SIF Pilot	\$0	\$125,000	\$0	\$0	\$125,000	
Sub Total					\$3,665,200	\$0

7. Construction	\$0	\$0	\$0	\$0	\$0	\$0
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8. Other						
SIFA Annual Dues	\$2,500	\$2,500	\$2,500	\$2,500	\$10,000	
BI Tool Training	\$9,000	\$9,000			\$18,000	
Sub Total					\$28,000	\$0

9. Total Direct Costs (lines 1-8)	\$444,670	\$3,200,995	\$1,762,015	\$1,194,350	\$6,602,030	\$1,079,975
In Kind	\$120,055	\$289,640	\$289,640	\$380,640		

10. Indirect Costs	\$24,228	\$38,461	\$36,920	\$21,451	\$121,060	
In Kind	\$13,326	\$32,150	\$32,150	\$42,251		\$119,877

11. Training Stipends	\$0	\$0	\$0	\$0	\$0	\$0
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12. Total Costs (lines 9-11)	\$468,898	\$3,239,456	\$1,798,935	\$1,215,801	\$6,723,090	\$1,199,852
In Kind	\$133,381	\$321,790	\$321,790	\$422,891		

Budget Narrative (Justification)

Year 1

Year 1 Project Highlights and Major Milestones:

- Establish ndSLEDS Project Committee
- Hire consultant to review ND enterprise data collection strategy & SIF
- Establish Data Governance structure
- Establish and enforce LDS-wide data standards
- Define a data integration strategy
- Implement formal data quality process
- Communicate with Institutional Partners
- Establish DPI project management structure and plan
- Develop Project Charter
- Research BI Tool
- Develop and issue SLDS RFP
- Procure, install and configure SIF pilot
- Award SLDS Contract
- Finalize SLDS project plan
- Develop communication, training, testing, and change management plans

1. Personnel (Yr. 1)

Budget Request: \$122,500

In Kind: \$92,350

The ndSLEDS program will require a number of state personnel to be involved. While the State will leverage contractual labor for specific technical and functional expertise, the State understands the need to commit its own resources to this program to ensure stakeholder buy-in, user adoption, and future sustainability. The State plans to establish a core team of State resources that will be dedicated to the program and other State resources contributing on a part-time basis.

Executive Sponsor

Budget Request: \$0

In Kind: \$4,500

The Executive Sponsor role will be filled by an existing DPI resource. This resource will be 5% dedicated to the program during Year 1. The State will fund 100% of the cost of this role as an **in kind** contribution.

Program Manager

Budget Request: \$70,000

In Kind: \$0

The Program Manager role is a new “key” position in DPI responsible for coordinating tasks between the State and school districts. This role will provide communication plans, coordinate status meetings and design meetings with the school districts and represent the districts cohesively as a member of the project team. This resource will be 100% dedicated to the program in Year 1.

Project Director

Budget Request: \$32,500

In Kind: \$0

The Project Director role is a new “key” position that will be filled by the DPI MIS Director. This resource will be re-assigned to support the program and be responsible for coordinating the

Budget Narrative (Justification)

Year 1

data stewardship and program managers. This resource will be 50% dedicated to the program in Year 1.

Data Stewards

Budget Request: \$20,000

In Kind: \$0

Data Stewards are representatives from the SEA, Education Standards and Practices Board, Career and Technical Education, and School Districts that are considered the domain experts on specific data sources. Data Stewards are existing State resources with responsibilities that include working with the ndSLEDS project implementation team to define and implement data governance processes, evaluate and fix data quality issues, and provide domain expertise to integrate and use data in the ndSLEDS. During Year 1, the budget includes up to 10 Data Stewards dedicating 5% of their time to the program.

DPI Programmer

Budget Request: \$0

In Kind: \$36,050

There will be two DPI Programmer positions contributing to the program providing general programming support and enhancements for various source systems including STARS. These positions will be filled by existing DPI resources. These resources will be 35% dedicated to the program in Year 1. The State will fund 100% of the cost of these roles as an **in kind** contribution.

STARS Contractor

Budget Request: \$0

In Kind: \$35,000

There will be one STARS Contractor position contributing to the program providing business and data analysis support for STARS. This position will be filled by an existing Contractor responsible for STARS development today. This resource has been budgeted for approximately 320 hours in Year 1. The State will fund 100% of the cost of this role as an **in kind** contribution.

EDFacts Coordinator

Budget Request: \$0

In Kind: \$16,800

There will be one EDFacts Coordinator position contributing to the program providing support for EDFacts reporting. This position will be filled by an existing DPI resource. This resource will be 30% dedicated to the program in Year 1. The State will fund 100% of the cost of this role as an **in kind** contribution.

2. Fringe Benefits (Yr. 1)

Budget Request: \$36,750

In Kind: \$27,705

The State of North Dakota contributes 30% of base salary for health benefits, retirement, social security, workers compensation, and unemployment insurance.

Position	Budget Request	In Kind
Executive Sponsor	0	\$1,350
Program Manager	\$21,000	0
Project Director	\$9,750	0
Data Stewards (10 people)	\$6,000	0
QA/Testing	0	0
Sr. Research Analyst	0	0

Budget Narrative (Justification)

Year 1

Position	Budget Request	In Kind
DPI Programmer	0	\$6,090
DPI Programmer	0	\$4,725
STARS Contractor	0	\$10,500
EDFacts Coordinator	0	\$5,040
DPI Trainer	0	0
District Help Desk Support	0	0
DPI Help Desk Support	0	0
Regional Trainer	0	0
Regional Trainer	0	0
Total:	\$36,750	\$27,705

3. Travel (Yr. 1)

Budget Request: \$20,020

In Kind: \$ 0

Description	Budget Request	In Kind
Annual Trip to DC		
Airfare (2 persons @ \$800 per ticket)	\$1,600	
Lodging (2 persons @ \$180 per night @ 3 nights)	\$1,080	
Transportation / Parking (2 persons @ \$35 per day @ 3 days)	\$210	
Meals / Incidentals (2 persons @ \$75 per day @ 3 days)	\$450	
	0	
Data Stewards (5 people per Quarter)	0	
Lodging (5 persons @ \$65 per night @ 4 nights @ 4 trips)	\$5,200	
Transportation / Parking (5 persons @ \$180 per trip @ 4 trips)	\$3,600	
Meals / Incidentals (5 persons @ \$25 per day @ 4 days @ 4 trips)	\$2,000	
	0	
BI Training (3 people)	0	
Airfare (3 persons @ \$800 per ticket)	\$2,400	
Lodging (3 persons @ \$180 per night @ 4 nights)	\$2,160	
Transportation / Parking (3 persons @ \$35 per day @ 4 days)	\$420	
Meals / Incidentals (3 persons @ \$75 per day @ 4 days)	\$900	
	0	
Total:	\$20,020	\$ 0

4. Equipment (Yr. 1)

Budget Request: \$3,000

In Kind: \$ 0

Description	Budget Request	In Kind
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Budget Narrative (Justification)

Year 1

Description	Budget Request	In Kind
Laptop (1 @ \$3,000)	\$3,000	
Total:	\$3,000	\$ 0

5. Supplies (Yr. 1) Budget Request: \$2,500 In Kind: \$ 0

Description	Budget Request	In Kind
General Office Supplies	\$2,500	
Total:	\$2,500	\$ 0

6. Contractual (Yr. 1) Budget Request: \$248,400 In Kind: \$ 0

Description	Budget Request	In Kind
<p>ITD Contract Establish a contract with ITD to fill technical roles on the ndSLEDS implementation team. During Year 1 of the project, the ITD positions will assist with project planning and organization. Team includes multiple roles including:</p> <p>RFP Writer Rate = \$110/hr for 190 hrs Hire 1 contractor to write the SLDS RFP.</p> <p>Project Manager Rate = \$85/hr for 700 hrs Hire 1 contractor to manage to SLDS project.</p> <p>Data Analyst Rate = \$140/hr for 950 hrs Hire 1 contractor to define and implement data governance programs.</p>	\$213,400	
<p>Enterprise Consultant Hire 1 contractor to define the enterprise infrastructure for the SLDS. Rate = \$140/hr for 250 hours</p>	\$35,000	
Total:	\$248,400	\$ 0

Budget Narrative (Justification)

Year 1

7. Construction (Yr. 1) Budget Request: \$0 In Kind: \$0

Not Applicable

8. Other (Yr. 1) Budget Request: \$11,500 In Kind: \$ 0

Description	Budget Request	In Kind
SIFA Membership Fee	\$2,500	
BI Tool Training	\$9,000	
Total:	\$11,500	\$ 0

9. Total Direct Costs (Yr. 1) Budget Request: \$444,670 In Kind: \$120,055

10. Indirect Costs (Yr. 1) Budget Request: \$24,228 In Kind: \$13,326

DPI will use the Federally authorized rate of 11.1% to cover indirect costs. This rate is applied to all costs except equipment and only the first \$25,000 of any contract labor. It is expected that DPI will establish 4 separate contracts with vendors to complete the project.

11. Training Stipends (Yr. 1) Budget Request: \$0 In Kind: \$0

Not Applicable

12. Total Costs (Yr. 1) Budget Request: \$468,898 In Kind: \$133,381

Budget Narrative (Justification)

Year 2

Year 2 Project Highlights and Major Milestones:

- Procure, install and configure SIF pilot
- Execute SIF Pilot
- Continue to expand K-12 Data Dictionary
- Improve core operational data store (STARS)
- ndSLEDS Data Warehouse
 - Select and procure hardware and software
 - Define data and reporting requirements
 - Create high-level enterprise architecture design
 - Design and develop ndSLEDS data model
 - Design and develop data conversions and ETL programs
 - Create stakeholder-specific data marts
 - Test ETL system
 - Make corrections based on system testing
- ndSLEDS BI Tool
 - Procure and configure business intelligence toolset
 - Develop BI reports (Pilot set)
 - Test Reports/QA/User Acceptance Testing
 - Make corrections based on system testing
 - Develop pilot training materials
 - Roll-out pilot reports to stakeholder groups
 - Roll-out pilot Federal reports to stakeholder groups
 - Provide ndSLEDS pilot training
 - Evaluate pilot results

1. Personnel (Yr. 2)

Budget: \$220,750

In Kind: \$222,800

During Year 2 additional State resources are added to the program as major project components are begin implementation including the SIF Pilot, the ndSLEDS Data Warehouse, and the ndSLEDS BI Reporting Tool.

Executive Sponsor

Budget: \$0

In Kind: \$4,500

The Executive Sponsor role will be filled by an existing DPI resource. This resource will be 5% dedicated to the program during Year 2. The State will fund 100% of the cost of this role as an **in kind** contribution.

Program Manager

Budget: \$70,000

In Kind: \$0

The Program Manager role is a new “key” position in DPI responsible for coordinating tasks between the State and school districts. This role will provide communication plans, coordinate status meetings and design meetings with the school districts and represent the districts cohesively as a member of the project team. This resource will be 100% dedicated to the program in Year 2.

Budget Narrative (Justification)

Year 2

Project Director

Budget: \$48,750

In Kind: \$0

The Project Director role is a new “key” position that will be filled by the DPI MIS Director. This resource will be re-assigned to support the program and be responsible for coordinating the data stewardship and program managers. This resource will be 75% dedicated to the program in Year 2.

Data Stewards

Budget: \$20,000

In Kind: \$0

Data Stewards are representatives from the SEA, Education Standards and Practices Board, Career and Technical Education, and School Districts that are considered the domain experts on specific data sources. Data Stewards are existing State resources with responsibilities that include working with the ndSLEDS project implementation team to define and implement data governance processes, evaluate and fix data quality issues, and provide domain expertise to integrate and use data in the ndSLEDS. During Year 2, the budget includes up to 10 Data Stewards dedicating 5% of their time to the program.

QA/Testing

Budget: \$15,000

In Kind: \$0

There will be one internal QA/Testing position contributing to the program providing quality assurance and testing support to all projects during Year 2 including the SIF Pilot, the ndSLEDS Data Warehouse, and the ndSLEDS BI Reporting Tool. This position will be filled by an existing DPI research staff member. This resource will be 50% dedicated to the program in Year 2.

Sr. Research Analyst

Budget: \$27,000

In Kind: \$0

There will be one Sr. Research Analyst position contributing to the program providing statistical analysis, developing requirements, performing analysis on data, and defining report requirements related to the ndSLEDS project. This position will be filled by an existing DPI resource. This resource will be 50% dedicated to the program in Year 2.

DPI Programmer

Budget: \$0

In Kind: \$51,500

There will be two DPI Programmer positions contributing to the program providing general programming support and enhancements for various source systems including STARS. These positions will be filled by existing DPI resources. These resources will be 50% dedicated to the program in Year 2. The State will fund 100% of the cost of these roles as an **in kind** contribution.

STARS Contractor

Budget: \$0

In Kind: \$35,000

There will be one STARS Contractor position contributing to the program providing business and data analysis support for STARS. This position will be filled by an existing Contractor responsible for STARS development today. This resource has been budgeted for approximately 320 hours in Year 2. The State will fund 100% of the cost of this role as an **in kind** contribution.

EDFacts Coordinator

Budget: \$0

In Kind: \$16,800

There will be one EDFacts Coordinator position contributing to the program providing support for EDFacts reporting. This position will be filled by an existing DPI resource. This resource will be 30% dedicated to the program in Year 2. The State will fund 100% of the cost of this role as an **in kind** contribution.

Budget Narrative (Justification)

Year 2

DPI Trainer

Budget: \$25,000

In Kind: \$0

There will be one DPI Trainer position contributing to the program providing end-user training support. This position will be filled by an existing DPI resource trained in data driven decision making and the BI tool. This resource will be 50% dedicated to the program during Year 2.

District Help Desk Support

Budget: \$15,000

In Kind: \$0

There will be one District Help Desk Support position contributing to the program providing level 1 help desk support to school districts for the ndSLEDS project. This is a new position. This resource will be 50% dedicated to the program during Year 2.

DPI Help Desk Support

Budget: \$0

In Kind: \$15,000

There will be one DPI Help Desk Support position contributing to the program providing level 3 help desk support for the ndSLEDS project. Level 3 supports policy and operational issues for regional and district data stewards. This position will be filled by an existing DPI resource. This resource will be 50% dedicated to the program during Year 2. The State will fund 100% of the cost of these roles as an **in kind** contribution.

Regional DDDM trainer and researcher

Budget: \$0

In Kind: \$100,000

There will be two **Regional DDDM trainer and researcher** positions contributing to the program providing training and research support for school districts. These positions will be filled by State resources outside of DPI. These resources will be 100% dedicated to the program in Year 2. The State will fund 100% of the cost of these roles as an **in kind** contribution. Regional trainers will assist district data stewards as level 2 support issues reported through the District Help Desk Support.

2. Fringe Benefits (Yr. 2)

Budget Request: \$66,225

In Kind: \$66,840

The State of North Dakota contributes 30% of base salary for health benefits, retirement, social security, workers compensation, and unemployment insurance.

Position	Budget Request	In Kind
Executive Sponsor	0	\$1,350
Program Manager	\$21,000	0
Project Director	\$14,625	0
Data Stewards (10 people)	\$6,000	0
QA/Testing	\$4,500	0
Sr. Research Analyst	\$8,100	0
DPI Programmer	0	\$8,700
DPI Programmer	0	\$6,750
STARS Contractor	0	\$10,500
EDFacts Coordinator	0	\$5,040
DPI Trainer	\$7,500	0
District Help Desk Support	\$4,500	0

Budget Narrative (Justification)

Year 2

Position	Budget Request	In Kind
DPI Help Desk Support	0	\$4,500
Regional Trainer	0	\$15,000
Regional Trainer	0	\$15,000
Total:	\$66,225	\$66,840

3. Travel (Yr. 2)

Budget Request: \$20,020

In Kind: \$ 0

Description	Budget Request	In Kind
Annual Trip to DC		
Airfare (2 persons @ \$800 per ticket)	\$1,600	
Lodging (2 persons @ \$180 per night @ 3 nights)	\$1,080	
Transportation / Parking (2 persons @ \$35 per day @ 3 days)	\$210	
Meals / Incidentals (2 persons @ \$75 per day @ 3 days)	\$450	
	0	
Data Stewards (5 people per Quarter)	0	
Lodging (5 persons @ \$65 per night @ 4 nights @ 4 trips)	\$5,200	
Transportation / Parking (5 persons @ \$180 per trip @ 4 trips)	\$3,600	
Meals / Incidentals (5 persons @ \$25 per day @ 4 days @ 4 trips)	\$2,000	
	0	
BI Training (2 people)	0	
Airfare (2 persons @ \$800 per ticket)	\$2,400	
Lodging (2 persons @ \$180 per night @ 4 nights)	\$2,160	
Transportation / Parking (2 persons @ \$35 per day @ 4 days)	\$420	
Meals / Incidentals (2 persons @ \$75 per day @ 4 days)	\$900	
Total:	\$20,020	\$ 0

4. Equipment (Yr. 2)

Budget Request: \$1,228,000

In Kind: \$ 0

Description	Budget Request	In Kind
Warehouse Servers/ License/ Storage (initial purchase)	\$116,000	
Servers SIF (initial purchase)	\$8,000	
Network Switches / Firewalls (initial purchase)	\$40,000	
BI Tool (initial purchase; enterprise license)	\$500,000	
DW Software (initial purchase)	\$280,000	
SIF Pilot license	\$125,000	

Budget Narrative (Justification)

Year 2

Description	Budget Request	In Kind
eTranscripts license	\$159,000	
Total:	\$1,228,000	\$ 0

5. Supplies (Yr. 2)	Budget Request: \$3,000	In Kind: \$ 0
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Description	Budget Request	In Kind
General Office Supplies	\$3,000	
Total:	\$3,000	\$ 0

6. Contractual (Yr. 2)	Budget Request: \$1,651,500	In Kind: \$ 0
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Description	Budget Request	In Kind
<p>ITD Contract (expanded from Year 1) Expand the contract with ITD to fill technical roles on the ndSLEDS implementation team. The ITD positions will complement similar positions filled by the SLDS Implementation Team (below) supporting the installation, configuration, and launch of the data warehousing and reporting tool. Team includes multiple roles including:</p> <p>Project Manager Rate = \$85/hr for 1,900 hrs IT Engineer (hosting support) Rate = \$85/hr for 950 hrs DBA and ETL developer Rate = \$85/hr for 1,520 hrs Portal/Report developer Rate = \$85/hr for 1,140 hrs Report developer Rate = \$85/hr for 1,140 hrs QA/Testing Rate = \$85/hr for 950 hrs</p>	\$593,300	
<p>SLDS Implementation Team Establish contract with a vendor to install, configure, and launch the ndSLEDS data warehouse and BI reporting tool. Team includes multiple roles including:</p> <p>DW Project Manager Rate = \$160/hr for 1,520 hrs DW ETL Engineer Rate = \$140/hr for 1,900 hrs DW BI Developer Rate = \$140/hr for 1,900 hrs</p>	\$908,200	

Budget Narrative (Justification)

Year 2

Description	Budget Request	In Kind
DW Training and Content Rate = \$140/hr for 950 hrs		
eTranscript Implementation Team Establish contract with a vendor to install, configure, and launch an eTranscript implementation including district to district and district to higher education data exchange.	\$25,000	
SIF Pilot Team Establish contract with a vendor to install, configure, and launch a pilot implementation of the Schools Interoperability Framework (SIF).	\$125,000	
Total:	\$1,651,500	\$ 0

7. Construction (Yr. 2) Budget Request: \$0 In Kind: \$0

Not Applicable

8. Other (Yr. 2) Budget Request: \$11,500 In Kind: \$ 0

Description	Budget Request	In Kind
SIFA Membership Fee	\$2,500	
BI Tool Training	\$9,000	
Total:	\$11,500	\$ 0

9. Total Direct Costs (Yr. 2) Budget Request: \$3,200,995 In Kind: \$289,640

10. Indirect Costs (Yr. 2) Budget Request: \$38,461 In Kind: \$32,150

DPI will use the federally authorized rate of 11.1% to cover indirect costs. This rate is applied to all costs except equipment and only the first \$25,000 of any contract labor. It is expected that DPI will establish 4 separate contracts with vendors to complete the project.

Budget Narrative (Justification)

Year 2

11. Training Stipends (Yr. 2) Budget Request: \$0 In Kind: \$0

Not Applicable

12. Total Costs (Yr. 2) Budget Request: \$3,239,456 In Kind: \$321,790

Budget Narrative (Justification)

Year 3

Year 3 Project Highlights and Major Milestones:

- Evaluate pilot results
- Based on evaluation, make improvements to ndSLEDS data, reports, and training methodology and materials
- Plan staged statewide roll-out of ndSLEDS
- Develop and implement statewide system, and support plans
- Develop and deliver statewide ndSLEDS training
- Go-live statewide with ndSLEDS
- Implement eTranscripts
- Design and Implement Workforce Data Integration
- Execute support plan (e.g., assign resources, begin tasks)
- Monitor ndSLEDS operations
- Monitor data quality via audits
- Address ndSLEDS bug/fixes and install software upgrades
- Analyze help desk tickets and conduct user satisfaction surveys to identify opportunities for improvement
- Make system enhancements
- Provide ongoing training

1. Personnel (Yr. 3)

Budget: \$220,750

In Kind: \$222,800

During Year 3 the same level of State resources are maintained from Year 2.

Executive Sponsor

Budget: \$0

In Kind: \$4,500

The Executive Sponsor role will be filled by an existing DPI resource. This resource will be 5% dedicated to the program during Year 3. The State will fund 100% of the cost of this role as an **in kind** contribution.

Program Manager

Budget: \$70,000

In Kind: \$0

The Program Manager role is a new “key” position in DPI responsible for coordinating tasks between the State and school districts. This role will provide communication plans, coordinate status meetings and design meetings with the school districts and represent the districts cohesively as a member of the project team. This resource will be 100% dedicated to the program in Year 3.

Project Director

Budget: \$48,750

In Kind: \$0

The Project Director role is a new “key” position that will be filled by the DPI MIS Director. This resource will be re-assigned to support the program and be responsible for coordinating the data stewardship and program managers. This resource will be 75% dedicated to the program in Year 3.

Data Stewards

Budget: \$20,000

In Kind: \$0

Budget Narrative (Justification)

Year 3

Data Stewards are representatives from the SEA, Education Standards and Practices Board, Career and Technical Education, and School Districts that are considered the domain experts on specific data sources. Data Stewards are existing State resources with responsibilities that include working with the ndSLEDS project implementation team to define and implement data governance processes, evaluate and fix data quality issues, and provide domain expertise to integrate and use data in the ndSLEDS. During Year 3, the budget includes up to 10 Data Stewards dedicating 5% of their time to the program.

QA/Testing

Budget: \$15,000

In Kind: \$0

There will be one internal QA/Testing position contributing to the program providing quality assurance and testing support to all projects during Year 3 including the SIF Pilot, the ndSLEDS Data Warehouse, and the ndSLEDS BI Reporting Tool. This position will be filled by an existing DPI research staff member. This resource will be 50% dedicated to the program in Year 3.

Sr. Research Analyst

Budget: \$27,000

In Kind: \$0

There will be one Sr. Research Analyst position contributing to the program providing statistical analysis, developing requirements, performing analysis on data, and defining report requirements related to the ndSLEDS project. This position will be filled by an existing DPI resource. This resource will be 50% dedicated to the program in Year 3.

DPI Programmer

Budget: \$0

In Kind: \$51,500

There will be two DPI Programmer positions contributing to the program providing general programming support and enhancements for various source systems including STARS. These positions will be filled by existing DPI resources. These resources will be 50% dedicated to the program in Year 3. The State will fund 100% of the cost of these roles as an **in kind** contribution.

STARS Contractor

Budget: \$0

In Kind: \$35,000

There will be one STARS Contractor position contributing to the program providing business and data analysis support for STARS. This position will be filled by an existing Contractor responsible for STARS development today. This resource has been budgeted for approximately 320 hours in Year 3. The State will fund 100% of the cost of this role as an **in kind** contribution.

EDFacts Coordinator

Budget: \$0

In Kind: \$16,800

There will be one EDFacts Coordinator position contributing to the program providing support for EDFacts reporting. This position will be filled by an existing DPI resource. This resource will be 30% dedicated to the program in Year 3. The State will fund 100% of the cost of this role as an **in kind** contribution.

DPI Trainer

Budget: \$25,000

In Kind: \$0

There will be one DPI Trainer position contributing to the program providing end-user training support. This position will be filled by an existing DPI resource trained in data driven decision making and the BI tool. This resource will be 50% dedicated to the program during Year 3.

District Help Desk Support

Budget: \$15,000

In Kind: \$0

Budget Narrative (Justification)

Year 3

There will be one District Help Desk Support position contributing to the program providing level 1 help desk support to school districts for the ndSLEDS project. This is a new position. This resource will be 50% dedicated to the program during Year 3.

DPI Help Desk Support

Budget: \$0

In Kind: \$15,000

There will be one DPI Help Desk Support position contributing to the program providing Level 3 help desk support for the ndSLEDS project. Level 3 supports policy and operational issues for regional and district data stewards. This position will be filled by an existing DPI resource. This resource will be 50% dedicated to the program during Year 3. The State will fund 100% of the cost of these roles as an **in kind** contribution.

Regional DDDM trainer and researcher

Budget: \$0

In Kind: \$100,000

There will be two **Regional DDDM trainer and researcher** positions contributing to the program providing training and research support for school districts. These positions will be filled by State resources outside of DPI. These resources will be 100% dedicated to the program in Year 3. The State will fund 100% of the cost of these roles as an **in kind** contribution. Regional trainers will assist district data stewards as level 2 support issues reported through the District Help Desk Support.

2. Fringe Benefits (Yr. 3)

Budget Request: \$66,225

In Kind: \$66,840

The State of North Dakota contributes 30% of base salary for health benefits, retirement, social security, workers compensation, and unemployment insurance.

Position	Budget Request	In Kind
Executive Sponsor	0	\$1,350
Program Manager	\$21,000	0
Project Director	\$14,625	0
Data Stewards (10 people)	\$6,000	0
QA/Testing	\$4,500	0
Sr. Research Analyst	\$8,100	0
DPI Programmer	0	\$8,700
DPI Programmer	0	\$6,750
STARS Contractor	0	\$10,500
EDFacts Coordinator	0	\$5,040
DPI Trainer	\$7,500	0
District Help Desk Support	\$4,500	0
DPI Help Desk Support	0	\$4,500
Regional Trainer	0	\$15,000
Regional Trainer	0	\$15,000
Total:	\$66,225	\$66,840

Budget Narrative (Justification)

Year 3

3. Travel (Yr. 3)

Budget Request: \$14,140

In Kind: \$ 0

Description	Budget Request	In Kind
Annual Trip to DC		
Airfare (2 persons @ \$800 per ticket)	\$1,600	
Lodging (2 persons @ \$180 per night @ 3 nights)	\$1,080	
Transportation / Parking (2 persons @ \$35 per day @ 3 days)	\$210	
Meals / Incidentals (2 persons @ \$75 per day @ 3 days)	\$450	
	0	
Data Stewards (5 people per Quarter)	0	
Lodging (5 persons @ \$65 per night @ 4 nights @ 4 trips)	\$5,200	
Transportation / Parking (5 persons @ \$180 per trip @ 4 trips)	\$3,600	
Meals / Incidentals (5 persons @ \$25 per day @ 4 days @ 4 trips)	\$2,000	
	0	
Total:	\$14,140	\$ 0

4. Equipment (Yr. 3)

Budget Request: \$357,600

In Kind: \$ 0

Description	Budget Request	In Kind
Data Warehouse Servers and Storage (annual support)	\$50,000	
Servers SIF (annual support)	\$1,000	
BI Tool (annual support)	\$100,000	
DW Software (annual support)	\$47,600	
eTranscripts license	\$159,000	
Total:	\$357,600	\$ 0

5. Supplies (Yr. 3)

Budget Request: \$4,000

In Kind: \$ 0

Description	Budget Request	In Kind
General Office Supplies	\$4,000	
Total:	\$4,000	\$ 0

Budget Narrative (Justification)

Year 3

6. Contractual (Yr. 3) Budget Request: \$1,096,800 In Kind: \$ 0

Description	Budget Request	In Kind												
<p>ITD Contract (continued from Yr. 2) Continue contract with ITD to fill technical roles on the ndSLEDS implementation team. The ITD positions will begin replacing similar positions filled by the SLDS Implementation Team (below) supporting the installation, configuration, and launch of the data warehousing and reporting tool. Team includes multiple roles including:</p> <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">Project Manager</td> <td style="padding-left: 20px;">Rate = \$85/hr for 1,900 hrs</td> </tr> <tr> <td style="padding-left: 20px;">IT Engineer (hosting support)</td> <td style="padding-left: 20px;">Rate = \$85/hr for 950 hrs</td> </tr> <tr> <td style="padding-left: 20px;">DBA and ETL developer</td> <td style="padding-left: 20px;">Rate = \$85/hr for 1,900 hrs</td> </tr> <tr> <td style="padding-left: 20px;">Portal/Report developer</td> <td style="padding-left: 20px;">Rate = \$85/hr for 1,900 hrs</td> </tr> <tr> <td style="padding-left: 20px;">Report developer</td> <td style="padding-left: 20px;">Rate = \$85/hr for 1,900 hrs</td> </tr> <tr> <td style="padding-left: 20px;">QA/Testing</td> <td style="padding-left: 20px;">Rate = \$85/hr for 950 hrs</td> </tr> </table>	Project Manager	Rate = \$85/hr for 1,900 hrs	IT Engineer (hosting support)	Rate = \$85/hr for 950 hrs	DBA and ETL developer	Rate = \$85/hr for 1,900 hrs	Portal/Report developer	Rate = \$85/hr for 1,900 hrs	Report developer	Rate = \$85/hr for 1,900 hrs	QA/Testing	Rate = \$85/hr for 950 hrs	\$754,800	
Project Manager	Rate = \$85/hr for 1,900 hrs													
IT Engineer (hosting support)	Rate = \$85/hr for 950 hrs													
DBA and ETL developer	Rate = \$85/hr for 1,900 hrs													
Portal/Report developer	Rate = \$85/hr for 1,900 hrs													
Report developer	Rate = \$85/hr for 1,900 hrs													
QA/Testing	Rate = \$85/hr for 950 hrs													
<p>SLDS Implementation Team (continued from Yr. 2) Continue contract with a vendor to install, configure, and launch the ndSLEDS data warehouse and BI reporting tool. Team includes multiple roles including:</p> <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">DW Project Manager</td> <td style="padding-left: 20px;">Rate = \$160/hr for 475 hrs</td> </tr> <tr> <td style="padding-left: 20px;">DW ETL Engineer</td> <td style="padding-left: 20px;">Rate = \$140/hr for 475 hrs</td> </tr> <tr> <td style="padding-left: 20px;">DW BI Developer</td> <td style="padding-left: 20px;">Rate = \$140/hr for 475 hrs</td> </tr> <tr> <td style="padding-left: 20px;">DW Training and Content</td> <td style="padding-left: 20px;">Rate = \$140/hr for 950 hrs</td> </tr> </table>	DW Project Manager	Rate = \$160/hr for 475 hrs	DW ETL Engineer	Rate = \$140/hr for 475 hrs	DW BI Developer	Rate = \$140/hr for 475 hrs	DW Training and Content	Rate = \$140/hr for 950 hrs	\$342,000					
DW Project Manager	Rate = \$160/hr for 475 hrs													
DW ETL Engineer	Rate = \$140/hr for 475 hrs													
DW BI Developer	Rate = \$140/hr for 475 hrs													
DW Training and Content	Rate = \$140/hr for 950 hrs													
Total:	\$1,096,800	\$ 0												

7. Construction (Yr. 3) Budget Request: \$0 In Kind: \$0

Not Applicable

8. Other (Yr. 3) Budget Request: \$2,500 In Kind: \$ 0

Budget Narrative (Justification)

Year 3

Description	Budget Request	In Kind
SIFA Membership Fee	\$2,500	
Total:	\$2,500	\$ 0

9. Total Direct Costs (Yr. 3) Budget Request: \$1,762,015 In Kind: \$289,640

10. Indirect Costs (Yr. 3) Budget Request: \$36,920 In Kind: \$32,150

DPI will use the Federally authorized rate of 11.1% to cover indirect costs. This rate is applied to all costs except equipment and only the first \$25,000 of any contract labor. It is expected that DPI will establish 4 separate contracts with vendors to complete the project.

11. Training Stipends (Yr. 3) Budget Request: \$0 In Kind: \$0

Not Applicable

12. Total Costs (Yr. 3) Budget Request: \$1,798,935 In Kind: \$321,790

Budget Narrative (Justification)

Year 4

Year 4 Project Highlights and Major Milestones:

- Implement eTranscripts
- Design and Implement Workforce Data Integration
- Monitor ndSLEDS operations
- Monitor data quality via audits
- Address ndSLEDS bug/fixes and install software upgrades
- Analyze help desk tickets and conduct user satisfaction surveys to identify opportunities for improvement
- Make system enhancements
- Add additional education data
- Provide ongoing training

1. Personnel (Yr. 4)

Budget: \$114,700

In Kind: \$292,800

During Year 4 State resources begin to ramp down as major initiatives are completed and the program enters operations and maintenance

Executive Sponsor

Budget: \$0

In Kind: \$4,500

The Executive Sponsor role will be filled by an existing DPI resource. This resource will be 5% dedicated to the program during Year 4. The State will fund 100% of the cost of this role as an **in kind** contribution.

Program Manager

Budget: \$0

In Kind: \$70,000

The Program Manager role is a new “key” position in DPI responsible for coordinating tasks between the State and school districts. This role will provide communication plans, coordinate status meetings and design meetings with the school districts and represent the districts cohesively as a member of the project team. This resource will be 100% dedicated to the program in Year 4. The State will fund 100% of the cost of this role as an **in kind** contribution.

Project Director

Budget: \$32,500

In Kind: \$0

The Project Director role is a new “key” position that will be filled by the DPI MIS Director. This resource will be re-assigned to support the program and be responsible for coordinating the data stewardship and program managers. This resource will be 50% dedicated to the program in Year 4.

Data Stewards

Budget: \$20,000

In Kind: \$0

Data Stewards are representatives from the SEA, Education Standards and Practices Board, Career and Technical Education, and School Districts that are considered the domain experts on specific data sources. Data Stewards are existing State resources with responsibilities that include working with the ndSLEDS project implementation team to define and implement data governance processes, evaluate and fix data quality issues, and provide domain expertise to integrate and use data in the ndSLEDS. During Year 4, the budget includes up to 10 Data Stewards dedicating 5% of their time to the program.

Budget Narrative (Justification)

Year 4

QA/Testing

Budget: \$6,000

In Kind: \$0

There will be one internal QA/Testing position contributing to the program providing quality assurance and testing support to all projects during Year 4 including the SIF Pilot, the ndSLEDS Data Warehouse, and the ndSLEDS BI Reporting Tool. This position will be filled by an existing DPI research staff member. This resource will be 20% dedicated to the program in Year 4 and will sustain QA/Testing ongoing.

Sr. Research Analyst

Budget: \$16,200

In Kind: \$0

There will be one Sr. Research Analyst position contributing to the program providing statistical analysis, developing requirements, performing analysis on data, and defining report requirements related to the ndSLEDS project. This position will be filled by an existing DPI resource. This resource will be 30% dedicated to the program in Year 4.

DPI Programmer

Budget: \$0

In Kind: \$51,500

There will be two DPI Programmer positions contributing to the program providing general programming support and enhancements for various source systems including STARS. These positions will be filled by existing DPI resources. These resources will be 50% dedicated to the program in Year 4. The State will fund 100% of the cost of these roles as an **in kind** contribution.

STARS Contractor

Budget: \$0

In Kind: \$35,000

There will be one STARS Contractor position contributing to the program providing business and data analysis support for STARS. This position will be filled by an existing Contractor responsible for STARS development today. This resource has been budgeted for approximately 320 hours in Year 4. The State will fund 100% of the cost of this role as an **in kind** contribution.

EDFacts Coordinator

Budget: \$0

In Kind: \$16,800

There will be one EDFacts Coordinator position contributing to the program providing support for EDFacts reporting. This position will be filled by an existing DPI resource. This resource will be 30% dedicated to the program in Year 4. The State will fund 100% of the cost of this role as an **in kind** contribution.

DPI Trainer

Budget: \$25,000

In Kind: \$0

There will be one DPI Trainer position contributing to the program providing end-user training support. This position will be filled by an existing DPI resource trained in data driven decision making and the BI tool. This resource will be 50% dedicated to the program during Year 4.

District Help Desk Support

Budget: \$15,000

In Kind: \$0

There will be one District Help Desk Support position contributing to the program providing level 1 help desk support to school districts for the ndSLEDS project. This is a new position. This resource will be 50% dedicated to the program during Year 4.

DPI Help Desk Support

Budget: \$0

In Kind: \$15,000

There will be one DPI Help Desk Support position contributing to the program providing Level 3 help desk support for the ndSLEDS project. Level 3 supports policy and operational issues for

Budget Narrative (Justification)

Year 4

regional and district data stewards. This position will be filled by an existing DPI resource. This resource will be 50% dedicated to the program during Year 4. The State will fund 100% of the cost of these roles as an **in kind** contribution.

Regional DDDM trainer and researcher Budget: \$0 In Kind: \$100,000

There will be two **Regional DDDM trainer and researcher** positions contributing to the program providing training and research support for school districts. These positions will be filled by State resources outside of DPI. These resources will be 100% dedicated to the program in Year 4. The State will fund 100% of the cost of these roles as an **in kind** contribution.

Regional trainers will assist district data stewards as level 2 support issues reported through the District Help Desk Support.

2. Fringe Benefits (Yr. 4) Budget Request: \$34,410 In Kind: \$87,840

The State of North Dakota contributes 30% of base salary for health benefits, retirement, social security, workers compensation, and unemployment insurance.

Position	Budget Request	In Kind
Executive Sponsor	0	\$1,350
Program Manager	0	\$21,000
Project Director	\$9,750	0
Data Stewards (10 people)	\$6,000	0
QA/Testing	\$1,800	0
Sr. Research Analyst	\$4,860	0
DPI Programmer	0	\$8,700
DPI Programmer	0	\$6,750
STARS Contractor	0	\$10,500
EDFacts Coordinator	0	\$5,040
DPI Trainer	\$7,500	0
District Help Desk Support	\$4,500	0
DPI Help Desk Support	0	\$4,500
Regional Trainer	0	\$15,000
Regional Trainer	0	\$15,000
Total:	\$34,410	\$87,840

3. Travel (Yr. 4) Budget Request: \$14,140 In Kind: \$ 0

Description	Budget Request	In Kind

Budget Narrative (Justification)

Year 4

Description	Budget Request	In Kind
Annual Trip to DC		
Airfare (2 persons @ \$800 per ticket)	\$1,600	
Lodging (2 persons @ \$180 per night @ 3 nights)	\$1,080	
Transportation / Parking (2 persons @ \$35 per day @ 3 days)	\$210	
Meals / Incidentals (2 persons @ \$75 per day @ 3 days)	\$450	
	0	
Data Stewards (5 people per Quarter)	0	
Lodging (5 persons @ \$65 per night @ 4 nights @ 4 trips)	\$5,200	
Transportation / Parking (5 persons @ \$180 per trip @ 4 trips)	\$3,600	
Meals / Incidentals (5 persons @ \$25 per day @ 4 days @ 4 trips)	\$2,000	
	0	
Total:	\$14,140	\$ 0

4. Equipment (Yr. 4) Budget Request: \$357,600 In Kind: \$ 0

Description	Budget Request	In Kind
Warehouse Servers/ License/ Storage (annual support)	\$50,000	
Servers SIF (annual support)	\$1,000	
BI Tool (annual support)	\$100,000	
DW Software (annual support)	\$47,600	
eTranscripts license	\$159,000	
Total:	\$357,600	\$ 0

5. Supplies (Yr. 4) Budget Request: \$2,500 In Kind: \$ 0

Description	Budget Request	In Kind
General Office Supplies	\$2,500	
Total:	\$2,500	\$ 0

6. Contractual (Yr. 4) Budget Request: \$668,500 In Kind: \$ 0

Budget Narrative (Justification)

Year 4

Description	Budget Request	In Kind
<p>ITD Contract (continued from Yr. 3) Continue contract with ITD to fill technical roles on the ndSLEDS implementation team. The ITD positions will assume all operations and maintenance duties for the data warehouse. Ongoing expansion of education data into the warehouse and the creation of statewide reports and public reporting.. Team includes multiple roles including:</p> <p>Project Manager Rate = \$85/hr for 1,900 hrs IT Engineer (hosting support) Rate = \$85/hr for 950 hrs DBA and ETL developer Rate = \$85/hr for 950 hrs Portal/Report developer Rate = \$85/hr for 1,900 hrs Report developer Rate = \$85/hr for 1,900 hrs</p>	\$527,000	
<p>Analysis, design and development to load unemployment insurance data in the data warehouse and build reports. Tasks include: Data analysis, data matching and definition, data modeling, design and build ETL, design and build reports, testing, and deployment.</p>	\$75,000	
<p>SLDS Implementation Team (continued from Yr. 2) SLDS vendor will provide ongoing end-user training sessions on data driven decision making and usage of the BI environment. Establishment of standard training methodologies and transfer of knowledge to DPI and district trainers:</p> <p>DW Training and Content Rate = \$140/hr for 475 hrs</p>	\$66,500	
Total:	\$668,500	\$ 0

7. Construction (Yr. 4)	Budget Request: \$0	In Kind: \$0
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Not Applicable

8. Other (Yr. 4)	Budget Request: \$2,500	In Kind: \$ 0
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Description	Budget Request	In Kind
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Budget Narrative (Justification)

Year 4

Description	Budget Request	In Kind
SIFA Membership Fee	\$2,500	
Total:	\$2,500	\$ 0

9. Total Direct Costs (Yr. 4) Budget Request: \$1,194,350 In Kind: \$380,640

10. Indirect Costs (Yr. 4) Budget Request: \$21,451 In Kind: \$42,251

DPI will use the federally authorized rate of 11.1% to cover indirect costs. This rate is applied to all costs except equipment and only the first \$25,000 of any contract labor. It is expected that DPI will establish 4 separate contracts with vendors to complete the project.

11. Training Stipends (Yr. 4) Budget Request: \$0 In Kind: \$0

Not Applicable

12. Total Costs (Yr. 4) Budget Request: \$1,306,801 In Kind: \$331,891