Abstract

Illinois Longitudinal Data System (ILDS) Project

The Illinois State Board of Education (ISBE) has designed, built, and deployed some of the fundamental building blocks of a statewide longitudinal data system, including implementation of a unique student ID and student-level data collection. While in a better position to support the tracking of individual students, ISBE needs to take the critical steps of integrating all ISBE student-level data collection systems and connecting student-level data with data from other parts of the ISBE education enterprise (e.g., staff data, special education, and school district finance). In addition, ISBE and its state education partners seek to link P-12 data maintained by ISBE with postsecondary and employment data on Illinois graduates in order to analyze the impact of educational programs on student outcomes.

The goal of the ILDS Project is to establish the technical and management systems necessary for ISBE and its education partners to manage, link, and analyze P-20 education data through the following interrelated components:

Component #1–Establish a State Education Data Advisory Group. ISBE will convene a broad-based group of stakeholders to advise ISBE and its education partners on data use and management. This project component will establish a defined body responsible for advising on data coordination across agencies and implementation of joint data activities.

Component #2–Develop an Enterprise-wide Data Architecture. ISBE will establish standard data definitions to support federal reporting, define a data architecture for data warehouse development, and identify data transaction sets to support interoperability with LEA systems.

Component #3–Improve Data Quality Through a System of Data Stewards and Enhanced Data Audit Procedures. ISBE will establish a system of data stewards with responsibility for data quality and management for all ISBE centers, establish a process of statistical checks for LEA data submissions, and expand LEA training opportunities to improve data quality.

Component #4–Develop an Education Enterprise Data Warehouse. Through development of a data warehouse, all student-level data maintained by ISBE will be linked to other student-level data and K-12 education data. LEAs will be able to obtain numerous additional data reports and have expanded ability to perform data analyses using data maintained by ISBE. Within the data warehouse, ISBE will create a Data Mart specifically for federal reporting that draws data from multiple systems and significantly reduces the reporting burden on the SEA and LEAs.

Component #5–Link the ISBE Unique Student Identifier with Postsecondary and Employment Data and Use Linked Data for Research and Evaluation Purposes. ISBE and its state education partners will build on existing efforts to enable use of the ISBE unique student identifier for linkages with postsecondary and employment data. ISBE and its education partners will also work to establish data-sharing agreements consistent with FERPA and state privacy protection laws that permit data sharing among ISBE, postsecondary, and employment systems. Through this project component, the state-level education and employment agencies will have in place processes to use shared data for long-term longitudinal studies, state-supported research and evaluation, and research conducted by external organizations.
A. Need for the Project

The Illinois State Board of Education (ISBE) has designed, built, and deployed some of the fundamental building blocks of a statewide longitudinal data system. This includes implementation of a unique student ID and student-level data collection. While ISBE is now in a better position to support the tracking of individual students, it needs to take the critical steps of integrating all ISBE systems that collect student-level data and connecting student-level data with data from other parts of the ISBE education enterprise (e.g., staff data, special education, and LEA finance). This fundamental integration is needed to support the analysis of the factors that contribute to student performance. The ability to integrate these data and provide information in an easy-to-use manner to LEA administrators and teachers is key to creating a decision-making environment in Illinois that is data driven. In addition, ISBE and its state education partners seek to link P-12 data that are maintained by ISBE with postsecondary and employment data on Illinois graduates in order to analyze the impact of educational programs on student outcomes. Through the Illinois Longitudinal Data System (ILDS) Project described here, ISBE seeks to establish the technical and management systems necessary for ISBE and its education partners to manage, link, and analyze P-20 education data.

Status of the Current Statewide Data System

In 2001, ISBE developed an information technology strategic plan in which ISBE identified the following as critical data system components necessary to serve Illinois education stakeholders: a statewide student information system (SIS), an electronic grants management system (eGMS), and a data warehouse. Since the development of the strategic plan, ISBE has deployed the SIS and the eGMS.

Focusing on the statewide SIS, ISBE conducted a requirements analysis in 2002 and identified the high-level requirements for collecting and managing student data from LEAs. In a local control state where LEAs range dramatically in size, ISBE decided to implement a state SIS where LEAs continue to manage their own local student data management systems but require them to submit student-level data through a state data collection and management system.

In designing a statewide SIS, ISBE considered the following needs:

- The system needed to place minimal data reporting burdens on LEAs.
- The system needed to support LEAs that ranged in size and sophistication from fewer than 50 students to more than 400,000 students, and needed to support the collection of 2 million student records from all LEAs collectively.
- The system needed to be designed so that LEAs could use their local student data management packages to submit data to the state SIS.
- The state SIS needed to support the assignment of a unique state student ID that LEAs could assign to each of their students and store in their local student data management packages.
- The state needed to design the SIS to be a central repository for student demographics and to serve as the source for state assessment pre-ID labels.
The SIS repository needed to be designed so that it could support the integration of assessment data when results were available from the assessment vendor.

The update of student data loaded into the state SIS needed to support, to the extent possible, real-time updates.

ISBE initiated the project in summer 2004 with vendor support and planned a three-year phased deployment. In summer 2005, ISBE piloted and then deployed statewide the assignment of unique student IDs. This was followed by the deployment of the pre-ID test label generation in winter 2006 to support the 2005-2006 state assessment process. To date, much of the ISBE effort has focused on the processes supporting the assignment of the unique student ID and the data-collection processes supporting the state assessment cycles. Reporting capabilities have focused primarily on data quality, providing LEA views of data to support data cleansing and validation efforts.

**Need to Expand the ISBE SIS to Support a Full Longitudinal Tracking System**

*Need for Enterprise-wide Data Integration and Analysis.* Since ISBE has begun to stabilize the student ID assignment and data collection processes, it now manages a valuable repository of data that it should make available to LEAs (administrators and teachers), program evaluators, and policymakers to support decisions in the classroom. As of September 2008, the ISBE SIS includes:

- Four years of student enrollment data and program information.
- Updated student demographic information.
- Three years of assessment results.

In addition, ISBE currently manages a series of legacy systems that contain valuable information on student characteristics and program investments, which are needed to support the analysis of student outcomes in Illinois. Specifically, these other sources provide the following data:

- Teacher demographic and certification information.
- LEA and school program participation.
- LEA financial information, including budget and expenditures.
- LEA facilities (buildings and equipment).
- Specialized student programs, including technical education and special education information.
- LEA compliance and monitoring.
- LEA child nutrition services, including free and reduced-price breakfast and lunches (public, nonpublic, and ungraded entities).

ISBE policy analysts and LEAs are now requesting to have access, in a secure environment and consistent with FERPA, to these various sources of information in a more integrated format to support research and analysis. Due to limited resources, ISBE has not been able to transform this repository of data into a tool that LEAs and other education stakeholders can use. ISBE is now at the stage where it needs to develop an educational data warehouse to support a decision-making environment that is data driven.
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Need to Support the Federal Electronic Data Exchange Network (EDEN)/EDFacts. ISBE needs to improve the approach it uses to support the data aggregation and submission process for EDEN/EDFacts. Specifically, ISBE currently supports a series of automated programs that pull data from the various source systems to produce the aggregations and calculations for EDEN/EDFacts. This is a high-maintenance process that can be streamlined with the right data architecture and solution set in place (i.e., developing an enterprise-wide data architecture and data warehouse).

Need to Support the Ecosystem of Illinois Education Programs. The ISBE SIS primarily collects and maintains data relating to the K-12 public education system. Recently, the ISBE SIS has been expanded to include data from state-supported PreK programs. As factors that have an impact on student performance and outcomes are further examined, LEAs and education policy makers are interested in student outcomes subsequent to high school graduation. Specifically, ISBE, LEAs, postsecondary education, and legislators are interested in capturing and tracking:

- The educational program status of Illinois P-12 students who participate in postsecondary education efforts–university, college, vocational education, or military.
- The postsecondary education and employment outcomes for these students to enable awareness of the types of employment opportunities that students take on after graduation from the Illinois educational system.

ISBE and its partners in education would like to analyze the data to understand the variables that produce students with successful academic outcomes, which lead to successful employment opportunities in the state and elsewhere. Using this information, ISBE and its partners can shape programs that provide opportunities for students to be successful. In response to this need to understand the impact of the entire ecosystem of educational programs in Illinois, ISBE and its state education partners need to implement strategies to link the ISBE-assigned unique student ID with other state education data systems to support P-20 program analyses.

Statewide Longitudinal Data System Requirements

Through the ILDS Project, ISBE will undertake activities to build a statewide longitudinal data system that complies with the minimum requirements for statewide longitudinal data systems, as described in Section IV of the federal Request for Applications (RFA).

Table 1. Minimum SLDS Requirements

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<tr>
<th>Governance and Policy Requirements</th>
<th>Current Status</th>
<th>Plans</th>
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<td>Need and Uses. In addition to providing information that helps to improve student achievement and reduce achievement gaps among students, a successful data system should address the other</td>
<td>ISBE data systems currently cannot provide data that can be effectively used in education decision-making at multiple levels, from policy to classroom instruction. Data currently collected by the agency is highly fragmented across various systems</td>
<td>In order to provide data that can be used in decision-making at multiple levels, ISBE must develop an education enterprise-wide data warehouse,</td>
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### Project Narrative

#### Governance and Policy Requirements

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<td>key educational policy questions in the state. The system should provide data that can be used in education decision-making at multiple levels, from policy to classroom instruction.</td>
<td>and collection vehicles. This fragmentation includes multiple data systems that include student-level data, as well as a variety of systems that maintain data from other parts of the ISBE education enterprise (e.g., staff data, LEA and school program participation, and LEA financial information). ISBE has little ability to perform analyses of data across its systems and cannot effectively deliver data from these systems for reporting or analysis purposes.</td>
<td>which it seeks to develop through the ILDS Project.</td>
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Governance. A successful data system rests upon a governance structure that involves state and local stakeholders in system design and implementation. Particularly when expanding the data capacity in existing P-12 systems to include other educational data, an SLDS must identify the entities responsible for operation of the statewide data system and should include a common understanding of data ownership, data management, and data confidentiality and access, as well as the means to resolve differences among partners. Illinois needs to establish a data system governance structure that involves state and local stakeholders in system design and implementation. To accomplish this task, ISBE proposes to establish a State Education Data Advisory Group through the ILDS Project.

Institutional Support. A successful data system requires institutional support from leadership within the SEA and from relevant stakeholders within and external to the SEA. The support must include authorization to develop and implement the SLDS, as well as the commitment of necessary staff and other resources. If the SLDS is to be expanded to include data from other systems, The Institutional Support section of this narrative describes the support from ISBE and other relevant stakeholders for the ILDS Project. The letters of support included in Appendix A further demonstrate that all involved institutions are committed to working toward shared data system outcomes and objectives. ISBE and its state education partners intend to continue to place the highest priority on a quality state education data system. The State Education Data Advisory Group created through the ILDS Project will help to establish a shared vision for outcomes.
### Governance and Policy Requirements

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<td>all institutions involved must agree to a shared vision for outcomes and objectives.</td>
<td>The Project Personnel and Resources section of this narrative demonstrates that ISBE will commit the staff and expertise necessary to implement the ILDS Project and oversee its continued operation.</td>
<td>The ILDS Project components will help to establish the technical and management systems needed to oversee ongoing maintenance of the project, quality control, and user training.</td>
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**Sustainability.** A successful data system requires ongoing support from the SEA after it has been implemented. At a minimum, the system requires ongoing commitment of staff and other resources for system maintenance, quality control, and user training. 

### Technical Requirements

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<td>Federal Reporting. A successful data system must be able to meet federal reporting requirements, including those of the EDFacts system; the system should provide efficiencies that reduce the burden of federal reporting for schools and LEAs.</td>
<td>Because of the multiple data systems maintained by ISBE, federal reporting tasks are typically intensive efforts that absorb a great deal of staff time to complete. In addition, LEAs report information through multiple systems that is later used by ISBE to meet federal reporting requirements.</td>
<td>The centralization of data within an education enterprise-wide data warehouse as part of the ILDS Project will significantly reduce the burden of federal reporting for ISBE and LEAs.</td>
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<td>Privacy Protection and Data Accessibility. An SLDS must ensure the confidentiality of student data, consistent with FERPA requirements and other state laws and regulations concerning confidentiality of individual records. The system should also include documentation that clearly articulates what data will be accessible, to which users, and for what purposes.</td>
<td>Privacy protection was of central concern to ISBE when developing the SIS. ISBE and its state education partners have maintained a significant focus on privacy protection when considering the interoperability between P-12 and postsecondary and employment data.</td>
<td>Privacy protection and data accessibility will continue to be of critical importance to all components of the ILDS Project.</td>
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<tr>
<td>Data Quality. A successful data system must ensure the integrity, security, and quality of data. It should include an ongoing plan for training those entering or using the data, as well as procedures for monitoring the accuracy of ISBE has established specific audit functions associated with the SIS. The ISBE SIS application generates audit trail entries for all online and batch processes. An audit trail is maintained when the user requests the assignment of a new unique student ID or validates and updates student records.</td>
<td>As part of the ILDS Project, ISBE seeks to strengthen its data audit systems to assess data quality, validity, and reliability.</td>
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Technical Requirements

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<td>information.</td>
<td>Implementation of the ISBE SIS has involved extensive and ongoing training of LEA personnel.</td>
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<tr>
<td>Interoperability</td>
<td>The ISBE SIS currently has the ability to produce a variety of reports for LEAs. However, this reporting capacity is limited because the ISBE SIS is not linked with other ISBE systems through a data warehouse. Efforts have been initiated to link ISBE data with postsecondary and employment data.</td>
<td>As part of the ILDS Project, ISBE seeks to improve interoperability with LEAs by enhancing and expanding its data reporting through establishing a data warehouse. ISBE also seeks to build on recent efforts to improve interoperability with postsecondary and employment data.</td>
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<td>Enterprise-wide Architecture</td>
<td>ISBE has developed a system for assigning unique student IDs as part of the ISBE SIS. ISBE has not developed the enterprise-wide data architecture necessary to link the ISBE SIS with other systems.</td>
<td>As part of the ILDS Project, ISBE seeks to develop an enterprise-wide data architecture to support all of its longitudinal data system improvements and enhancements.</td>
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B. Project Objectives

ISBE seeks to achieve the following five objectives through the ILDS Project:

1. Establish a State Education Data Advisory Group.
2. Develop an enterprise-wide data architecture.
3. Improve data quality through a system of data stewards and enhanced data audit procedures.
4. Develop an education enterprise data warehouse.
5. Link the ISBE-assigned unique student ID with postsecondary and employment data, and use linked data for research and evaluation purposes.

Each objective is described in Table 2.
## Table 2. Objectives, Current Status, Expected Outcomes

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<tr>
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<th>Expected Outcomes</th>
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<tbody>
<tr>
<td>1. Establish a State Education Data Advisory Group.</td>
<td>Coordination among state education agencies and with other external stakeholders on data issues is on an ad hoc basis.</td>
<td>1. A broad-based group of stakeholders will advise ISBE and other state education agencies on data use and management. 2. The state will have a defined body responsible for advising on data coordination across agencies and implementation of joint data activities.</td>
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<td>2. Develop an enterprise-wide data architecture.</td>
<td>While ISBE has a system to assign unique student IDs, it does not have an enterprise-wide data architecture.</td>
<td>1. Standard data definitions will be established to support federal reporting. 2. Data architecture will be defined for data warehouse development. 3. Data transaction sets will be identified to support SIF vertical reporting within LEAs.</td>
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<td>3. Improve data quality through a system of data stewards and enhanced procedures for data auditing.</td>
<td>ISBE has in place specific data audit functions associated with the ISBE SIS.</td>
<td>1. A system of data stewards will be established with responsibility for all ISBE Centers. 2. A process of statistical checks will be in place for LEA data submitted to ISBE. 3. LEAs will have expanded opportunities to participate in training to improve data quality.</td>
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<td>4. Develop an education enterprise data warehouse.</td>
<td>ISBE manages a valuable repository of data but has limited ability to effectively use the data for education decision-making, federal reporting, and reporting to LEAs.</td>
<td>1. All student-level data maintained by ISBE will be linked with other student-level data and other P-12 education data. 2. LEAs will be able to obtain numerous additional data reports from the ISBE SIS and have expanded ability to perform data analyses using data maintained by ISBE. 3. ISBE will have an EDFacts Data Mart that draws data from multiple systems to facilitate federal reporting. 4. State education partners will be able to query P-12 and postsecondary data linked within the data warehouse through established protocols consistent with FERPA. 5. Advanced Placement® exam scores will be collected through the ISBE SIS and maintained in the data warehouse.</td>
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<td>5. Link the ISBE-assigned unique student ID with postsecondary</td>
<td>ISBE has undertaken an administrative rule change to add its unique student ID to high school transcripts so that postsecondary institutions can also receive</td>
<td>1. Postsecondary data systems will be able to enter and maintain unique student ID numbers received from high school transcripts. 2. Data-sharing agreements consistent with FERPA and state privacy protection laws will be in place to permit sharing of data among ISBE, postsecondary,</td>
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<td>and employment data; use linked data for research and evaluation purposes.</td>
<td>and use the unique student ID for data linkages. ISBE and other state education partners are negotiating the data-sharing agreement necessary to produce high school feedback reports on postsecondary outcomes.</td>
<td>and employment systems. 3. Publicly available high school feedback reports will analyze and present postsecondary outcome data for every Illinois public high school. 4. ISBE and its state education partners will have processes in place to use shared data for long-term longitudinal studies, state-supported research and evaluation, and research conducted by external organizations.</td>
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Determination of the Needs for and Uses of the ILDS Project

ISBE has undertaken several requirements analyses to determine the needs for and uses of the ILDS Project. As described in the Need for the Project section, ISBE undertook a requirements analysis in 2002 that identified the high-level requirements for collecting and managing student data from LEAs. This analysis informed the development of the ISBE SIS and will also inform the ILDS Project.

In addition to the 2002 analysis, ISBE completed a preliminary data warehouse requirements analysis in 2006 to document the decision support requirements and high-level project design and implementation plan. The requirements analysis was performed by an external consultant selected through a competitive procurement process and was based on interviews with key state educational agency personnel and reviews of specific ISBE system documentation. The requirements analysis:

- Identified potential users of the data warehouse.
- Defined the business requirements for the system.
- Identified the types of data to be stored in the data warehouse.
- Discussed risk management and privacy protection concerns.
- Included a detailed approach recommended for data warehouse development designed to be vendor neutral and compatible with existing ISBE technical architecture.
- Included a cost analysis and estimated budget for data warehouse development over a three-year implementation period.

Based upon the requirements analysis and the ongoing ISBE review of data warehouse needs, ISBE has identified the following populations as potential users of the data warehouse:

- ISBE
- LEAs
- Regional offices of education and intermediate service centers
- Parents and other members of the general public
- State legislators
- News media
- Research organizations
- Postsecondary institutions
- State workforce and higher education agencies

Implementation of the ILDS Project will involve ongoing feedback of the needs for and uses of
the ILDS Project through input from the State Education Data Advisory Group and through coordination with various ISBE divisions by the data stewards.

C. Project Design

Plans for Accomplishing Project Objectives

Objective 1: Establish a State Education Data Advisory Group
To ensure that the ILDS Project serves all education stakeholders, ISBE views establishing a State Education Data Advisory Group as a vital component of the ILDS Project. This group will be responsible for the sponsorship, buy-in, and direction of an enterprise education solution, and for determining the methods for connecting data across the education and employment spectra. It is envisioned that this group will consist of key ISBE representatives and representatives from entities from across the Illinois education and state governance enterprise, as described in Appendix A.

The State Education Data Advisory Group will help to define the vision and scope of the other project components and will serve as a monitor of progress. The group will advise ISBE on the parameters for change management, communication, user interface requirements, and training needs for the end users of the system. The group will also provide a forum for determining the technical, legal, and governance systems needed to connect ISBE data with postsecondary and employment data.

It is necessary for the State Education Data Advisory Group to be established and in place before any physical solution build activities can occur that involve multiple stakeholders. Specific tasks envisioned for the group include:

- A kick-off meeting of key representatives to discuss the overall project charter and strategic direction of the ILDS Project components that support tracking and integration of student data.
- Bimonthly meetings to review project status and to focus on the definition and implementation of data ownership and stewardship, as well as process changes to be implemented to support the submission and integration of data.

ISBE anticipates that the State Education Data Advisory Group will meet on an ongoing basis throughout the duration of the grant timeframe (i.e., bimonthly over the 48-month project period).

Objective 2: Develop an Enterprise-wide Data Architecture
ISBE seeks to develop an enterprise-wide data architecture to support the various forms of federal reporting, effectively provide data to LEAs in a useful format, and support data reporting from LEAs. ISBE recognizes that this component is an ongoing activity that must be initiated and designed before beginning any of the solution extension and build projects included in the ILDS Project.

With the enterprise-wide data architecture in place, ISBE will be able to:

- Coordinate the standard NCES and federal data definitions to ensure that the resulting data
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architecture can support the various forms of federal reporting, including EDEN data collections.

- Determine how to extend the ISBE SIS to include additional transaction data with the idea of being able to “sunset” certain legacy systems and thereby simplify the systems that ISBE needs to maintain. In addition, expanding the ISBE SIS to capture additional data collections currently performed by legacy systems will simplify the workload of data preparation and submission performed by LEAs.

- Define the data warehouse data architecture, including the subject areas and data types, that need to be tracked in a data warehouse to support all Illinois educational system stakeholders. The data standards also will facilitate the data feeds—both data format and definitions—from source systems, which will ensure that meaningful data are loaded into the data warehouse and can then be provided to LEAs for analysis.

- Identify the data transaction sets that will need to be defined to support an implementation of SIF vertical reporting by LEAs that are SIF-enabled.

The ISBE plan to develop an enterprise-wide data architecture includes the following tasks:

- Identify key ISBE and State Education Data Advisory Group representatives to review and determine the enterprise-wide data architecture scope and direction.

- Determine an approach for building an enterprise-wide data architecture (e.g., leverage existing federal and state models, review and use vendor models, implement a pure custom build, or implement a hybrid approach).

- Issue a request for proposals and enter into a contract for a data architecture contractor.

- Build the enterprise-wide data architecture that will address the data needs of Illinois education stakeholders.

- Based on the enterprise-wide data architecture, map the data subject areas and data definitions to the ISBE SIS.

- Define the data interfaces that need to be in place to support the ISBE SIS and the data warehouse.

- Make periodic updates to the data architecture, as necessary.

Objective 3: Improve Data Quality Through a System of Data Stewards and Enhanced Data Audit Procedures

ISBE understands the need to address data integrity as a critical activity to support all elements of the ILDS Project. Currently there are specific audit functions associated with the ISBE SIS. The ISBE SIS application generates audit trail entries for all online and batch processes. An audit trail is maintained when the user requests the assignment of a new unique student ID or validates and updates student attributes. However, ISBE recognizes the need to improve its data audit systems to support timely and accurate data reporting and analyses.

Through the ILDS Project, ISBE will work to provide support, management, and guidance for improving the accuracy and actual use of data that are internal and external to the agency. As such, four data stewards will be hired and assigned responsibility for the four ISBE Centers: Standards and Assessments, Special Education and Support Services, School Support Services for All Schools, and Fiscal Support Services. Data stewards will report to the ILDS project sponsors and will have the following responsibilities:
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- Identify business rules for each ISBE Center.
- Work with internal and external individuals to reduce data redundancy.
- Ensure accuracy of data submitted.
- Train staff in usage of data systems, data analysis, and research.
- Identify research and analyses that would be useful for each ISBE Center.
- Lead technical assistance workshops/training in data quality and how to use the data for analysis and research.

Data stewards will play a key role in reducing data redundancy and increasing the accuracy of the data across the agency.

In addition to the data stewards, ISBE will undertake several activities to improve the quality of data submitted to ISBE from LEAs. ISBE will establish a process for performing statistical checks on data submitted by LEAs to identify possible data integrity concerns. In addition, LEAs will be offered the opportunity to participate in training using the Forum Curriculum for Improving Education Data: A Resource for Local Education Agencies. The lessons contained in this curriculum help define and describe types of data errors and problems and describe the steps involved in validating and auditing data.

The ISBE plan to improve data quality and enhance its data audit system includes the following tasks:

- Define the qualifications for the data stewards and recruit and hire staff for these positions in accordance with state standard procedures.
- Upon hiring, each data steward will, under the direction of the ILDS project sponsors, identify business rules for each ISBE Center, establish a plan for improving the accuracy of data submitted, and establish a training plan for ISBE staff and an outreach/training plan for LEAs and other data sources.
- Each data steward will work with the ILDS project sponsors, project manager, and each ISBE Center director to establish a data analysis and research agenda for each Center.
- In consultation with the ISBE SIS contractor, the data stewards will establish a protocol for statistical checks to ensure the validity of data submitted by LEAs.
- The data stewards will implement the plans developed under the previous tasks and annually update the data analysis and research agenda for each ISBE Center.

Objective 4: Develop an Education Enterprise Data Warehouse

Through the recent development and expansion of the SIS, ISBE has laid the foundation for the ILDS Project described here. The ISBE SIS contains unique student IDs for each student, student demographics, program participation indicators, assessment results, enrollment data, and FTE counts. In addition to the SIS, however, ISBE currently maintains multiple other data systems containing data that must be linked with the ISBE SIS to support federal reporting requirements, provide integrated data to LEAs, and promote research and analysis for ISBE and other educational stakeholders. As part of the ILDS Project, ISBE seeks to establish a data warehouse that integrates data from multiple systems into an operational data store, which would, in turn, feed a data warehouse and potential data marts for reporting and decision support.

The content of the data warehouse is in large part determined by the targeted user communities.
and identified business requirements. However, availability and quality of data in ISBE, as well as privacy and confidentiality concerns, also dictate the substance of the data warehouse. In addition to the ISBE SIS, the following systems have been identified as critical for inclusion in the data warehouse:

- **Illinois Student Information System (ISIS)**—Maintains individual student data on students taking career and technical education (CTE) courses, and produces program accountability required for the Carl D. Perkins Vocational and Technical Education Act.

- **Special Education Systems (Approval and Reimbursement System (SEARS); The Funding and Child Tracking System (FACTS))**—SEARS collects individual student data on students with individualized education programs and personnel data on all full- and part-time special education staff, and produces required program information for Individuals with Disabilities Education Act and state-mandated special education programs. FACTS collects LEA special education funding and approval tracking information.


- **Child Nutrition System (CNS) and Application and Claim Entry System (ACES)**—Collects application, claim, and monitoring data for sponsors and sites in the National School Lunch Program, Child and Adult Care Homes Program, Child and Adult Care Day Care Centers Program, and the Summer Food Service Program.

- **Educator Certification System (ECS)**—Collects and manages data and processes that support teacher certifications, teacher placement, professional development, and teacher demographic information.

- **Teacher Service Record System (TSR)**—Contains individual salary and demographic data for teachers and administrators employed in Illinois LEAs and produces information for school and LEA report cards, annual statistical reports, and federal reports.

- **Electronic Grants Management System (eGMS)**—Collects application and budget data from LEAs for the NCLB consolidated applications and a variety of state entitlement and discretionary grant programs.

ISBE has a strong desire to have the data warehouse accessed extensively by as broad a user base as possible. ISBE, regional offices of education/intermediate service centers, and LEA users will access the data warehouse through a web-based interface accessed through the ISBE Web Application Security (IWAS) portal, which will provide all necessary authentication and authorization security functionality. The general public and other entities (e.g., the news media) that do not have access to IWAS will have access through the ISBE public web interface to predefined data warehouse reports and queries. Organizations requiring data not available through this public interface (e.g., other state agencies and research organizations seeking student-level data) will need to work with ISBE to define a data-sharing agreement. ISBE may choose to explore creation of a data warehouse registration process where entities desiring access to data warehouse data not available via the public portal may request access online.

The following outcomes resulting from the development of the data warehouse address the primary purpose of the SLDS grant program, as described in Section III of the federal RFA:
Enhancing and Expanding Data Reporting to LEAs: The data warehouse will enhance and expand the types of data reporting available to LEAs through the ISBE SIS, and enable ISBE to provide data in an easy-to-use format that LEA administrators and teachers can use to support decisions in the classroom. The data warehouse will allow the ISBE SIS data reporting mechanisms to include CTE data included in ISIS and special education data in SEARS/FACTS. Currently, only limited CTE and special education data elements are available in reports that LEAs may access through the ISBE SIS. Depending upon individual security levels, ISBE and LEA users will have the option to view preformatted (canned) reports; view public, nonconfidential (as defined by the Freedom of Information Act) information; run web-based, interactive (ad hoc) queries; and create data extracts that would support local use of statistical and analytical tools (ranging from Excel to SPSS).

Enabling ISBE to Effectively Meet the Reporting Requirements of the U.S. Department of Education ED Facts System: Because of the multiple data systems maintained by ISBE, federal reporting tasks are typically intensive efforts that absorb a great deal of staff time to complete. In addition, LEAs report through multiple systems information that is later used by ISBE to meet federal reporting requirements. The centralization of data within an education enterprise data warehouse will significantly reduce the burden of federal reporting for ISBE and LEAs. ISBE proposes to include in the data warehouse an “ED Facts Data Mart” that will draw data from multiple ISBE systems to facilitate reporting to the U.S. Department of Education.

In addition, other outcomes resulting from the development of the data warehouse address the desire of ISBE to expand the existing P-12 statewide data system:

- Linking Student-Level Data with other P-12 Education Data: Development of the data warehouse will enable ISBE to link student-level data with other P-12 education data currently maintained by ISBE, including teacher demographic and certification information, LEA financial and facility information, LEA compliance and monitoring, and data obtained from ISBE grant programs.

- Linking ISBE Data with Postsecondary Data: The data warehouse will establish query functions to enable ISBE and its state education partners to obtain data reports that link data from ISBE and postsecondary systems. For example, the data warehouse will be designed to link data that are made available by the Illinois Community College Board (ICCB) with CTE data maintained by ISBE to facilitate required reporting under the Carl D. Perkins Vocational and Technical Education Act.

- Inclusion of New Data Elements: As described in the Institutional Support section of this narrative, ISBE has contractually committed to expand its SIS collection activities to include new student-level data elements. In addition to these elements, the ILDS Project will expand data collected through the ISBE SIS and maintained in the data warehouse to include Advanced Placement® test scores obtained by the College Board. ISBE will be required to coordinate with the College Board to ensure that its test administration includes the ISBE SIS unique student ID and to undertake various system upgrades to support the collection and maintenance of this data element.

The ISBE plan to develop an education enterprise data warehouse includes the following tasks and activities:
Project Narrative

- Generate a request for proposals seeking development and implementation of a data warehouse.
- Upon award, update the requirements for the data warehouse and prepare a plan that will implement the data warehouse in phases.
- Design the data warehouse, which includes the operational data store, data warehouse model, Extract Transform Load (ETL) scripts, reports, and training.
- Build and test the operational data store and data warehouse loading and reporting.
- Train end users who will use the data warehouse as applicable to the phase being deployed.

Objective 5:  Link the ISBE-Assigned Unique Student ID with Postsecondary and Employment Data and Use Linked Data for Research and Evaluation Purposes

As a result of this project component, ISBE and the ecosystem of Illinois education partners will be able to:

- Leverage the ISBE-assigned unique ID and transmit it to postsecondary tracking systems in order to determine graduation outcomes and matriculation rates into university, college, and vocational programs.
- Combine P-12, postsecondary, and employment data to facilitate the evaluation and audit of federal and state programs and other state research and evaluation activities.
- Provide postsecondary feedback reports to high schools on the success of their graduates in college and entry into the workforce.

Over the past few years, ISBE has made considerable strides toward achieving these objectives. In 2007, the Illinois College and Workforce Readiness Partnership was established among the Office of the Governor, ISBE, and the Bill and Melinda Gates Foundation to develop and support state policies and programs that ensure Illinois students are prepared for college and work. One of the three priority areas identified for this partnership was the establishment of a high-quality state education data system. External experts, supported by the Gates Foundation, provided ISBE with an analysis that discussed national benchmarks for high-quality data systems, Data Quality Campaign “essential elements” not included in the Illinois system and possible approaches for including these elements, privacy protections and FERPA concerns, and options for enhancing the use of state data for school and LEA improvement and for instructional purposes. ISBE, other state education partners, and external consultants followed up on this analysis by: a) undertaking a detailed review of FERPA implications for linking data across systems and b) scheduling multi-agency working meetings to discuss various strategies for data linkages.

A particular focus of ISBE and its state education partners has been to link P-12 education data maintained by ISBE with the data systems maintained by ICCB and the Illinois Shared Enrollment and Graduation File (ISEG). ICCB maintains student- and school-level data for all 48 public community colleges in Illinois. ISEG was established by the Illinois higher education community in 1991 to facilitate analysis of student enrollment, transfer, and graduation behavior among Illinois institutions of higher education. ISEG contains student-level enrollment and graduation data from all 48 public community colleges, all 12 public universities, and 3 private universities. The data maintained by ISEG are described in Appendix A.
The key to linking ISBE data systems with ICCB systems and ISEG is the establishment of a common student ID that can connect student data across all systems. ISBE primarily relies on the unique student ID used for the ISBE SIS, while ISEG and ICCB use student social security numbers for identification. In August 2008, the State Board of Education approved an administrative rule change that will add its unique student ID to high school student transcripts, allowing postsecondary institutions to enter this number into the ICCB system and ISEG as students enroll. Although this rule change is currently pending before the Illinois Joint Committee on Administrative Rules, ISBE expects it to go into effect in time for the unique student ID to be added to the transcripts of the 2009 high school graduating class.

In addition to the transcript efforts, ISBE, ISEG, and ICCB are in the process of negotiating a data-sharing agreement that will enable the production of a high school feedback report to all Illinois public high schools on their graduates’ postsecondary outcomes. ISEG and ICCB have previously established data-sharing agreements with state agencies maintaining workforce data, and therefore the data-sharing arrangements established for the high school feedback report will also help facilitate longitudinal analyses on students’ entry into and success in the workforce.

While Illinois is establishing the data-sharing arrangements and mechanisms for linking P-12, postsecondary, and employment data, the State needs to supplement these efforts by:

- **Enhancing ISEG into a More Valuable Tool for Research and Analysis.** The Illinois vision for an interconnected P-20 state education data system requires ISEG to be more than a maintainer of postsecondary data. ISEG must have the capacity to effectively coordinate with participating institutions, facilitate data transfers with ISBE and other state agencies, and assist in data analysis and interpretation by state agencies, LEAs, and institutions of higher education.
- **Supporting Efforts by ISEG and Postsecondary Institutions to Enter Unique Student IDs.** With the addition of the unique student ID to student transcripts, each institution participating in ISEG will need to add a new element to its data entry process and ISEG will require upgrades to accept and maintain these data.

ISBE and its state education partners have designed this project component to include the following tasks and activities:

- Establish data-sharing agreements to permit sharing of data among ISBE and postsecondary and employment systems that address responsibility for data security and use consistent with federal and state laws.
- Undertake system enhancements and personnel or contractual support to enable the tracking of postsecondary and employment outcomes and the addition of the ISBE-assigned unique student ID to postsecondary data systems.
- With coordination through the State Education Data Advisory Group, create and implement a plan to facilitate the use of shared data for, at a minimum, the following purposes:
  - Tracking postsecondary and employment outcomes for Illinois public high school graduating classes in the form of long-term longitudinal studies.
  - Establishing a robust system of high school feedback reports on postsecondary outcomes.
  - Creating a value-added assessment system for teacher preparation programs.
Project Narrative

- Enabling state-supported research and evaluation of various federal and state programs.
- Enabling research by outside organizations in accordance with authorized data-sharing agreements.

Governance Structure

The governance structure for the ILDS Project will include establishment of the State Education Data Advisory Group, creation of data-sharing agreements among individual state education entities, and formation of an ISBE Project Management Office to oversee implementation.

State Education Data Advisory Group
The State Education Data Advisory Group will include all of the entities responsible for operating the statewide data system and will allow for establishment of a common understanding around data ownership, management, confidentiality, and access. This group is described in greater detail in the Project Design section and in Appendix A.

Data-Sharing Agreements
Individual members of the State Education Data Advisory Group will establish data-sharing agreements, as necessary, to address the technical and legal requirements associated with particular data merges. The State Education Data Advisory Group will advise on the scope of the data-sharing agreements and assist in resolving any differences among the partners with respect to data-sharing processes.

ISBE Project Management Office
ISBE will establish and maintain a Project Management Office to support management of the information technology project components and to manage day-to-day operations and coordination with the State Education Data Advisory Group. Staffing responsibility for this office is described in the Project Personnel and Resources section.

SLDS Requirements

Table 3 describes how the plans for the ILDS Project components address the requirements for an SLDS set forth in the federal RFA. Refer to Table 1, page 3, for a discussion of the SLDS requirements that have been completed, those that are in the process of being completed, and those planned for the future.

Table 3: Relationship of ILDS Project Components to SLDS Requirements

<table>
<thead>
<tr>
<th>ILDS Project Component</th>
<th>SLDS Requirements Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish a State Education Data Advisory Group.</td>
<td>The establishment of the State Education Data Advisory Group, in combination with the other governance structure components described in this narrative, will address the Governance requirements by: a) engaging all relevant stakeholders; b) establishing a clear understanding of data ownership, management, and confidentiality and access through data-sharing agreements; and c) ensuring oversight for day-to-day implementation and coordination with all partners.</td>
</tr>
<tr>
<td>ILDS Project Component</td>
<td>SLDS Requirements Addressed</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2. Develop an enterprise-wide data architecture.</td>
<td>This component of the ILDS Project directly addresses the <strong>Enterprise-wide Architecture</strong> SLDS requirement, and is key to the ability of ISBE to meet other SLDS requirements, such as <strong>Need and Uses</strong>, <strong>Federal Reporting</strong>, <strong>Privacy Protection and Data Accessibility</strong>, <strong>Data Quality</strong>, and <strong>Interoperability</strong>.</td>
</tr>
</tbody>
</table>
| 3. Improve data quality through a system of data stewards and enhanced data audit procedures. | **Institutional Support:** By integrating data management with each ISBE Center, the data stewards will help to coordinate data system development with leadership across ISBE and with LEA staff who interact with each ISBE Center.  
**Sustainability:** The data stewards will help ensure that all ISBE staff are trained in data use and quality control.  
**Data Quality:** The data stewards and other data audit functions will play a critical role in ensuring the integrity, security, and quality of data submitted to and maintained by ISBE. |
| 4. Develop an education enterprise data warehouse.         | **Need and Uses:** Currently, ISBE has little ability to perform analyses of data across its systems and cannot effectively deliver data from these systems for reporting or analysis purposes. By extracting data from multiple sources to provide integrated reports to state policymakers and LEAs, the data warehouse will allow ISBE to provide data that can be used in education decision-making at multiple levels.  
**Federal Reporting:** The centralization of data within an education enterprise data warehouse will significantly reduce the burden of federal reporting for ISBE and LEAs.  
**Privacy Protection and Data Accessibility:** ISBE and its state education partners have maintained a significant focus on privacy protection when developing all aspects of the state education data system. Privacy protection will continue to be of critical importance to ISBE as it develops the data warehouse. The data warehouse will allow for varying degrees of access to data by different internal and external users in accordance with clearly articulated standards, depending upon privacy protection requirements and the user’s purpose in obtaining the data. |
| 5. Link ISBE unique student IDs with postsecondary and employment data; use linked data for research and evaluation purposes. | **Interoperability:** This component of the project directly addresses the SLDS requirement for interoperability.  
**Institutional Support:** This component will also help to ensure receipt of institutional support from other state education data partners, as the implementation plan will help to establish a shared vision for a P-20 state education data system. |

**D. Institutional Support**

Illinois has made establishment of a quality state education data system a high-priority policy and has committed substantial resources to development of a statewide longitudinal data system.
Project Narrative

Policy Focus on a High-Quality State Education Data System

The State Board of Education is required by law to prepare and update a comprehensive strategic plan for elementary and secondary education in Illinois. The commitment of the State Board of Education to a statewide longitudinal data system is reflected in a strategy recently established within its strategic plan to “develop and sustain a PreK-20 longitudinal data system.” By including this as a strategy in the strategic plan, the State Board of Education will be required to measure and publicly report on the progress of this strategy and will have access to additional state resources for its implementation.

As previously discussed, the Illinois College and Workforce Readiness Partnership established among the Office of the Governor, ISBE, and the Bill and Melinda Gates Foundation has identified creation of a high-quality state education data system as one of three core priority areas. This partnership has allowed the State to access external expertise and resources for data system policy development.

Commitment of Resources

The policy focus of the State has been matched by a commitment of resources. Since 2003, ISBE has invested $10,659,500 in the development of the ISBE SIS. As a result of this investment, every public school student has been assigned a unique student ID, every LEA participates in the ISBE SIS, and ISBE has collected three years of longitudinal student-level demographic and assessment data. Recent upgrades have included assigning a unique student ID to children enrolled in state-supported early childhood programs and the training of early childhood providers throughout the state.

Separate from the funding requested for the ILDS Project, ISBE has contractually committed $8,300,000 through 2013 for continued upgrades and enhancements to the SIS. These upgrades and enhancements will include:

- Expanded ISBE SIS training for LEAs and early childhood providers.
- The addition of new student assessment data elements, including ACT EXPLORE and PLAN assessment data, data from early childhood assessments, and data from translated and alternative assessments.
- Provision of growth model reports, following ISBE development of a growth model for use in accountability determinations.
- Inclusion of new race and ethnicity indicators.
- Addition of new special education and CTE data fields.

In 2004, ISBE entered into a contract to begin development of an entity system. This system, which is essentially a collection of names, addresses, telephone numbers, and other contact information, will centralize the identification of all entities with whom ISBE does business. Creating an entity system is preferable prior to development of a data warehouse, which ultimately must have consistent information to operate effectively. The entity system is currently being implemented with some ISBE systems and will continue to be expanded to additional systems as a parallel project to data warehouse development.
Project Narrative

In addition to creation and expansion of the SIS and the entity system, ISBE funds the Interactive Illinois Report Card (IIRC), a website with publicly available data and password-protected, student-level data with performance information on every Illinois school and LEA. ISBE has expanded support of the IIRC and collaborated with outside groups to make the report card available to every Illinois school, along with professional development for teachers, paraprofessionals, and administrators for its optimal use. In fall 2006 and 2007, the ISBE Student Assessment Division worked with the Illinois Principals Association and personnel who manage the IIRC to conduct six regional workshops to train educators from approximately 200 LEAs in how to use the IIRC and to provide them with a better understanding of Illinois test data. The workshops also provided training in use and interpretation of formative assessment practices and other resources available to assist local educators.

The 460-member staff of ISBE is provided with adequate space and equipment, including computers, printers, and Internet access, to perform the job responsibilities necessary to carry out the ILDS Project. ISBE is in the process of implementing a data center consolidation project that virtualizes all of its 118 physical servers (through VMware). All of the ISBE back-end storage is being replaced with EMC NS/CX storage at the ISBE main data center in Springfield, Illinois, with full asynchronous redundancy to its disaster recovery data center in Chicago. In addition to the new server and storage hardware, ISBE will implement a fully redundant backup and recovery system at both data center locations. Presently, ISBE hosts and supports two main systems: the eGMS and the ISBE SIS. ISBE has specifically added additional capacity across its infrastructure to accommodate the resources necessary for the ILDS Project. The data warehouse system and functions associated with its development and implementation will be the only system developed under this grant. The continued development of the ISBE SIS and support of existing ISBE applications will not be funded under this grant.

ISBE project staff will be supplied by the ISBE Data Systems Division, which develops, supports, and implements agency data systems applications and manages other computer application projects. The ILDS Project also will be supported, as needed, by staff from the Data Analysis and Progress Reporting Division and the Technology Support Division. The Technology Support Division will provide direct technical assistance to the ILDS project manager and the data systems contractor, meet with the State Education Data Advisory Group, and provide technical expertise, as necessary.

The Illinois Board of Higher Education (IBHE) has also provided funding to support Illinois data efforts. During the last two fiscal years, IBHE has committed more than $340,000 in discretionary grant funds for the support of ISEG.

Improved Standing of Illinois in Data Quality Measures

The focus of Illinois on establishing an effective state education data system has resulted in an improved standing in national benchmarks for data quality. In the Data Quality Campaign/National Center for Education Accountability 2007 State P-12 Data Collection Survey, Illinois demonstrated the following five “essential elements” present as of 2007-08:

1. A unique student ID that connects student data across key databases across years.
2. Student-level enrollment, demographic, and program participation information.
3. The ability to match individual student test records from year to year to measure academic growth.
4. Information on untested students and the reasons they were not tested.
5. Student-level graduation and dropout data.

None of these elements was present in 2005-06. As the result of the ILDS Project, Illinois will be able to demonstrate the following three additional “essential elements”:

1. Student-level college readiness test scores.
2. The ability to match student records among the P-12 and higher education systems.
3. A state data audit system assessing data quality, validity, and reliability.

Illinois will also use the State Education Data Advisory Group to analyze and consider the policy and technical issues associated with the last two “essential elements”: 1) establishing a teacher identification system with the ability to match teachers to students and 2) collection of student-level transcript information.

**Sustainability**

As previously described, ISBE and other state education partners have committed significant resources toward development of a state education data system and intend to continue to do so to provide for the ongoing maintenance, quality control, and user maintenance of the ILDS Project. Several components of the ILDS Project will be completed at the conclusion of the grant period and can be maintained, updated, and enhanced through existing personnel and resources. The enterprise-wide data architecture will be developed during the first year of the grant period and will be updated and refined, as necessary, by ISBE staff. Development of the data warehouse will be completed within the grant period. Following the conclusion of the grant period, the in-kind commitment of ISBE staff provided to implement the ILDS Project will be used to assist with its ongoing maintenance, quality control, upgrades, and expansion.

Other aspects of the ILDS Project will require an ongoing state budgetary commitment beyond the grant period. As described in the *Project Personnel and Resources* section, ISBE intends to hire new staff for the data steward and data programmer positions, and the continued employment of these staff will be critical to ongoing maintenance, quality control, and user interface for the ILDS Project. As employees of ISBE (as opposed to contractual workers), it is intended that the salaries of these individuals will be funded through the ISBE general revenue funds allocation for personnel at the conclusion of the grant period. ISBE intends to seek a state budget allocation sufficient to fund these additional employees.

**E. Project Management Plan**

*Project Management Office*

The ILDS Project will be managed through a Project Management Office jointly administered by project sponsors Dr. Connie Wise, the Assistant Superintendent for Standards and Assessments,
and Terry Chamberlain, division administrator of the ISBE Data Systems Division. (See the Project Personnel and Resources section of this narrative.) The Project Management Office will also include the contractual project manager, who will be supervised by the project sponsors and be responsible for overseeing implementation of all components of the ILDS Project. The Project Management Office will be responsible for:

- Overseeing and directing the activities of external contractors.
- Overseeing and approving all project activities.
- Maintaining a master ILDS Project schedule.
- Coordinating with ISBE staff and external contractors to ensure the project remains on schedule and within budget.
- Scheduling regular internal ISBE meetings and providing minutes, task assignments, and schedule updates following these meetings.
- Framing project issues for discussion and input by the State Education Data Advisory Group to ensure external collaboration and feedback on project implementation.

Internal Coordination and Management Controls

The Project Management Office will be accountable to the State Superintendent of Education and the State Board of Education for ensuring the project is completed on time and within scope and budget. Susan Morrison, Special Assistant to the Superintendent, will serve as a liaison between the Project Management Office and the State Superintendent and State Board to ensure that agency leadership provides general oversight and, when necessary, direction or approvals for major project activities. Dr. Wise will be responsible for reporting on the progress of the ILDS Project at biweekly ISBE senior staff meetings, which are attended by the State Superintendent and other ISBE leadership team members.

Through ISBE procurement and hiring procedures, a variety of management controls will ensure accountability and transparency for all major project activities. Before issuing any request for proposals or contractual award, the Project Management Office will be required to present the request to and receive approval from the ISBE Expenditure Review Committee, which consists of management staff from the ISBE Fiscal, Legal, Procurement, and Internal Audit divisions. Any request for proposals or contractual award exceeding $1 million must also receive approval by the State Board. Therefore, the State Board will have direct involvement and oversight of the data warehouse project component, as the request for proposals and contractual award for the data warehouse contractor will exceed $1 million.

Similarly, ISBE hiring processes will ensure that the best qualified candidates are hired for the data steward and data programmer positions. The Project Management Office will be responsible for creating position descriptions for these positions and will participate in the interview process for qualified applicants.

The contractual project manager will be tasked with undertaking project evaluation activities and preparing bimonthly reports on ILDS Project implementation to the State Superintendent, State Board, and members of the State Education Data Advisory Group. These reports will include:

a) a detailed description of the progress of all ILDS Project components, including a critical path
Project Narrative

chart illustrating the progress made; b) a statement of significant project issues that remain unresolved and project manager recommendations; c) an updated report on whether the project remains on schedule and budget, and actions being taken to correct schedule delays and budget overruns; and d) a summary of any significant project events that are scheduled to occur during the upcoming 60-day period.

Project management responsibilities for the activities needed to accomplish each project task and the timelines for those activities are described in the Timeline section of this application.

F. Project Personnel and Resources

ISBE Staff

Dr. Connie Wise, Assistant Superintendent for Standards and Assessment, and Terry Chamberlain, division administrator of the ISBE Data Systems Division, will provide administrative oversight as project sponsors, jointly overseeing the Project Management Office and supervising the contractual project manager. Both have been responsible for overseeing development of the ISBE SIS. Dr. Wise and Mr. Chamberlain will work closely with the project manager to guide the ILDS Project to a successful conclusion.

Susan Morrison, Special Assistant to the Superintendent, will serve as the primary liaison between the Project Management Office and the State Superintendent and State Board. Ms. Morrison will provide regular reports to the State Superintendent and State Board on the status of the ILDS Project and will ensure that all ISBE divisions provide necessary support for its implementation.

Other ISBE staff involved in the project will include:

- Scott Norton, division administrator for the ISBE Technology Support Division, will serve as the technology support specialist for the project. Mr. Norton has more than 15 years of data processing experience. Mr. Norton will assist with any equipment or capacity questions.
- Wilma VanScyoc, ISBE assistant legal advisor, will provide legal support for the project in the areas of procurement, contracting, and privacy protection/access procedures.
- The two division supervisors in the ISBE Data Systems Division will serve as the ISBE data systems specialists for the project, providing technical support to the Project Management Office, the State Education Data Advisory Group, and other project staff through their expertise in data systems, specifically in the current ISBE data instruments.
- Shane Lively, ISBE Data Systems Division, will serve as the database administrator for the project, reviewing all designs for project systems, coordinating with the data warehouse contractor on database creation, and serving as the primary staff person responsible for data security issues.
- ISBE will hire four data stewards to assist with the data auditing functions described in the Project Design section of this narrative.
- Two data programmers will be hired by the ISBE Data Systems Division and be involved in all aspects of the data warehouse development and administration.
Project Narrative

All ISBE staff contributions, with the exception of the new hires, will be in-kind contributions to the ILDS Project.

Contractual Support

To implement the ILDS Project, ISBE intends to retain a contractual project manager and contractors for development of the enterprise-wide data architecture and data warehouse. These contractors will be solicited through a request for proposals process in accordance with Illinois law and ISBE standard procedures. Contractual funds will be provided to IBHE to allow for enhancements to be made to ISEG in order to develop it into a more valuable tool for research and analysis.

Project Manager

ISBE will retain a contractual, full-time project manager to oversee the implementation of all components of the ILDS Project. The request for proposals for the project manager will be issued as soon as possible after the announcement of the grant award and ISBE will seek to enter into the contract with the project manager at the earliest possible opportunity during the grant period. Under the supervision of the project sponsors, the project manager will be responsible for:

- Initiating and coordinating the project components described in this proposal.
- Providing project management oversight, monitoring the performance of all project components, and serving as the liaison to the data systems provider management and staff.
- Managing ISBE partnerships that are established to support the ILDS Project.
- Coordinating the selection of external consultants and determining the skill sets required.
- Managing vendor teams that are procured to support the build of the ILDS Project.
- Setting up the mechanisms to manage project quality, risk management, configuration management, testing, and communication for the ILDS Project.
- Maintaining continual communication with ISBE on the status of the project.

ISBE will require the project manager to have the following qualifications:

- Project management experience.
- Knowledge of team leadership principles.
- Ability to work with other organizations in order to establish a process for sharing data.
- Knowledge of data management and data conversion.
- Knowledge of programs and issues related to federal reporting requirements and student assessment processes.
- Ability to clearly communicate project status and change management issues to all levels of agency management.
- Ability to develop and maintain detailed project schedules.

Enterprise-wide Data Architecture Contractor

The following criteria will be used to select a contractor for the enterprise-wide data architecture component of the ILDS Project:
Project Narrative

- Documented experience in coordinating among state data elements, NCES definitions, and any data elements required from the U.S. Department of Education and EDEN.
- Demonstrated expertise in working with multiple organizations and units within an organization to bring disparate data definitions and business rules into one system.
- Adequate personnel and other resources necessary to complete the required activities.
- A successful track record with similar projects.

ISEG Contractor

Contractual funds will be provided to IBHE to allow for enhancements to be made to ISEG in order to develop it into a more valuable tool for research and analysis (Objective 5).

Data Warehouse Contractor

The following criteria will be used to select a contractor for the data warehouse component of the ILDS Project:

- Documented experience in design, implementation, and evaluation of data collection and analysis systems for educational entities.
- Demonstrated expertise in data warehouse applications.
- Expertise in .NET and Microsoft SQL Server.
- Experience in developing dissemination strategies for large-scale data reports.
- Knowledge of risk assessment strategies and their application to educational programs.
- Adequate personnel and other resources necessary to complete the required activities.
- A successful track record with similar projects.

Table 4. ISBE and Contractual Staff Support for the Project

<table>
<thead>
<tr>
<th>Project Position</th>
<th>Project Staff</th>
<th>Time on Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superintendent and Board Liaison (in-kind)</td>
<td>Susan Morrison (ISBE)</td>
<td>5%</td>
</tr>
<tr>
<td>Project Sponsor (in-kind)</td>
<td>Connie Wise (ISBE)</td>
<td>20%</td>
</tr>
<tr>
<td>Project Sponsor (in-kind)</td>
<td>Terry Chamberlain (ISBE)</td>
<td>20%</td>
</tr>
<tr>
<td>Technology Support Specialist (in-kind)</td>
<td>Scott Norton (ISBE)</td>
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</tr>
<tr>
<td>Legal Support (in-kind)</td>
<td>Wilma VanScyoc (ISBE)</td>
<td>5%</td>
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<tr>
<td>Data System Specialist (in-kind)</td>
<td>Warren Summers (ISBE)</td>
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<tr>
<td>Data System Specialist (in-kind)</td>
<td>John Shake (ISBE)</td>
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<td>Data Programmers (2)</td>
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<td>ILDS Project Manager</td>
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<td>ISEG Contractor</td>
<td>IBHE–contractual</td>
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<td>Data Warehouse Contractor</td>
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