I. Substantial Need for Project

1.1 Overview of Need

North Carolina (NC) must establish a robust P-20 statewide longitudinal data system (SLDS) to enable NC education leaders at the State and local levels to make outcome-based decisions regarding policies, programs, and practices that will increase student success at every point along the State education-workforce continuum.

In NC, as in many other states, for too long, decisions regarding such key State education system elements as standards, assessments, graduation requirements, and resource allocation have been made based largely on intuition, anecdote, and political considerations. Efforts to be more evidence-based have often been frustrated by the inaccessibility or lack of the kind of complete, reliable data needed to evaluate relationships between specific "inputs" and the most critical educational outcome, student achievement.

NC has made great strides over the past twenty years in increasing the collection and use of data both within and across education sectors to measure outcomes, inform decisions, and increase system accountability, but much of the data has been used only for compliance reporting purposes or specific, "siloed" operational functions. Although we have forged strong collaborative partnerships between sectors that have produced some useful insight and improvement, we have struggled to produce the deep, coherent, comprehensive analyses and associated information products needed to help our leaders "optimize" the functioning of our State education system. A major impediment has been the absence of an aligned governance and technology infrastructure that would support cross-sector, longitudinal analysis.

Establishing a comprehensive, streamlined P-20 SLDS will enable leaders at all points along the NC education-workforce continuum to access a "big picture" view and the meaningful information it can provide. As we strive to find the right formula(s) for ensuring that our State's spectrum of education services can facilitate every student's achievement of college- and/or career-readiness, we must have access to this holistic view. In the current and foreseeable State fiscal climate, however, we face extreme challenges in trying to achieve this vision. Without the IES SLDS grant funds requested in this proposal, our efforts will be severely limited, and we will be at risk of not being able to create the robust SLDS capability we need to move our State forward.

1.2 Current Status of the P-20 SLDS in NC

NC's effort to address the needs referenced above predates the American Recovery & Reinvestment Act (ARRA) of 2009. Since mid-2008, a committee composed of representatives from the NC Department of Public Instruction (NCDPI), the NC Community College System (NCCCS), the University of North Carolina General Administration (UNC), the NC Independent Colleges and Universities (NCICU), and the NC Early Childhood Data Group (NCECDG) has been meeting to explore options for building a joint data system that connects all NC education sectors. The NC Employment Security Commission (NCESC) joined the group in early 2009 to represent the workforce end of the education-workforce continuum. Individually, each sector has been working on increasing the quality and accessibility of its data (see Appendix A.1 for brief descriptions of each sector, including the scope of each sector's data-related activities). Collectively, the group has been envisioning an aligned, robust data system that would include formal, Statewide, collaborative governance, and technology infrastructure that would enhance accessibility, quality, interoperability, and use of "shared" data needed both for sector-specific and Statewide, cross-sector analyses. The group has termed this vision the NC P20+ SLDS (NC P20+), with the "P" representing various early childhood programs that work with children prior

to their entry into kindergarten, the "20" reflecting the highest achievement levels in higher education, and the "+" accounting for the variety of workforce activities that form the upper "bound" of our longitudinal continuum.

As documented in detail in Appendix C of this proposal, many elements of both NC's individual sector visions and the collective vision are either in place or in the process of being developed. Other pieces are yet to be designed and implemented. The following two subsections describe at a high level what elements are in place and what elements are missing (and are targeted for establishment with the SLDS grant funds requested in this proposal).

1.2.1 Elements of NC P20+ Already in Place

As reflected in Appendix C, NC has much existing capability to use data systems to support continuous improvement of the NC education system. In most of the NC P20+ sectors, existing data systems are adequate for meeting reporting requirements (e.g., EdFacts, Consolidated School Performance Report, and Integrated Postsecondary Education Data Systems reports) and even support some cross-sector standard and ad hoc analyses. These capabilities and relationships provide a solid base upon which to build NC P20+.

Governance: NC P20+ Steering Committee. As noted in section 1.2, all of the NC education sectors represented in this proposal have been meeting together regularly since mid-2008 to explore options for establishing an SLDS that would enable analysis of data spanning the entire educational continuum, from early childhood programs through higher education and the workforce. This workgroup has focused on what enhancements and new structures or capabilities would be required to support secure, easy, automated exchange of high quality standard, individual record-level education data that could be assembled into longitudinal data sets for use in analysis and reporting. Consistent with the workgroup's efforts, in August 2009, the NC General Assembly (NCGA) enacted as part of the State budget (see Appendix A.2: S.L. 2009-451, section 7.19) a Governor-recommended directive that these same entities collaborate to "develop a PreK-20 data system" and submit their plans to the NC Education Cabinet (Education Cabinet) by January 2010. Since the committee was already forming early plans to submit a proposal for SLDS grant funds, this mandate did not pose any new challenges, but the legislation did inject a greater sense of urgency and focus into committee meetings. In September 2009, the Education Cabinet officially endorsed this committee as the "NC P20+ Steering Committee" and sanctioned the group's effort to prepare this SLDS grant proposal. The Education Cabinet also gave advance approval for the NC P20+ Steering Committee to both serve as the project steering committee (see section 4.2) and later, to transform into a standing governing body once NC P20+ reaches "steady state" operations. This strong State commitment to clear, formal governance of NC P20+ demonstrates that the State's senior leadership understands that NC P20+ is not a "technology initiative," but rather is a "governance and strategic planning initiative that happens to harness technology to achieve its aims." This clarity of leadership vision is the key to any SLDS ultimately being successful.

Sector Source Data Collection Systems. All of the participating sectors except NCECDG and NCICU have centralized source data systems that enable them to meet basic reporting requirements. These two sectors manage through other, distributed data systems to meet their reporting requirements. NCCCS and UNC have centralized State data repositories, and NCDPI is in the process of establishing a P13 SLDS (the Institute of Education Sciences SLDS cohort 2-funded CEDARS project). Appendix A.1 contains descriptions of each sector's data-related activities.

Common Infrastructure: Unique Identifier and Data Exchange. NC does not currently have a common Statewide student identifier, other than Social Security Number (SSN), that is used by each education sector to uniquely identify students as they cross sectors. NC P20+ recognizes that a unique, Statewide identifier to be used for education research and evaluation purposes only (ie, not an SSN) is essential for operating an SLDS. Since the CEDARS project has established a unique Statewide identifier (UID) system as part of the P13 SLDS, however, NC does have an existing capability to assign and maintain a common UID across the education-workforce continuum. The NC P20+ Steering Committee has committed to adopting the P13 UID as the common identifier to be used, at least collaterally (ie, not as a replacement for, but in addition to any existing sector-specific ID) by each NC P20+ sector. This approach is consistent with specific recommendations that NCECDG developed through a USED planning grant for providing unified student identification in NC's early childhood service environment. Thus, NC P20+ proposes to leverage several prior U.S. Department of Education (USED) and NC investments in order to establish a P20+ UID.

Similarly, while NC does not have an existing shared P20+ data exchange infrastructure, the CEDARS project has established a source data system exchange mechanism in the P13 SLDS that can serve as a model for the NC P20+ data exchange. NC P20+ intends to leverage knowledge gained through the CEDARS project in order to minimize effort required to establish a like service for NC P20+ (see section 2.3.2).

Information for Decision Makers/Stakeholders. All of the NC P20+ sectors are committed to improving student learning and to collecting the data needed to establish which policies and practices are effective; that is, to enable true evidence-based decision-making. Most of the sectors currently produce information products (e.g., School Report Cards) for their direct clients and the public that are built on sector-specific data.

The NC P20+ sectors also have a long history of cooperating to use cross-sector data to assess student achievement, evaluate policies and practices, and inform decision making. For example, close working relationships between the NCECDG entities and DPI help both entities refine programs to promote school readiness and smooth transition from early childhood programs to kindergarten; NCCCS and UNC provide extensive performance feedback to high schools regarding how their graduates have performed in college; UNC provides similar feedback to all NC community colleges regarding their students who later attend State universities; and UNC, NCCCS, and NCICU work with NCESC through the Common Follow-up System (CFS; see Appendix A.1) to relate educational experience to workforce participation and performance. One example of rigorous action-oriented research using cross-sector data is UNC and NCDPI's recent collaboration on a study of teacher quality that tracks the impact on student learning at the elementary, middle, and secondary school levels of teachers trained by the different UNC colleges of education. UNC is already using the results of this study to guide modifications to the teacher preparation programs operating on its various campuses.

1.2.2 Elements of NC P20+ Missing (Targeted for Completion with Grant Funds)

As reflected in Appendix C and in the explanations in section 1.2.1 of what is already in place, NC does have some significant gaps in its P20+ data system landscape. While existing sector data systems are in most cases adequate for meeting reporting requirements and supporting selected cross-sector standard and ad hoc analyses, the quality of the data contained in the source data systems is in some cases problematic and the inaccessibility and/or incompatibility of the data often inhibits richer, more efficient cross-sector analysis. NC P20+ must therefore elevate both data accessibility and quality across the sectors to make meaningful analysis more feasible and ensure that NC may draw reliable and valid conclusions from NC P20+ data.

Governance: NC P20+ Steering Committee. The NC P20+ Steering Committee has much work to do to formalize the governance function it was created to perform. As reflected in tables 2.2 and 3.1, there are a number of key start-up tasks that will be high priorities and will be essential for moving the overall project forward. These tasks include establishing formal inter-sector agreements, creating a committee process and sub-committee structure, and engaging all relevant stakeholders, including the Education Cabinet, to inform the detailed design plans for NC P20+. Institutionalizing such practices as master data management and transparent, coordinated decision-making regarding the NC P20+ data set and operational policies (e.g., regarding access and security) will be essential to ensure that NC P20+ is more than just hardware and software.

Sector Source Data Collection Systems. As noted in section 1.2.1, NCECDG and NCICU do not have centralized source data collection systems. These two entities must establish this capability while the other sectors must refine their existing data systems. NCDPI, which in a separate, but related project will complete the initial implementation of the CEDARS P13 SLDS by October 2009, must improve the quality of P13 data (and reduce local school district data entry burden) by adding point-of-entry data validation controls and integrating its numerous source data collection systems. NCCCS, UNC, and ESC must modernize their collection and storage technologies to facilitate data linkage, quality, and accessibility.

Common Infrastructure: Unique Identifier and Data Exchange. As noted in section 1.2.1, the NC P20+ Steering Committee has committed to adopting the P13 UID as the common identifier to be used, at least collaterally (ie, not as a replacement for, but in addition to any existing sector-specific ID) by each NC P20+ sector. To implement this approach, each sector must establish business practices for obtaining the UID for its students and must modify its source data systems, as needed, to store the UID in student records. In addition, the State UID system software may require some enhancements to facilitate its effective and efficient use by all sector partners.

Leveraging the knowledge gained in establishing the data exchange mechanism that is part of CEDARS, NC P20+ must develop an inter-sector data exchange infrastructure. In addition, NC P20+ must implement consensus data standards, such as the School Interoperability Framework Association (SIFA), National Education Data Model (NEDM), and Postsecondary Electronic Standards Council (PESC) data standards, for use in the cross-sector data exchange.

Information for Decision Makers/Stakeholders. To make meaningful analysis and production of rich, useful information products more feasible, reliable, and valid, NC P20+ must first improve both data accessibility and quality across the sectors. At the same time, the NC P20+ Steering Committee must engage stakeholders early and often to determine what information products are most valuable and ensure that NC P20+ is designed to support their creation and use. This means clarifying the questions that the system needs to be prepared to answer and ensuring that the required data is included in NC P20+. The Steering Committee must also assess various data consumers' capabilities to use different types of information products or artifacts, and coordinate with other State initiatives, such as Race to the Top (RTTT), that are working to increase education leaders' capability to conduct data-driven decision making that fosters continuous system improvement and, ultimately, increased student achievement.

Since NC does not have a central State research or analysis agency or function, current creation of useful information products is distributed, incomplete, and not necessarily coordinated. The NC P20+ Steering Committee must assume responsibility for ensuring that State leaders have access to the data and information products they need. One challenge will be figuring out the extent to which existing sector staff, including numerous world-class researchers, and other partners can be called upon to conduct the needed analyses, drawing on enhanced data created

through NC P20+ initiatives. A subsequent challenge will be determining the most efficient and effective way to coordinate this distributed activity through NC P20+ to ensure that collectively, the member sectors and/or other partners can produce the information products of highest value to the State. In many ways, addressing this challenge is the most daunting and most exciting aspect of the NC P20+ initiative. The NC P20+ partners understand very clearly that an SLDS is only as valuable as its governance is collaborative, and as its data is used by targeted stakeholders. Simply creating new, user-friendly views of or interfaces with data will not necessarily be a high value-add innovation. NC P20+ must take great pains to ensure that it supplies not only new capability, but capability that enables decision-makers to do things they could not do before to improve student outcomes.

1.3 Using NC P20+ to Support NC's Efforts to Improve Student Achievement

By increasing data accessibility and quality within each sector, NC P20+ will enhance each sector's capability to accurately assess and document the achievement of its students and the continuous improvement of the services it provides to them. NC P20+ will also enhance each sector's capability to answer programmatic, policy, and legislative questions about the efficacy and cost-effectiveness of various targeted sector-specific investments. Finally, by enabling better exploration of questions related to the movement of students between the State's education sectors, NC P20+ will provide more comprehensive information for assessment, evaluation, and continuous improvement purposes than the current stand-alone data systems operated in each individual sector are able to provide. This cross sector-analysis is perhaps the most promising NC P20+ innovation.

Opportunities for cross-sector analysis that will support NC's efforts to improve services to students at various points along the education-workforce continuum abound. Several examples already targeted for exploration include:

- Assessing the associations between various types of teacher preparation programs and student achievement, and using that information to improve those preparation programs

- Evaluating the relationships between P13 course-taking patterns and student performance in higher education, and using that information to adjust P13 standards, curricula, and graduation requirements

- Exploring the relationships between various early care and education services and student performance in kindergarten and beyond, and using that information to inform investments in early care and education services, and curricula and practice through grade three

- Relating P13 course taking patterns, degree or certification attainment, and workforce experience, and using that information to adjust and inform investments in various curricula, degree and certification programs.

The State's enhanced capability for cross-sector analysis will also create new opportunities to access funding for research and development initiatives. For example, data generated through NC P20+ will be used in the recently funded National Personnel Development Center grant and future Early Learning Challenge grant efforts.

II. Project Goals, Measurable Outcomes, and High-Level Implementation Plan

2.1 Project Goals

NC P20+ is designed to address the needs outlined in Section I by addressing five core goals, around which the project's 16 measurable outcomes are organized. The five goals are as follows:

> **Goal 1: Institutionalizing Rigorous Governance**
>
> **Goal 2: Implementing a Statewide P20+ Unique Student Identifier (UID)**
>
> **Goal 3: Building a Comprehensive P20+ Data Exchange**
>
> **Goal 4: Ensuring High Data Quality in Each Sector and in the Exchange**
>
> **Goal 5: Building Capacity for Stakeholders to Access and Use Data**

The following paragraphs provide detail regarding each goal and explain briefly how each goal addresses the substantial needs identified in Section I of this proposal.

Goal 1: Institutionalizing Rigorous Governance

NC will establish a formal SLDS governance structure with agreements between the six sectors to ensure that P20+ data can be exchanged, analyzed, and used by each participating sector for the purposes of evaluation and continuous improvement.

How Goal 1 meets urgent NC needs. While representatives from each sector have been meeting since mid-2008 to discuss building a statewide P20+ SLDS, a formal partnership supported through memoranda of understanding is required to move this effort forward. NC P20+ will use SLDS grant funds to provide the support, focus, and momentum needed to craft agreements, obtain a formal implementation charge from the NC Education Cabinet, and institutionalize a governance structure for ongoing operation of NC P20+.

Goal 2: Implementing a Statewide P20+ Unique Student Identifier (UID)

All NC P20+ sectors will modify their data systems as needed to store NC's P20+UID in relevant data files to ensure that data moving across sectors can be reliably linked, analyzed, and used for the purpose of evaluation and continuous improvement.

How Goal 2 meets urgent NC needs. The NC P20+ Steering Committee has agreed to adopt the P13 UID as the Statewide P20+ UID. In order to implement this approach, each sector must enable their institutional data system(s) to accommodate the UID. Each sector (other than NCDPI) is at a different stage of readiness to make these accommodations, but all sectors (other than NCDPI) must complete this work. NC P20+ will use SLDS grant funds to provide the support, focus, and momentum required to leverage existing IES and State investments in the P13 UID to complete full Statewide adoption. This effort is a cornerstone to establishing a P20+ SLDS.

Goal 3: Building a Comprehensive P20+ Data Exchange

NC P20+ will develop the infrastructure necessary to enable the exchange of linkable, interoperable student, employee, and other related longitudinal education data electronically across P20+ sectors for the purpose of examining the relationships between inputs and educational outcomes, including student progress over time and student readiness to meet the demands of postsecondary education, the workforce, and the Armed Forces.

How Goal 3 meets urgent NC needs. NC education sectors are awash in data and are eager to share it with each other, but lack a streamlined mechanism for easily doing so. The NC P20+ data exchange infrastructure will not only supply this capability, it will ensure that the exchange is guided by standards that enforce consistency of definitions and thereby promote reliable, valid data use. NC P20+ will use SLDS grant funds to provide the support, focus, and momentum needed to facilitate the establishment of the data exchange infrastructure, including both shared technology and business practices and enhancements to each sector's technology and business practices that will make interoperable exchange possible. This infrastructure, in turn, will enable the cross-sector analysis that is the core justification for a P20+ SLDS.

Goal 4: Ensuring Data Quality in Each Sector and in the Exchange
NC P20+ will ensure the quality of data contained in the P20+ data exchange by enhancing each sector's data collection systems, requiring that each sector has data quality assurance policies and practices in place, and auditing the data files that each sector contributes to the data exchange to ensure compliance with standard definitions, accuracy, and validity.

How Goal 4 meets urgent NC needs. The usefulness of NC P20+ depends on the quality (and therefore, trustworthiness) of the data it contains. Since the exchange data is simply a product of data feeds from source data collection systems in each sector, NC P20+ must focus primarily on ensuring the quality of the data in each sector's source systems. In addition, NC P20+ must ensure that the exchange is governed by business practices that maintain the quality of data once contributed to the exchange. NC P20+ will use SLDS grant funds to implement a cross-sector data quality audit and to ensure that data quality policies and procedures are formally established both in each sector and for the exchange.

Goal 5: Building Capacity for Stakeholders to Access and Use Data
NC P20+ will ensure that the executive and legislative branches of government, as well as designated staff in each sector, have the capability to use the P20+ longitudinal data for effective and efficient federal and state reporting, for analysis that promotes effective decision-making and continuous improvement of policies and practices, and for reporting to school districts, parents, and the public regarding key education indicators.

How Goal 5 meets urgent NC needs. NC's senior leadership (Governor, Education Cabinet, General Assembly) and its educational sector leadership must have access to quality, longitudinal data upon which to base outcome-focused data-driven decisions. Establishing the infrastructure needed to make this data available is necessary, but not sufficient to enable leadership to use the data. NC P20+ must promote effective outcome-based analysis of policies and practices by ensuring that relevant stakeholders are engaged in the design of the new information products that can be produced through an SLDS. NC P20+ will use SLDS funds to engage these stakeholders and subsequently, ensure that NC P20+ will produce the types of information products that will enable the stakeholders to make better informed decisions and ultimately, work toward optimizing the performance of the NC education system.

2.2 Project Measurable Outcomes
Collectively, the NC P20+ project's 16 measurable outcomes address each of the seven required SLDS capabilities and twelve data elements, as outlined in the SLDS Program Announcement. The specific capabilities and elements met are broken down by outcome in Table 2.2.

Table 2.2 Relationship of Project Outcomes to Mandatory Capabilities and Elements (See Appendix C, Tables 1 and 2)	
Goal 1: Institutionalizing Rigorous Governance. NC will establish a formal SLDS governance structure with agreements between the six sectors to ensure that P20+ data can be exchanged, analyzed, and used by each participating sector for the purposes of evaluation and continuous improvement.	
Outcomes:	**Capabilities & Elements:**
1.1 A Steering Committee, to be charged with governing NC P20+, will meet on a monthly to quarterly basis during and after the grant award to oversee the successful implementation of NC's first comprehensive P20+ SLDS.	Data Capability: 1
1.2 Each sector will commit to a Memorandum of Understanding (MOU) reflecting the policy and procedures developed by the NC P20+ Steering Committee to include, at minimum, the determination of common privacy and security standards, the specification of data elements and files, the adoption and consumption of NC's Statewide Unique Student Identifier (UID), the development of a common schedule for making specified data elements available, and other governance issues arising during the establishment of the SLDS.	Data Capability: 1
1.3 An NC P20+ data set will be determined and maintained during and after the grant award.	Data Capability: 1 Data Element: 2, 3, 6, 7, 9, 10, 11
1.4 NC P20+ data standards (e.g., SIFA, NEDM, PESC) will be established and maintained during and after the grant award.	Data Capability: 1 Data Element: 2, 3
1.5 An NC P20+ enterprise data dictionary will be established and maintained during and after the grant award.	Data Capability: 1 Data Element: 2, 3
Goal 2: Implementing a Statewide P20+ Unique Student Identifier (UID). All NC P20+ sectors will modify their data systems as needed to store NC's P20+ UID in relevant data files to ensure that data moving across sectors can be reliably linked, analyzed, and used for the purpose of evaluation and continuous improvement.	
Outcomes:	**Capabilities & Elements:**
2.1 A policy requiring each sector to implement the NC P20+ UID will be enacted.	Data Capability: 3, 4 Data Element:1, 8
2.2 Enhancements necessary to the Statewide UID System to enable all sectors to implement the P20+ UID will be completed.	Data Capability: 2, 4 Data Element: 1
2.3 Sector data systems will be modified as needed to enable them to associate the P20+ UID with their student/employee record level data.	Data Capability: 2, 3, 4, Data Element: 2

Table 2.2 Relationship of Project Outcomes to Mandatory Capabilities and Elements (See Appendix C, Tables 1 and 2)	
Goal 3: Building a Comprehensive P20+ Data Exchange. NC P20+ will develop the infrastructure necessary to enable the exchange of linkable, interoperable student, employee, and other related longitudinal education data electronically across P20+ sectors for the purpose of examining the relationships between inputs and educational outcomes, including student progress over time and students' preparation to meet the demands of postsecondary education, the workforce, and the Armed Forces.	
Outcomes:	**Capabilities & Elements:**
3.1 A mechanism will be established through which data will be exchanged across NC P20+ sectors.	Data Capability: 2 Data Element: 4
3.2 Mechanisms will be established through which each sector will contribute specified data that conforms to consensus data standards (such as SIFA, NEDM, and PESC) to the NC P20+ data exchange.	Data Capability: 2 Data Element: 4
Goal 4: Ensuring High Quality Data in Each Sector and in the Exchange. NC P20+ will ensure the quality of data contained in the NC P20+ data exchange by enhancing each sector's data collections, requiring that each sector has data quality assurance policies and practices in place, and auditing the education sectors' data files included in the data exchange to ensure compliance with standard definitions, accuracy, and validity.	
Outcomes:	**Capabilities & Elements:**
4.1 Sector source data collection systems and infrastructure will be established and/or enhanced to ensure the quality of data collected.	Data Capability: 6 Data Element: 5
4.2 Data quality assurance policies and procedures for each sector and the NC P20+ data exchange will be established and/or enhanced.	Data Capability: 6 Data Element: 5
4.3 The initial data set contributed to the NC P20+ data exchange will be audited.	Data Capability: 6 Data Element: 5
Goal 5: Building Capacity for Range of Stakeholders to Access and Use Data. NC P20+ will ensure that the executive and legislative branches of government, as well as designated staff in each sector, have the capability to use high quality P20+ longitudinal data for effective and efficient federal and state reporting, for analysis that promotes effective decision-making and continuous improvement of policies and practices, and for reporting to schools, parents, and the public regarding key education indicators.	
Outcomes:	**Capabilities & Elements:**
5.1 Benchmark education indicators will be identified that address Education Cabinet priorities.	Data Capability: 7 Data Element: 12
5.2 A process will be established for collecting ongoing input from stakeholders regarding information needs that the NC P20+ data exchange should address.	Data Capability: 5, 7 Data Element: 12
5.3 A process will be established for producing and publishing information artifacts (e.g., reports) that respond to the identified stakeholder needs.	Data Capability: 5, 7 Data Element: 12

2.3 High-Level Project Implementation Plan

The core development initiatives of NC P20+ break down into two major categories: 1) sector-specific enhancements aimed at increasing data quality and 2) the creation of shared infrastructure. The following two subsections describe the work involved in each category.

2.3.1 Sector-Specific Enhancements to Increase Data Quality

The sector-specific work involves enhancing and or creating source data collection systems in the sectors so that each sector will be able to contribute high quality data to NC P20+. As referenced in the proposal budget narrative (see Budget Narrative document), this work entails different activities in each sector. The range of work includes modifying existing source systems to have better automated point-of-entry controls, migrating source systems from older, less flexible technologies to newer, more flexible ones, and establishing central data collection systems to better organize and modernize variable, distributed data collection. Enhancements might also include addition of other (i.e., in addition to UID) common data fields, such as those relating to program quality, student outcomes, and staff qualifications, to synchronize collections both within and across sectors.

2.3.2 Shared Infrastructure

The shared infrastructure work centers on the establishment of the NC Education Data Hub (Data Hub; see Figure 2.3.2), a data exchange system through which the participating sectors, the State, and other interested stakeholders can take advantage of authorized role-based access to obtain various linkable, interoperable, high quality standard education data sets containing information on individuals from early childhood through the workforce. The infrastructure for the Data Hub will enable each authorized sector to acquire and assemble the data needed to complete required reports, answer key questions, and conduct longitudinal analysis aimed at producing efficiency, effectiveness, and continuous educational improvement. NC P20+ will utilize the Data Hub to facilitate the exchange of data for the educational research and analysis purposes deemed critical for the State.
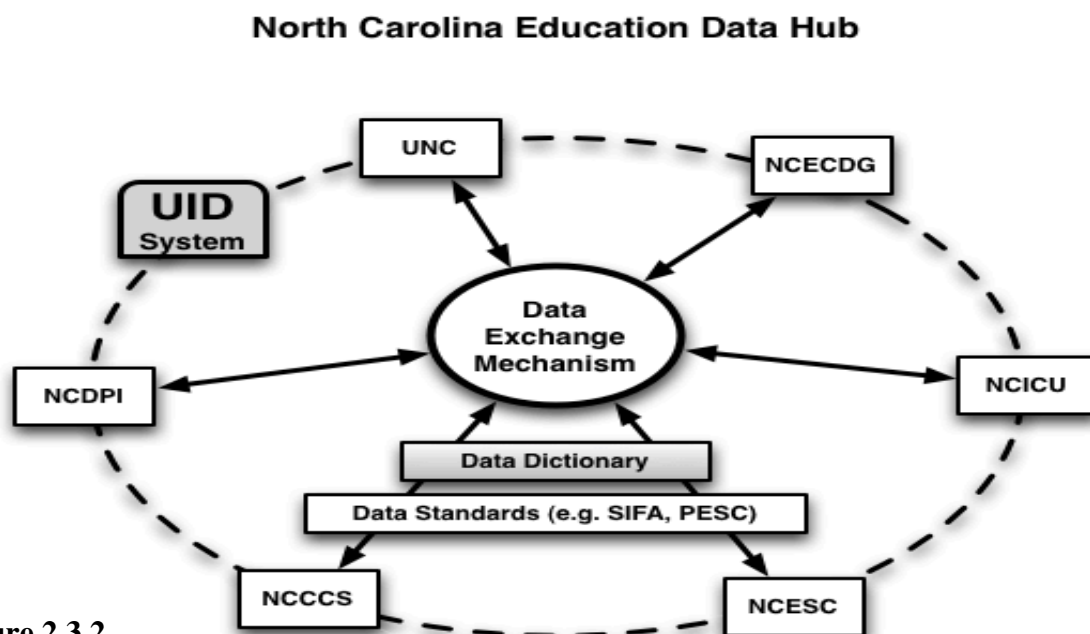

Figure 2.3.2

Data Hub Governance

The NC P20+ Steering Committee (and later, the NC P20+ Governing Council) will manage the Data Hub, set standards for the included data sets, establish policy and procedures for access and use of the data sets, and ensure that the data available through the Data Hub meets the informational needs of participating sectors and the State. The NC P20+ Governing Council will also be responsible for administering the day-to-day operations of the Data Hub (see section 4.3).

Data Hub Technology

The Data Hub will utilize several key technology components to enable the flow of specified, linkable, interoperable data from each sector into the Data Hub and out to authorized data consumers from participating sectors. The subsections below explain the contribution of each technology component.

Source Data Collection Systems. Each sector will contribute identified data from its source data collection and storage systems to the Data Hub. These source systems therefore must be capable of providing required high quality data in files that meet Data Hub file specifications. Files containing individual student or employee records will contain as part of that record the student or employee UID, as assigned by the Statewide UID system. The source data systems within each sector will, at a minimum, have the capacity to store UIDs generated from the Statewide system. NC P20+ will use SLDS grant funds to enhance sector source data systems, as needed, to ensure that this capacity is present.

Statewide Unique Identifier (UID) System. Each sector participating in NC P20+ will utilize the Statewide UID System to obtain and/or associate UIDs with the students about whom the sector collects and stores data. The UID System, powered by *eScholar's Uniq-ID* product, has been established through the NC CEDARS project and is currently used by the NCDPI to establish UIDs for both students and employees participating in the P13 programs that operate under the authority of the State Board of Education. Other participating sectors in North Carolina will interact with the UID System via its standard web interfaces, uploading student information and retrieving UIDs for association with those students.

Sectors will determine the extent to which interaction with the UID System is automated, however the most basic method of interaction with the system (web-based file upload/download and match resolution) should not require additional technology investments. In this context, the Data Hub will leverage prior IES and NC investments in the existing UID System. Because the current UID System has been designed for use primarily by the P13 education sector, the System may require some enhancements to facilitate use by the other sectors. NC P20+ proposes to use SLDS grant funds to identify and complete these enhancements.

Data Translation Mechanisms. Sectors participating in NC P20+ will not be required to change underlying source data collection structures, however they will be required to contribute data elements to the Data Hub that meet standard data definitions and formats. In order to accommodate the translation between disparate sector data structures, and collection and storage technologies, each sector will utilize translation mechanisms that will: 1) extract data from source systems, 2) transform the data into standard data structures and formats, and 3) present the data to the Data Hub for interoperable exchange. NC P20+ proposes to use SLDS grant funds to implement the translation mechanisms within each participating sector. This implementation may involve, depending on the sector, substantial investments in both software and hardware.

Data Exchange Mechanism. Each sector will make data available to the Data Hub in accordance with a consensus NC P20+ data calendar. The Data Hub's Data Exchange Mechanism will utilize standard transport mechanisms to move the data, upon request, across the Data Hub to approved data consumers. This model of data sharing is flexible, enabling easy expansion to incorporate additional source entities (i.e., additional sectors, such as State Social Service or Juvenile Justice agencies) and data consumers. NC P20+ proposes to use SLDS funds to implement this data exchange mechanism. This implementation will require investment in both software and hardware, however similar existing efforts (e.g., as part of the CEDARS project) and State contracts for middleware may enable NC P20+ to leverage prior federal and State investments and limit additional costs and technology development.

Data Dictionary. To facilitate consistent use of data contained in the Data Hub, NC P20+ will establish and maintain a data dictionary that will document essential information, including metadata, about each Hub data element. This dictionary will be accessible to all NC P20+ member sectors and authorized data consumers. NC P20+ proposes to use SLDS grant funds to establish the Data Hub data dictionary.

III. Timeline for Achieving Project Outcomes

3.1 Achievement of Project Outcomes.

As described in Section 2.1, the project's 16 measurable outcomes each contribute to the achievement of one of five core project goals. Table 3.1 lists each goal, its associated outcomes, and the subordinate subtasks related to each outcome. Table 3.1 also lists a tentative start and completion date for each subtask and the party or parties primarily responsible for accomplishing it. Each outcome has its own discrete budget (see Budget Narrative document), within which the subtasks necessary to achieve the outcome have been carefully identified and delineated.

3.2 Alignment of NC P20+ with other SLDS and ARRA Activities

This NC P20+ proposal has been developed collaterally with NC's ongoing CEDARS effort, Race to the Top (RTTT) proposal development, and State Fiscal Stabilization Fund (SFSF) Phase II planning. Several members of the NC P20+ Steering Committee have also been working on these other efforts. Proposed NC P20+ Project Director, Adam Levinson (see section 4.1), is involved in a leadership role in all four projects. This interweaving of development activities will ensure the alignment of the respective plans.

While the greater challenge to maintaining alignment will likely come during implementation, several clear connections between the various planning efforts can be noted at present:

- CEDARS will be a source of high quality, linked P13 data that will supply both ARRA reporting (including much of the SFSF Phase II elements) and the NC P20+ data exchange. As has been noted in various places in this proposal, the P13 UID implemented as part of CEDARS will become the P20+ UID.

- The RTTT proposal will include initiatives to enhance public education leadership's capacity to conduct data-driven decision-making regarding policy and practices, using longitudinal data both within and across sectors. In planning discussions relative to NC's longitudinal data system capability, RTTT and NC P20+ project leadership have clarified that the NC P20+ proposal will focus on developing governance and technology infrastructure, while RTTT will focus on increasing the capacity Statewide to use that infrastructure to drive continuous improvement.

- The RTTT and NC P20+ leadership had also clarified, prior to the release of final RTTT guidelines, that RTTT would address the needs for instructional technology designed to assist instructional staff on a daily basis (ie, operational infrastructure), while NC P20+ would address the needs for infrastructure that would support reflective, longitudinal analysis (ie, strategic planning infrastructure).

Table 3.1: Plan for Achieving Project Outcomes, Organized by Project Goal
(Please refer back to Table 2.1 for Descriptions of 16 Measurable Outcomes)

Goal 1: Institutionalizing Rigorous Governance

Outcome	Subtasks	Start/Completion	Personnel/Sector
1.1	Convene NC P-20+ Steering Committee on a monthly to quarterly basis during and after the grant award to oversee the successful implementation of NC's first comprehensive P20+ SLDS.	July 2010—June 2013	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
1.2	Draft, review, and adopt MOU committing each sector to participation in NC P20+.	July 2010—Dec. 2010	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
1.3	Determine initial data set to be included in the NC P20+ data exchange.	Oct. 2010—Jan. 2011	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Determine modifications, as needed, to the NC P20+ data set.	Oct. 2010—June 2013	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
1.4	Determine and adopt data standards (e.g., SIFA, NEDM, PESC) for the NC P20+ data exchange.	Dec. 2010—June 2013	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
1.5	Gather and document requirements for the NC P20+ enterprise data dictionary.	Feb. 2011—Dec. 2011	NC P20+ PMO
	Determine best option and procure NC P20+ data dictionary solution.	Aug. 2011—Nov. 2011	NC P20+ PMO
	Implement a NC P20+ enterprise data dictionary.	Dec. 2011—June 2013	NC P20+ PMO

Goal 2: Implementing a Statewide P20+ Unique Student Identifier (UID)

Outcome	Subtasks	Start/Completion	Personnel/Sector
2.1	Draft and formally adopt Statewide UID policy through the NC P20+ Steering Committee.	July 2010—Aug. 2010	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU

	Table 3.1: Plan for Achieving Project Outcomes, Organized by Project Goal (Please refer back to Table 2.1 for Descriptions of 16 Measurable Outcomes)		
2.2	Demonstrate existing UID System capability, share technical specifications with all sectors, and conduct gap analysis to identify needs for each sector to effectively implement the UID.	July 2010—Sept. 2010	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Develop specific requirements for the Statewide UID system enhancements.	Sept. 2010—Oct. 2010	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Contract with UID software vendor to complete enhancements, as needed, to the Statewide UID system.	Oct. 2010—Nov. 2010	NC P20+ PMO, DPI
	Complete and implement enhancements to the Statewide UID system.	Nov 2010—Feb. 2010	NC P20+ PMO, DPI
2.3	Identify and implement data system changes needed to store the Statewide P20+ UID in each sector's student records.	Aug. 2010—Dec. 2010	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
2.3	Identify and implement sector data system modifications and/or acquisitions needed to integrate with the Statewide UID System.	Aug. 2010—June 2011	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
Goal 3: Building a Comprehensive P20+ Data Exchange.			
Outcome	**Subtasks**	**Start/Completion**	**Personnel/Sector**
3.1	Gather and document requirements for exchanging P20+ data across sectors.	Aug. 2010—Dec. 2010	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Determine and procure best option for NC P20+ data exchange mechanism, based on documented requirements.	Jan. 2011—June 2011	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Implement the NC P20+ data exchange mechanism.	July 2011—June 2012	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU

Table 3.1: Plan for Achieving Project Outcomes, Organized by Project Goal (Please refer back to Table 2.1 for Descriptions of 16 Measurable Outcomes)			
3.2	Gather/document requirements for each sector to comply with data standards (e.g., SIF and PESC) for data exchange, as specified by NC P20+ Steering Committee.	July 2011—June 2012	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Implement sector data system enhancements or acquisitions required for compliance with agreed upon data standards.	July 2012—June 2013	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
Goal 4: Ensuring High Quality Data in Each Sector and in the Exchange			
Outcome	**Subtasks**	**Start/Completion**	**Personnel/Sector**
4.1	Document requirements for source data system enhancements or acquisitions that will enable each sector to ensure quality of data collections.	Oct. 2010—April 2011	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Determine and procure best option(s), based on documented requirements, for source data system enhancements or acquisitions that will enable each sector to ensure quality of data collections.	May 2011—Jan. 2012	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Implement source data system enhancements or acquisitions that will enable each sector to ensure quality of data collections.	Feb. 2011—June 2013	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
4.2	Document data quality assurance policies and procedures for each sector and for the NC P20+ exchange.	Nov. 2010—June 2013	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
4.3	Determine and procure best option for auditing quality of initial NC P20+ data set.	Jan. 2011—June 2011	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
	Implement a data audit of each sector's institutional data to be included in the NC P20+.data exchange.	July 2011—June 2012	DPI, NCCCS, UNC, NCECDG, NCESC, NCICU

|	Table 3.1: Plan for Achieving Project Outcomes, Organized by Project Goal (Please refer back to Table 2.1 for Descriptions of 16 Measurable Outcomes)		
Goal 5: Building Capacity for Stakeholders to Access and Use Data			
Outcome	**Subtasks**	**Start/Completion**	**Personnel/Sector**
5.1	Gather requirements from Education Cabinet regarding priority indicators of State education system health.	July 2010—Dec. 2010	NC P20+ PMO, DPI, NCCCS, UNC, NCECDG, NCESC, NCICU
5.2	Document initial requirements regarding information products (ie, views, formats, level of interactivity) desired by the Education Cabinet, NC P20+ sectors, and other stakeholders (ie, General Assembly) for use in required reporting and data-driven decision-making.	Jan. 2011—June 2011	NC P20+ PMO
	Establish process to review periodically and modify as needed the documented initial requirements regarding information products (ie, views, formats, level of interactivity) desired by the Education Cabinet, NC P20+ sectors, and other stakeholders (ie, Legislature) for use in required reporting and data driven decision-making.	July 2011—Aug. 2011	NC P20+ PMO, All sectors (Project Steering Committee)
5.3	Establish plan that includes mechanisms, parties responsible, and timelines for producing information products (ie, views, formats, level of interactivity) desired by the Cabinet, NC P20+ sectors, and other stakeholders (ie, General Assembly) for use in required reporting and data-driven decision-making.	Sept. 2011—Dec. 2011	NC P20+ PMO, All sectors (Project Steering Committee)
	Produce information products (ie, views, formats, level of interactivity) desired by the Education Cabinet, NC P20+ sectors, and other stakeholders (ie, General Assembly) for use in required reporting and data-driven decision-making.	Jan. 2012—June 2013	NC P20+ PMO, All sectors (Project Steering Committee)

IV. Project Management and Governance

NC is fortunate to have many factors present that support the creation of strong, centralized, collaborative structures for the management and governance of NC P20+. First, NC has a long-standing tradition of centrally governed education sectors (public schools, UNC, NCCCS) and a history of strong collaboration within those sectors that do not have a formal central governance structure (for example, NCEDG's cross-agency data systems planning work and NCICU's joint planning and advocacy work on behalf of member institutions). As noted in section 1.2.1, the NC P20+ sectors have worked together on many joint initiatives and collaborate on a regular basis in planning and development discussions both within the Education Cabinet and through various standing and ad hoc groups. Against this backdrop, NC also has recent experience managing a complex SLDS project (CEDARS) and has an established public commitment from the highest levels of State government leadership (Governor, Education Cabinet, NCGA) to move forward ambitiously and expeditiously with the creation a P20+ SLDS. These factors give NC a solid foundation upon which to build the NC P20+ project management and governance plans.

4.1 Project Management

As noted in sections 2.1 and 3.1, to achieve the NC P20+ initiative's five central goals through attainment of 16 measurable outcomes, project efforts will focus both on enhancing each participating sector's data management infrastructure and on establishing shared Statewide infrastructure. As Lead Fiscal Agent, NCDPI will manage the overall NC P20+ project through a structure (see Figure 4.1) similar to the one it has employed for managing the CEDARS project. This approach to project management will include both direct involvement in the development of the NC P20+ shared infrastructure, and coordination of the activities carried out in each sector. Each sector co-director will be responsible for managing the sector-specific project activities through a sector project structure that mirrors the larger P20+ project structure

NC P20+ SLDS Project Management and Governance
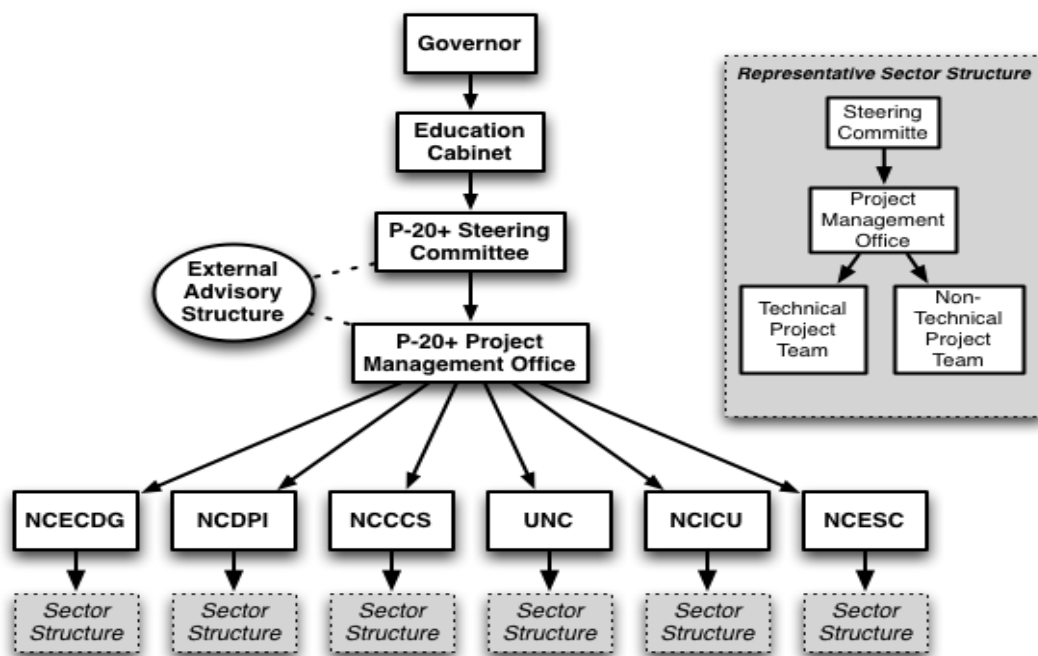
(see Fig 4.1 insert).

Figure 4.1

Project Director/NC P20+ Project Management Office (PMO). The NCDPI Director of Policy & Strategic Planning, Adam Levinson, will serve as NC P20+ Project Director and, as such, will be responsible for ensuring that all NC P20+ goals and outcomes are achieved (he will also lead the NCDPI sector-specific project). Director Levinson will create an NC P20+ Project Management Office (PMO) specific to this grant through which he will oversee the implementation of the entire initiative. A Lead Project Manager (to be hired) will manage day-to-day implementation activities, including development of shared infrastructure and monitoring of development activities by sector "sub-contractors."

Project Director Levinson's permanent NCDPI unit, the Policy & Strategic Planning (PSP) Division, is an organization that exists within the Office of the State Superintendent of Public Instruction and is charged with increasing agency effectiveness and efficiency, particularly through enhancement and refinement of enterprise-wide infrastructure. Over the past several years, PSP has managed several large, enterprise infrastructure projects, including CEDARS, agency organizational redesign, agency strategic planning and establishment of a performance management tool, and NCDPI's Accountability and Curriculum Revision Effort (ACRE). As Director of PSP, Mr. Levinson reports directly to the State Superintendent and frequently represents NC DPI in inter-sector engagements and planning discussions, and in communicating with the NC General Assembly and other external stakeholders regarding NCDPI's mission and operations. Mr. Levinson also is a member of the NC team developing the State's RTTT proposal.

Co-Directors/Sector PMOs. Each sector sub-project will be managed by a sector PMO, led by an NC P20+ Co-Director. Each sector PMO will report regularly to its own sector steering committee (see section 4.2), to Director Levinson's NC P20+ PMO, and to the NC P20+ Steering Committee (see section 4.2). Each sector will be expected to implement its activities in accordance with the goals, outcomes, subtasks, and timelines agreed upon within this proposal. Each successive level of project management will be responsible for escalating issues, questions, or problems to a level at which they can be successfully addressed.

The Co-Directors and their Chief Information Officers (CIOs) will also meet regularly as part of the P20+ Steering Committee. This coordination will both ensure ongoing sharing and partnership among the six sectors and provide Director Levinson and NCDPI with the collective support, engagement, and alignment needed to ensure the overall project's success.

4.2 Project Governance

As illustrated in Figure 4.1, the ultimate owner of the NC P20+ is the Governor of NC, who along with her Education Cabinet, has delegated responsibility for overseeing and managing the NC P20+ project to the NC P20+ Steering Committee (see section 1.2.1).

NC P20+ Steering Committee. Project Director Levinson will report to the NC P20+ Steering Committee, consisting of himself and the other five respective sector Co-Directors (see table 4.2) and their respective CIOs. Other specialists and administrators will be invited to Steering Committee meetings as needed to provide input on specific topics. The Steering Committee will provide oversight for the project on a monthly basis, and will in turn answer to the Education Cabinet.

Table 4.2: NC P20+ Steering Committee		
Sector	**Members**	**Title**
NC DPI	Mr. Adam Levinson, Project Director	Director of Policy & Strategic Planning
	Mr. Peter Asmar	Chief Information Officer
NCCCS	Dr. Saundra Williams, Project Co-Director	Senior Vice President and CIO
	Mr. Keith Brown	Associate Vice President
UNC-GA	Dr. Alisa Chapman, Project Co-Director	Associate Vice President
	Mr. John Leydon	Chief Information Officer
NCECDG	Dr. Patrice Neal, Project Co-Director	Clinical Professor in Pediatrics/Principal Investigator
	Dr. Duncan Munn	Consultant for NCECDG
ESC	Dr. Betty McGrath, Project Co-Director	Director of Labor Market Information
	Mr. Robert A. Cottrell, Jr.	Information Systems Director
NC ICU	Dr. Hope Williams, Project Co-Director	President
	Mr. Tim McDowell	Vice President

Governor's Education Cabinet. As noted in section 1.2.1, the Governor and Education Cabinet officially endorsed the Steering Committee in September 2009, both to develop the NC P20+ proposal and to manage the project on a continuing basis. The Governor and Education Cabinet will provide high-level oversight for NC P20+ on at least a quarterly basis.

The existence of the Education Cabinet (as established by NC General Statute) provides NC P20+ with an established collaborative governance framework within which to fit the NC P20+ governance activities. The NC Education Cabinet is convened and led by the Governor who is supported by an Executive Director of the Cabinet and a small Cabinet staff. The Cabinet is composed of the State Superintendent for Public Instruction, the Chair of the State Board of Education, the President of NCCCS, the President of the UNC system, the President of the NCICU, and the Secretary of Health and Human Services. NCESC is not required statutorily to participate in the Cabinet, but the agency will be included in all discussions and decisions related to NC P20+. The Education Cabinet meets on a quarterly basis and is at the call of the Governor for special meetings. Each member agency provides senior staff to the Cabinet; these staff members interact frequently between the Cabinet meetings. Many of these staff members are also either NC P20+ co-directors or NC P20+ Steering Committee members.

Sector Steering Committees. As noted in section 4.1, the NC P20+ project efforts will focus both on establishing shared Statewide infrastructure and on enhancing each participating sector's data management infrastructure. Each of the six sectors will oversee its enhancement activities through a governance structure similar to the one that sits over the entire initiative. Each sector Co-Director will report to that sector's Steering Committee, which will ensure that the sector-specific enhancements both meet the sector-specific data management, analysis, and reporting needs, and are consistent with the commitments made to NC P20+. In some cases, the sectorSteering Committee may leverage an existing structure, such as the NCECDG interagency steering group, that has been used to coordinate sector-wide data system development. In other sectors, the steering committee structure will be created exclusively for purposes of the NC P20+ work.

External Advisory Groups. The NC P20+ PMO and sector PMOs will establish respective external advisory groups as part of their separate governance structures. At the central level, leaders of NC's RTTT and other statewide USED and/or ARRA-funded initiatives related to use of longitudinal data, will be routinely consulted, and representatives of these initiatives will be invited to serve on the external advisory group. This will promote coordination between the NC RTTT and NC P20+ initiatives, so that the NC P20+ is developed to support use by a variety of end users whom RTTT also is supporting (e.g., including school district personnel). These advisory groups will also aim to bring together on a quarterly basis representatives of relevant stakeholder perspectives, such as teachers/faculty, local school district/campus administrators, and various non-profit think tanks or advocacy groups, to solicit advice regarding design and operation of NC P20+. Sector Co-Directors will be responsible for incorporating feedback from these external advisors into the project designs and implementation plans that they present to their respective sector steering committees for review and approval.

Collecting various stakeholder perspectives for input into the NC P20+ project design(s) will also support the NC P20+ Steering Committee and Education Cabinet in meeting the NC legislative mandate (see appendix A.2) to report to the General Assembly on the "requirements for a P-20 longitudinal data system for North Carolina."

4.3 Steady State Management and Governance

NC P20+ anticipates institutionalizing the upper three tiers (Governor, Education Cabinet, Statewide Steering Committee) of the project management and governance structure illustrated in figure 4.2, such that this structure would continue to characterize operation of NC P20+ in post-project, steady state implementation. The ongoing management and governance of sector-specific capabilities established or enhanced through sector-specific projects will be the responsibility of each member sector, with the provision that each sector will need to abide by its agreement to operate within the guidelines (e.g., for data quality assurance and contribution of NC P20+ data) established by the central NC P20+ governing body. Ongoing management of the NC P20+ shared infrastructure will be the responsibility of the central NC P20+ steady state governing body, the NC P20+ Governing Council.

NC P20+ Governing Council. As noted in section 1.2.1, the NC P20+ Project Steering Committee, including any of its sub-committees that have ongoing scope, will transform post-project to become the standing NC P20+ Governing Council. This Council will continue to operate subject to the authority of the Governor and her Education Cabinet and will be responsible for managing the operation of NC P20+. This management scope will include both high level administration (i.e., setting policy and procedures) and day-to-day administration (i.e., "care and feeding") of the Data Hub and enterprise data dictionary. Note that the Steering Committee/Council may choose during NC P20+ detailed design deliberations to allocate these operational responsibilities to specific sector partners.

Examples of standing Council sub-committee work may include maintaining the data dictionary, policies and procedures for granting access to NC P20+ data, training and technical assistance protocols, and promotional materials aimed at making various stakeholders aware of NC P20+ and what it offers. A central feature of this management and governance approach is that that the Council structure can adapt to incorporate more specialized focus and guidance without altering the basic arrangement through which the sectors collaborate in the Council and Education Cabinet. Clearly, the greater the scope of the Council's work, the greater must be the commitment of in-kind or direct funding by the State of NC to support these activities. Since the State's top leadership will be involved in governing NC P20+, the Governor and Cabinet members will be well positioned to advocate for or allocate from within agency budgets direct funding toward these activities if indeed the leaders believe they are valuable.

Ongoing Stakeholder Engagement. The NC P20+ SLDS will be an important tool for State and local leaders, and other interested stakeholders, but each set of stakeholders will have their own distinct needs and ways of interacting with the data. The NC P20+ Governance Council will be responsible for continually assessing the needs of these different stakeholders for types of information desired. This assessment in turn may imply needed modifications to the initial NC P20+ data set, and the initial set of information products produced by NC P20+ member sectors.

Information Products. As noted in section 1.2.2, NC P20+ will assume responsibility for ensuring that State leaders have access to the data and information products they need. To this end, the NC P20+ Governing Council will work to establish the most efficient and effective ways to leverage the expertise and capacity of existing sector staff and other partners to ensure that collectively, the member sectors and/or other partners produce the information products of highest value to the State. As part of this coordination effort, NC P20+ will disseminate information products, research methodologies, and lessons learned to member sectors and other partners through such channels as an NC P20+ project website, professional development venues, and conferences. The NC P20+ Governing Council may also convene gatherings of researchers and/or send representatives to regional and national gatherings focused on producing information products that support decision-making.

4.4 Compliance with ARRA Reporting/ NC Office of Recovery & Investment

Lead fiscal agent NCDPI and all the participating NC P20+ sector partners are committed to transparency, accountability, and good governance. Through established internal controls in each sector for the expenditure of federal funds and monitoring of programmatic progress, NC P20+ is positioned to meet the quarterly reporting requirements established under Section 1512 of the American Recovery and Reinvestment Act of 2009. Several of the partners (NCDPI, UNC, NCCCS, and NCESC) have already had to establish mechanisms for efficiently and effectively allocating and tracking ARRA funds. These mechanisms, assisted by the data system enhancements proposed for each sector, will ensure data quality and integrity, relevant sub-recipient reporting, and monitoring and preventing of fraud, waste and abuse.

V. Qualifications and Roles of Key Personnel

5.1 Overview of Personnel

The qualifications of the Project Director, six Co-Directors, and their CIOs, all of whom will form the core membership of the NC P20+ Steering Committee, are briefly described below, with more detailed qualifications described in Appendix B. In addition, professional staff that will assist at the sector-level are also described below. Respective annual effort (whether from federal or non-federal sources) and project roles are also provided. SLDS grant funds will be used to "supplement, not supplant" existing resources that NC is devoting to the development of NC P20+. Since the Project Director and Co-Directors are already engaged in SLDS development efforts, these personnel contributions are therefore captured in the project budget as being funded from non-federal sources.

NC P20+ anticipates hiring several fixed-term professionals to assist in project management and in various technical capacities. In addition, as is reflected in the Budget and Budget Narrative documents, we will likely contract out to vendors portions of both the sector-specific and shared enhancement and development activity. We thus cannot describe the qualifications of a number of key project staff in advance. All State of NC policies governing the hiring of fixed-term employees, as well as policies and procedures governing the seeking, selection, and management of contracts will be followed.

5.2 Qualifications of Key Personnel

NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION (DPI)

Project Director Mr. Adam Levinson, Director, Policy & Strategic Planning, is a member of the State Superintendent's Cabinet and leads, on behalf of the Superintendent, agency efforts to continuously improve organizational effectiveness and efficiency. This work includes efforts to establish, monitor, and manage agency strategic priorities and promote allocation of agency human and financial resources consistent with those priorities. Mr. Levinson counsels the Superintendent and State Board of Education chairman regarding a broad array of policy, strategic, and operational decisions. Mr. Levinson created a new division of the Superintendent's Office and currently manages seven direct reports, several of whom are responsible for development of policies and procedures for agency data management. He has also led and/or managed a number of large cross-agency projects including redesign of core business processes and agency reorganization. Mr. Levinson is the Project Director for the IES SLDS grant-funded Common Education Data Analysis & Reporting System (CEDARS). Mr. Levinson represents NCDPI in collaborations with various external stakeholders, including the legislature, Governor's office, NC Education Cabinet, other State agencies, local education agencies, vendors, and private non-profit entities. He is a member of the Council of Chief State Schools Officers Education Information Management Advisory Council (CCSSO EIMAC). On the NC P20+ project, Director Levinson's responsibilities will include management of the overall project and management of DPI's sector-specific sub-project. (Annual Effort: 25%).

Mr. Peter Asmar, Chief Information Officer, Technology Services, is a member of the State Superintendent's Cabinet and provides vision, leadership and management for information technology (IT) supporting NC's kindergarten through 12th grade public education system. As CIO, he heads the Technology Services area, which is responsible for centralized infrastructure support, network and desktop operations, application development, and instructional technology. Mr. Asmar also chairs the Technology Planning Group (TPG), a group representing NC state agencies that identifies opportunities to better leverage IT in a consistent fashion across the State. This group sets the direction and principles required to accomplish these goals, and provides advice and consultation to the Office of the State CIO (SCIO). Mr.

Asmar is the K-12 representative on the board of directors of MCNC, the non-profit agency that provides backbone internet connectivity for K-20 education in the state of NC. Mr. Asmar is a core member of the Steering Committee for the CEDARS project. On NC P20+ SLDS, Mr. Asmar will provide guidance for the overall project as a member of the NC P20+ Steering Committee and for the DPI-specific project as a member of the DPI project steering committee. His responsibilities will include providing leadership in the technical development of the NC P20+. (Annual Effort: 10%).

Mr. Philip Price, **Chief Financial Officer/Associate State Superintendent for NC DPI Financial and Business Services,** is a member of the State Superintendent's Cabinet and provides vision, leadership, and management for the Finance and Business Services (FBS) area, which contains the Division of School Business, Division of Financial Services, Division of School Support, Office of Charter Schools, Human Resource Management Section, and Systems Accounting Section. Financial and Business Services manages nearly $10 billion in State and federal funds and provides various technical support services to local education agencies. Mr. Price serves as a Steering Committee member on the CEDARS project. On the NC P20+ project, Mr. Price's responsibilities will include providing budget management and accountability for the overall project and providing guidance for the DPI-specific project as a member of the DPI project steering committee. (Annual Effort: 5%).

Other NCDPI Participants:

Mr. Karl Pond, Enterprise Data Manager, coordinates submissions of data for the Educational Data Exchange Network (EDEN), Consolidated State Performance Report (CSPR), National Center of Education Statistics Common Core of Data (NCES CCD), Data Quality Campaign (DQC), and Standard and Poor's. Mr. Pond also coordinates the NC DPI Data Management Group (DMG), an enterprise data governance council that sets policy and standards for data management at NCDPI. Mr. Pond is a member of the Council of Chief State Schools Officers Education Information Management Advisory Council (CCSSO EIMAC), a core member of the NCDPI CEDARS project team, and a key contributor to the NC P20+ Steering Committee. (Annual Effort: 30%)

Mr. Michael Veckenstedt, Chief Technology Officer (CTO), is responsible for the product and technology roadmaps of NC DPI by setting the direction and priorities for the agency. He is the IT Lead on the CEDARS project. On NC P20+, Mr.Veckenstedt's responsibilities will include guiding the technical vision and design efforts for enterprise-application-integration that is at the core of the DPI-specific project. (Annual Effort: 5%).

Mr. Gerald Kenneth Thompson, Enterprise Architect of the Technology Services Area, develops and maintains the NC DPI objective architecture document and roadmap. He serves on the core CEDARS project team. On NC P20+, Thompson's responsibilities will include assistance with the design and implementation of the enterprise-application-integration that is at the core of the DPI-specific project.. (Annual Effort: 5%).

UNIVERSITY OF NORTH CAROLINA SYSTEM (UNC)

Project Co-Director Dr. Alisa Chapman, Associate Vice President for Academic Planning and University-School Programs, is responsible for advancing efforts within the University to prepare more and better teachers and school leaders for NC public schools. Her direct responsibilities include supporting and strengthening academic program development, data and research analysis aimed at improving the preparation and development of teachers and school leaders, and working closely with the UNC Deans' Council on Teacher Education. Her background is rooted in educational technology experience and she has co-facilitated the North Carolina longitudinal data system discussions in partnership with the North Carolina

Department of Public Instruction. Alisa's professional experiences have taken her from employment in the public schools of North Carolina to employment in a higher education policy setting. In K-12 education she has worked at the school, district, and state levels. In higher education, her professional experiences have occurred at the campus, system, and state levels. Ms. Chapman's responsibilities on NC P20+ SLDS will include a focus on the goals and design of the data system to serve the needs of research on improving student achievement. (Annual Effort: 5%).

Mr. John Leydon, Vice President of Information Resources and Chief Information Officer, is the Vice President, Information Resources and Chief Information Officer (CIO) at UNC. Prior to joining UNC-GA, John held the position of Executive Director, Information Technology and CIO at the University System of New Hampshire (USNH). John has responsibility for all information technology services that are shared among the 17 UNC institutions. A primary example of a shared service is the state wide research and education network (NCREN) which connects all of the UNC institutions and provides a gateway for all NCREN users. In the role of CIO, he coordinates several UNC system wide and statewide groups such as the UNC CIO Council, the NC Common Solutions Work Group and the quarterly meeting of the State ITS CIO, the CIO of the Community College System, and the CIO for the State Department of Instruction (K-12). John has held a variety of CIO positions in higher education. He was a consultant to higher education for over 20 years and performed interim CIO roles for several campuses. He served as the senior information technology executive in private industry as the Vice President, Management Systems and Services for Monarch Life Insurance Company. On NC P20+ SLDS, Mr. Leydon's responsibilities will include serving on the NC P20+ Steering Committee and, assisting with technical design of the overall NC P20+ system, and in the UNC-specific project, revamping the UNC data management system to support Institutional Research. (Annual Effort: 5%)

Other UNC Participants:

Mr. Paul Hudy, Director of Networking and Media Services in the Information Resources Division. Internally, Hudy and his team are responsible for the day to day information technology operations at UNC General Administration. His areas of management and operational responsibilities include: Networking, Systems/Servers, End-User Services, Audio Visual systems, Video Conferencing, IT Security, Backup/Disaster Recovery/Business Continuity and IT Support Infrastructure (HVAC, UPS and generators). He manages the systems/server, storage and networking infrastructure used by the Institutional Research and Analysis Division of UNCGA in its data collection efforts with the UNC campuses, NC Community Colleges, NC DPI, and NC ICU. Mr. Hudy currently leads and participates in UNC System-wide initiatives around the areas of Networking, IT Security, IT funding, and Video Services. In the context of NC P20+, he will assist in guiding the revamping of the UNC storage and security systems and in the work on overall NC P20+ system design. (Annual Effort: 5%)

Dr. Alan Mabe, Senior Vice President for Academic Affairs has responsibility for academic affairs, academic planning, and institutional research in the 16 campus University of North Carolina System. He has been a leading advocate for research to support evidenced-based decisions making and determining the best practices for preparing teachers and school leaders who promote higher student achievement. He has served as a core member of the NC P20+ Steering Committee to date and will continue to be involved in NC P20+ as a member of the UNC steering committee and as senior staff to the Education Cabinet. (Annual Effort: 5%)

Co-Project Director Dr. Saundra Wall Williams, Senior Vice President and Chief of Technology and Workforce Development for NCCCS, leads the information technology and resources, technology infrastructure, data management and data warehouse, distance learning, workforce development, human resource development, continuing education, staff training, project management, small business centers, and emergency service functions organizations within the community college system. Dr. Williams is also an Adjunct Assistant Professor of Adult and Higher Education at North Carolina State University, specializing in training and development. Dr. Williams was also named a Houle Scholar in Adult Education and serves on the editorial board for the *Journal of Workplace Learning*. She has numerous publications in the area of training and development, workplace learning, and distance delivered training, specifically e-learning. Prior to coming to the NCCCS, Dr. Williams worked for twelve years in business and industry for Nortel, Broadband Technologies, and Syntel. Dr. Williams's responsibilities on NC P20+ will include serving as project Co-Director, which involves both serving on the NC P20+ Steering Committee and managing the NCCCS-specific sub-project (Annual effort: 10%).

Mr. Keith Brown, Associate Vice President for Research and Performance Management for the NCCCS has primary responsibility for directing all research, accountability, and evaluation efforts for the NCCCS. Mr. Brown has served on several national committees examining state longitudinal data systems sponsored by the following groups: State Higher Education Executive Organization (SHEEO), American Association of Community Colleges (AACC), Jobs for the Future (JFF), and the Southern Regional Education Board (SREB). Mr. Brown's responsibilities on NC P20+ will include serving on the NC P20+ Steering Committee and playing a senior manager role regarding all matters of project design and data analysis for the NCCCS execution on both NC P20+ shared infrastructure implementation and on the NCCCS-specific sub-project. (Annual effort: 5%)

Other NCCCS Participants:

Mr. Bruce Humphrey, Associate Vice President and Director of the Project Management Office, has more than 30 years experience in information systems in both the private and public sectors. After spanning three decades of work with IBM in Software Engineering, Systems Integration, Customized Operational Services, data center operations, project management and e-business, He directs the IT Project Management Office for NCCCS. Mr. Humphrey will have a senior manager role responsible for all matters of project management for the NCCCS execution on the NC P20+ Project. (Annual effort: 5%)

Mr. Arthur Hohnsbehn, Director of Information Services Delivery, leads a section of 40 individuals responsible for three major areas of technology for the North Carolina Community College System: maintenance and development of the College Information System (CIS) Template in the areas of Student Records, Human Resources/Payroll, and Finance; 2) editing and loading of data into NCCCS System Office Data Warehouse; and 3) systems and networks used at the System Office. On the NC P20+ Project, Mr. Hohnsbehn will have a managerial role responsible for all matters of project design and implementation for the NCCCS execution on the NC P20+ Project. (Annual Effort: 5%)

Mr. Terrence Ann Shelwood. Director of State-Level Reporting for the Data Warehouse, is responsible for the Business Objects software, security, universes, and reports (standard & ad-hoc). Shelwood has been responsible for the timeliness and accuracy of 70+ reports from the 58 colleges and the System Office. She has worked to develop the Student Progress Monitoring System - a statewide system to measure student progress. She has designed, in cooperation

with Information Services, administered the Literacy Education Information System - a system to collect, edit, analyze, report, and store Literacy/Basic Skills student data. On the NC P20+ Project, Mrs. Shelwood will have a managerial role responsible for all matters of project design for reporting for the NCCCS execution on the NC P20+ Project. (Annual Effort: 5%)

Mr. Ricky (Rick) L. Newsome, Associate Director, Information Systems, North Carolina Community College System, in charge of technical aspects of data warehousing 2008, with the splitting of the data warehouse team into 2 sections, reporting, and technical, he became responsible for supervising the technical team. On the NC P20+ project, Mr. Newsome will have a managerial role responsible for all matters of project design for the NCCCS execution on the NC P20+ project. (Annual Effort: 5%)

NORTH CAROLINA EARLY CHILDHOOD DATA GROUP (NCECDG)

Co-Project Director Dr. Patrice Neal, Investigator at the Frank Porter Graham (FPG) Child Development Institute is Principal Investigator for the NC Collaborative Outcomes Project, an Office of Special Education Programs (OSEP) funded General Supervision Enhancement Grant (GSEG). The project is designed to improve state capacity for measuring and reporting child and family outcome data in a manner that is integrated across early childhood agencies and accountability initiatives, including development of a plan for effective data system integration. Dr. Neal has extensive experience in program and grant administration; information-sharing among diverse stakeholder groups, legislators and legislative staff, program administrators, and direct service providers. Dr. Neal chairs a committee of the North Carolina Interagency Coordinating Council (ICC), which advises and assists in state efforts related to measuring and reporting child and family outcomes and using the data for informed decision making and program improvement. Dr. Neal will serve on the proposed SLDS initiative as full-time Project Director for the NCECDG Sector, coordinating data system enhancement and improvement efforts across the state's multiple early childhood partners. (Annual Effort: 5%)

Dr. Duncan Munn, LDS Consultant for NCECDG, has over 35 years of experience in working with supports and services for persons with developmental disabilities. Specific responsibilities have included managing statewide interagency service systems such as early intervention, management of specific statewide programs such as, case management and long-term support related to supported employment, carrying out workforce development, program evaluation, grant project management, and budget development and policy development related activities. On NC P20+, Dr. Munn will serve on the NC P20+ Steering Committee and NCECDG-specific steering committee, and will provide valuable insight and guidance to the NC P20+ entities regarding the nature of the data provided by the NCECDG. (Annual Effort: 5%)

NORTH CAROLINA INDEPENDENT COLLEGES AND UNIVERSITIES (NCICU)

Co-Project Director Dr. A. Hope Williams, President of North Carolina Independent Colleges and Universities (NCICU), the statewide advocacy and public policy organization for the 36 independent, or private, colleges and universities in the state. As President, she is the Chief Executive Officer for the 36 presidents who comprise NCICU's Board of Directors and for the Independent College Fund of North Carolina, that raises corporate and foundation funds for student scholarships. She works on behalf of independent colleges and universities, advocating for public policy issues, providing research and information, raising corporate and foundation funds and administering collaborative programs. She has overseen the research function of NCICU for 23 years including the development and dissemination of the NCICU Annual Report that provides information on the sector's enrollment, financial aid and degrees

awarded, as well as general demographic information. She arranges meetings of Institutional Researchers annually, sponsors an annual NCICU Assessment Conference for the sector and has served as president of the North Carolina Association of Institutional Researchers. On NC P20+, Dr. Williams will be Co-Director of the NCICU-specific project, devoting 15 percent of her time the first and third years and 10 percent the second year. In this role, Dr. Williams will serve on the NC P20+ Steering Committee and oversee the development, testing, and implementation of the new NCICU centralized data system. (Annual Effort: 5%)

Senator Tim McDowell, Vice President for Government Relations. joined the staff of NCICU in 1994, following a career of 20 years in private college administration. Sen, McDowell served nine years in the NC General Assembly. He chaired several legislative committees and was a member of the Governmental Operations Committee. Sen. McDowell's role will be to work with the various independent colleges and Universities to coordinate their participation in the development of the new centralized NCICU data system and in NC P20+. (Annual Effort: 5%)

EMPLOYMENT SECURITY COMMISSION OF NORTH CAROLINA (ESC)

Co-Project Director Dr. Elizabeth (Betty) McGrath, Director of Labor Market Information since 2008, is responsible for the overall direction and management of the LMI Division. This includes the administration, data collection, research, analyses, reporting and dissemination of information on the state's economy, labor force and workforce related issues. Dr. McGrath is responsible for administering five Federal/State cooperative programs with the Bureau of Labor Statistics; management of information for the Workforce Information Core Products funded by the U.S. Department of Labor's Employment and Training; management of data collection, processing, analyses and reporting of information for the North Carolina Common Follow-up System; management of performance reporting to the US DOL ETA for several workforce programs; and management of analyses and reporting of information related to the operation of the state's Unemployment Insurance System and Employment Service Operations. She haws managed the North Carolina Common Follow-up System (CFS), a longitudinal system used to provide information on the educational and employment outcomes of individuals participating in publicly supported education, employment and training programs. The CFS links unit record information across 11 state entities and matches the individual records with the state's Unemployment Insurance Wage file. Dr. McGrath's responsibilities on NC P20+ will include serving as project Co-Director, which involves both serving on the NC P20+ Steering Committee and managing the NCCCS-specific sub-project. She will lead the effort for the integration of workforce data into NC P20+. (Annual Effort: 5%)

Mr. Robert A. Cottrell, Jr., Information Systems Director, has worked for ESC in the field of Labor Market Information for nearly 20 years, including seven years as the Director of the Labor Market Information Division. He currently serves as the chair of the Analyst Resource Center (ARC) Consortium which oversees the development and maintenance of the national Workforce Information Database and acquisition and distribution of the Employer Database. He also is a member of the Occupational Employment Statistics (OES) Policy Council sponsored by the Bureau of Labor Statistics. Mr. Cottrell's role on the NC P20+ project will be to serve on the NC P20+ Steering Committee, advise on technical design of both the shared and NCESC-specific infrastructure, and address ways that employment data can be integrated for use by the other educational sectors. (Annual Effort: 5%)