

## **STATEMENT OF CAPACITY**

The RI Department of Labor and Training (RIDLT) is partnering with the RI Department of Elementary and Secondary Education (RIDE), the RI Office of Higher Education (RIOHE), the RI Department of Human Services (RIDHS), and The Providence Plan to pursue an investment of Workforce Data Quality Initiative (WDQI) resources from the U.S. Department of Labor (DOL).

RIDLT and its partners are committed to expanding the functionality and usefulness of the state's longitudinal workforce data system and establishing mechanisms to link education and workforce data, to promote a new era of data-driven decision making and better resource prioritization. To achieve these outcomes, Rhode Island is committed to enhancing the level of collaboration and partnership needed to ensure that data are shared, analyzed, and presented in ways that answer essential questions facing education and workforce stakeholders. Throughout this process, we are equally committed to building the capacity of decision-makers to use data as well as developing an effective and accessible data tool for use by the public.

Presently, Rhode Island considers its workforce longitudinal data system to be *Partially Developed* as defined among the three categories outlined in the *Determining Capacity* section of the SGA. By securing a WDQI grant, Rhode Island will achieve the following four objectives: 1) a fully developed workforce longitudinal data system, 2) the complete linkage of workforce and education data along a P-20W continuum (from Pre-Kindergarten through post-secondary education and into the workforce), 3) analyses that answer critical policy questions that are subsequently shared with key stakeholders, and 4) the further development of the *Rhode Island DataHUB* - a publicly accessible online portal that features visualizations and longitudinal data in aggregate formats.

At this point, one of the greatest strengths of Rhode Island's Statewide Longitudinal Data System (SLDS) is the quality of its longitudinal education data system and its capacity to link data along the entire education continuum (P-20). In recent years, RIDE and RIOHE have each made critical investments in their data infrastructures by leveraging federal resources (Statewide Longitudinal Data Systems grants by RIDE and College Challenge Access grants by RIOHE). In partnership, these agencies have replaced inefficient manual workflows, costly paper processes, and

data system silos with new technology systems that have resulted in cleaner information, streamlined workflows, unified technology processes, improved document management, better interoperability, and most importantly, the capacity to link individual-level record data in ways that preserve all of the confidentiality requirements as presented in the Family Education Rights and Privacy Act (FERPA).

Much of the success that Rhode Island has realized in linking educational data has been the result of collaboration among RIDE, RIOHE, and The Providence Plan (ProvPlan). When FERPA guidelines and other hurdles limited the capacity of RIDE and RIOHE to share Personally Identifiable Information (PII) data with each other, both agencies agreed that ProvPlan was a highly qualified partner with a demonstrated capacity to store, analyze, and display longitudinal data.

ProvPlan is a private nonprofit organization established in 1992 by the Mayor of Providence and Governor of Rhode Island. The organization's primary mission is to serve as a convener and data intermediary among state and local agencies. In this role, the organization provides detailed data analysis and develops web-based applications designed for democratizing data and providing policymakers, community-based organizations, and other stakeholders with access to information that would otherwise be difficult to attain. With 20 years in building local expertise and a governance structure that provides the Governor with considerable oversight, state agencies felt comfortable in building the capacity of ProvPlan to become a nucleus for the development of Rhode Island's SLDS. Following the execution of data-sharing agreements, a security audit of ProvPlan's IT infrastructure, and the first set of data linkage activities between RIDE and RIOHE (began in 2011), the capacity to link data points from tens of thousands of residents was established.

On the heels of the progress that Rhode Island has made in the development of the educational components of its LDS, the State is now ready to make further investments to enhance its overall SLDS. Rhode Island was one of nine states to receive a *Race to the Top Early Learning Challenge* grant – a once-in-a-generation opportunity for its early care and education system. A key deliverable of the *Early Learning Challenge* grant will be the development of a longitudinal early learning data system that not only links education, health, and human services data for children birth to five, but will be fully linked to the existing P-20 LDS. And, with an investment of WDQI resources, Rhode Island will

concentrate on the development of its workforce data systems with a dual focus on building RIDLT's internal capacity to use their workforce data more effectively and for the agency to link their data with education and other agencies in Rhode Island. Once all of these efforts are complete, Rhode Island will become a model in its LDS development and its use in shaping public policy.

Within RIDLT, the Labor Market Information (LMI) Division is the primary agent in the development and operation of a longitudinal workforce system. LMI is responsible for the collection, analysis, dissemination, and publication of information on the state labor market. The Division's focus is to describe the labor area in terms of its jobs, workers, wages, industrial structure, and economic conditions. This is most often reflected in the production of monthly, quarterly, and annual reports on topics related to employment, unemployment, wages, and occupational safety.

Categories of data that LMI collects on an individual level include: WIA Title I; Wagner-Peyser Act; Trade Adjustment Assistance (TAA); Unemployment Insurance; Wage Record, Registered Apprenticeship; and Trade Licensing. The Division's audiences for these reports are job seekers, employers, policymakers, economists, members of the media, and government officials.

In order to provide this level of reporting and analysis, RIDLT maintains a modern data center facility with redundant power, cooling, and networks to maintain the secure storage of data. The data center currently meets Tier 2 specifications as described in the TIA-942 standards. Physical access to the room, which houses the network, is secured by an electronic keycard system that logs entry to the datacenter and limits entry to authorized personnel only. Access to the system consoles is strictly limited to system administrators with specific tasks that require direct console control. The data center network is secured by multiple firewalls in a stratified tiered configuration that protects it from both Internet and internal threats. In addition to the firewalls, RIDLT employs an advanced Cisco Intrusion Protection System, combined with a Cisco Monitor and Reporting System that monitors and reports any possible network threats. RIDLT also has security audits performed by a third party as part of the Independent Verify and Validation program as required by DOL.

Given the lack of resources to implement broad changes to its data warehouse system (compared to federal investments in educational data systems) and the reality of competing agency

priorities (Rhode Island currently has the second highest unemployment rate in the country), the present workforce data system within RIDLT can be characterized as adequate, but subject to underinvestment compared to its educational counterparts. RIDLT does possess the capacity to produce the static data needed for its compliance reports; however, given the fact that the current workforce data system has limited capacity to create linkages within its own databases as well as no present ability to connect to the State's educational data, it is the least integrated into the state's LDS and poised to benefit the most from an investment that leverages ongoing efforts in Rhode Island.

**Partnerships for Moving Forward:** Overall, Rhode Island shares a collective commitment to create a user-friendly LDS that not only connects disparate education and workforce data in ways that will answer essential policy and operational questions, but one that is also accessible to meet the needs of multiple stakeholders (policymakers, researchers, community-based organizations, etc.). Rhode Island's ongoing commitment to facilitate such partnerships is reflected through a variety of documents that are included as attachments to our Technical Proposal. These include: 1) a Statement of Agreement executed by RIDLT, RIDE, RIOHE, RIDHS and ProvPlan; 2) an existing data-sharing agreement between RIDE, RIOHE, and ProvPlan, 3) Letters of Intent between RIDLT and ProvPlan and between RIDHS and ProvPlan to execute data-sharing agreements that are directly linked to this application and provide data needed to build out the LDS; and 4) letters of support from agency leadership that document the commitment and determination to ensure that project implementation occurs in the timeframe and format as proposed.

As outlined in the Statement of Agreement (see pages 36-41), ProvPlan has been identified by RIDLT and the other state agencies as the Data Intermediary partner that will link the individual-level record data needed to create a fully functioning LDS that operates along a P-20W continuum. Through this designation, ProvPlan will be in the role of "Research Entity" as described in the various possible program models outlined in the WDQI SGA. In playing this role, ProvPlan will provide direct support to RIDLT by building its capacity to link existing workforce development participant data as well as wage and unemployment beneficiary data. Once ProvPlan has developed the capacity to provide RIDLT with a fully functioning workforce longitudinal data infrastructure

for its own usage, ProvPlan will begin the process of linking RIDLT data to the existing LDS that ProvPlan manages on behalf of the State. The ability to create such linkages and answer critical policy questions about the connections between education and workforce will represent a major value-add to RIDLT as the agency faces increased pressure to document results, pursue new strategies, and produce meaningful outcomes in an era of shrinking resources.

As reflected in the attached Statement of Agreement and the copy of the data-sharing agreement executed between RIDE, RIOHE, and ProvPlan (see pages 47-54), ProvPlan has been designated by both RIDE and RIOHE as an authorized agent under FERPA, which enables the nonprofit to possess all of the necessary data in order to create the individual linkage capacity. Also located in our Appendix are Letters of Intent from RIDLT and RIDHS committing each of these agencies to enter into data-sharing agreements with ProvPlan (see pages 55-58). RIDHS and ProvPlan have a draft agreement that is moving through the legal review process, while RIDLT and ProvPlan have had discussions over the past year around developing a data-sharing agreement – with each entity eager to use the WDQI opportunity as the catalyst to move forward with such a partnership.

**Data Linkage Experiences:** Rhode Island will begin its WDQI efforts with significant on-the-ground momentum as well as the political will to advance its LDS efforts. As outlined in the Letter of Intent on pages 55-56, RIDLT will execute a data-sharing agreement with ProvPlan that will cover all of the data areas outlined in the SGA, including wage record data, employment and training services data, unemployment benefits data, as well as WIA, Wagner-Peyser, and Trade Adjustment Assistance data. While several administrative and legislative procedures (described later in this narrative) will be necessary in order to facilitate the sharing of wage and unemployment data with ProvPlan, RIDLT is committed to making this happen as quickly as possible.

RIDLT's motivation to execute this agreement and begin the data-sharing process with ProvPlan has been driven by the value that educational agencies (RIDE and RIOHE) have seen through their execution of data-sharing agreements with ProvPlan. To date, these linkages have produced meaningful longitudinal analysis along the P-20 continuum that have examined issues such as: 1) the relationship between student achievement in high school and persistence rates among

students enrolled in post-secondary education, 2) the correlation among high school graduates who were chronically absent during high school and their ability to complete college-level coursework, and 3) the performance of high school students on particular state-level assessment tests (i.e., math or science) and their subsequent need to take remedial education courses upon enrolling in college. Prior to the data-sharing agreement among RIDE, RIOHE, and ProvPlan, this level of analysis was not possible and operational questions that were important to stakeholders remained unanswered.

In addition to building a longitudinal data system within education, Rhode Island has become a national leader in linking education, health, and child welfare data – again through partnerships in which state agencies are sharing their data with ProvPlan. For example, ProvPlan has been able to link childhood lead data from the RI Department of Health and third-grade student achievement data as a way to explore “the cost” of lead poisoning in terms of educational expenses.

Through its participation in the Rhode Island LDS Steering Committee and the Rhode Island Longitudinal Data Analyses Work Group, RIDLT has observed the return on investment that other agencies are seeing by executing data-sharing agreements with ProvPlan and making their data available for analysis through the Rhode Island DataHUB. It is with these experiences and examples in mind that RIDLT has determined that the most appropriate way for us to build our own longitudinal workforce data system and create linkages with educational and other sources of data is to forge a partnership with ProvPlan and to identify the nonprofit organization as a “Research Entity” to support data linkage efforts and provide analysis consistent with the WDQI objectives.

**Partnerships with other States:** At this point there are no current efforts to bring other states into Rhode Island’s SLDS, although the State would be interested in exploring such options in the future. Rhode Island is quite involved with the national Data Quality Campaign and does have a demonstrated track record in collaborating with several other states in developing common educational curriculum and assessment tools. In particular, Rhode Island is interested in learning about the capacities that other states have gained in cross-sharing experiences through WDQI resources or other DOL grants in which multi-state applicants have existed - such as the TAACCCT grant program or the pending awards associated with DOL’s Workforce Innovation Fund.

## **PLAN OUTLINE**

**Building Rhode Island's Longitudinal Workforce Data System.** Over the past few years, the combination of effective strategic planning and federal resources has enabled RIDE to build an LDS that is regarded as a national model by design and operation standards. And while this has been great for RIDE and Rhode Island to see this system designed and deployed, one outcome of these efforts has been the widening of the gap that exists with educational and workforce data systems in Rhode Island. A WDQI investment will provide Rhode Island with an opportunity to close this gap by building the capacity of RIDLT to develop and operate its own longitudinal workforce data system that can link to educational data.

In taking these steps, RIDLT will use WDQI funds to achieve two outcomes. The first is to create a longitudinal workforce data system that will improve decision-making capacity within RIDLT and help guide resource allocation and investment priorities. This will be achieved by building an internal data warehouse capacity within RIDLT. The second outcome is a demonstrated capacity to link workforce data to educational data and other sources of data in Rhode Island's LDS as a way to gain a greater understanding of the overall impact of public policy as well as provide insight to the impact of particular investments and/or programmatic initiatives. This outcome will be achieved by linking RIDLT data to rest of Rhode Island's LDS via the Rhode Island DataHUB.

While data systems are critically important to RIDLT, the agency has a broad set of purposes and functions. These include providing workforce development services and protections to workers, employers, and citizens. In addition, the agency offers employment services and economic incentives to individuals and employers as well as enforces labor laws, prevailing wage rates, and workplace safety standards. Furthermore, RIDLT provides temporary income to unemployed and temporarily disabled workers. Given that Rhode Island's unemployment rate has been a steady top five fixture in the country for five years and was ranked 2<sup>nd</sup> highest in March 2011, RIDLT has faced unprecedented challenges and demands in helping Rhode Island's economy recover.

While Rhode Island's current workforce data systems can be characterized as sufficient for the data demands that existed several years ago, there is little capacity to meet the data needs of the

future. By leveraging the experiences gained by RIDE, consulting best practices developed by the Data Quality Campaign, and monitoring the lessons learned from states participating in the ADARE alliance and other efforts, RIDLT will embark on an effort that will: improve the quality of workforce data; create a capacity to examine multiple streams of workforce data; and link (via the Rhode Island DataHUB) workforce and education data in ways that will help policymakers and practitioners gain a greater understanding of the impact of workforce and educational investments.

To achieve these outcomes, RIDLT will need to develop an internal Data Warehouse capacity. As outlined below and discussed in greater detail on pages 18-20, the agency will build such a warehouse using a similar platform structure that RIDE used in developing their LDS. In a macro sense, the components to building a Data Warehouse will include identifying the data elements that exist for warehouse development; designing the database tables, developing table schema and structure, and constructing table relationship variables. These activities will set the stage to support internal data linking and the development of federated data marts – the latter being the interface points within the data warehouse environment where internal users will be able to access and manipulate data. In order to guide data warehouse design as well as maximize functionality and utility, RIDLT will form an internal data user group of agency personnel that includes LMI and other units that collect, supply, and manage individual-level record data.

By creating a functioning data warehouse within RIDLT, numerous opportunities for analysis can occur – within RIDLT and by other partners in state government. Through the experience it has gained in working with state agencies in developing data systems, ProvPlan has emphasized to RIDLT the importance of prioritizing internal data system quality first before trying to link to data outside the agencies, and this project model reflects that approach.

As outlined in the budget, WDQI resources will go to support a portion of these activities – primarily through a full-time Project/Data Manager who will possess the skills and knowledge to manage and lead the data warehouse development process – as well as investments in ProvPlan who will assist in designing the data dictionaries and developing the query logic needed to link datasets. Given that the scale of data warehouse development required, RIDLT recognizes that resources

beyond WDQI will be needed to support the implementation of this effort, including funds for Data Warehouse Developers (Extract, Transform, Load and Interface Development) needed for this project. Resources for the latter and hardware associated with the design of the data warehouse have been identified from RIDE's recent SLDS grant award from the U.S. Department of Education, and those resources should be available to RIDLT concurrent to its WDQI project.

**Status of Rhode Island's Longitudinal Educational Data System.** As indicated above, the P-12 data system developed by RIDE has been the most resourced to date, and subsequently, is the most advanced data system in terms of completeness and linkage capacity. This success to date is evidenced by the fact that RIDE's LDS was reported to possess nine of the 10 data elements in the 2011 Data Quality Campaign's "10 Essential Elements of a State Longitudinal Data System", and seven of 10 in Data Quality Campaign's "10 State Actions to Ensure Effective Data Use."

In the early part of the 2000s, RIDE developed and implemented an in-house Information Services portal designed to facilitate information exchange and state reporting. These efforts were aimed at transforming a system defined by inefficient manual workflows, State Education Agency (SEA)/ Local Educational Agencies (LEA) system silos, and intra-RIDE system stovepipes. By modernizing and re-engineering operational and system processes, RIDE achieved positive results for LEAs and the agency itself. In short, new technology systems and operational re-engineering efforts resulted in a foundation of cleaner information, streamlined electronic workflows, more unified technology processes, improved document management capacity, and better interoperability.

Another key outcome of this modernization was the fact that RIDE could now use Web-based forms and utilities to improve program-based data collections as well as statewide and systems-output data. A core element of this system – eRIDE – helped streamline the collection process and improved the accuracy, timeliness, and utility of data that RIDE leadership could use to inform management, budget, and policy decisions in ways that support and promote student achievement.

Another key development of this modernization effort was the development of a State-Assigned Student Identifier (SASID) – a system in which a unique number is provided to currently enrolled students and allows for the ability to track and measure across time and location at the finest level of

data granularity. The RIDE Information Services portal not only streamlined data management and reporting but also supported the creation of platforms that maximized the best available technology at the time. These efforts played a major role in Rhode Island receiving national acclaim and recognition for *Information Works!* (the state's first online school-accountability initiative) and the *SALT Survey* (School Accountability for Learning and Teaching), the latter being the first-of-its-kind school climate survey that was administered to parents, teachers, administrators and students.

At the time, the PDF formats associated with these platforms satisfied users who were grateful for the first time to be able to access information electronically. However, the advances in technology in the latter half of the 2000s made these platforms quickly outdated. Users soon wanted platforms that had better visualizations, the capacity to manipulate data “on the fly”, and the ability to create reports that could be customized by educational activity, geography, or time series.

At the same time in which RIDE data systems and corresponding platforms were becoming a bit “long in the tooth,” the agency saw its first leadership change in 17 years - with the hiring of Commissioner Deborah Gist. Since her arrival in 2009, Ms. Gist's passion for education and her commitment to reform has transformed RIDE and every facet of the education system in the state.

Commissioner Gist's unwavering commitment to Rhode Island's LDS was immediately evident. Within her first month, the Commissioner hired an external consultant to provide a gap analysis of the current LDS. The consultant explored the data warehouse and all other RIDE data feeds and interviewed LEA technology directors, vendors, and any partners associated with RIDE's data infrastructure. In addition, the investigation included detailed interviews with representatives from all of RIDE's offices to determine data needs, technology gaps, and governance issues.

The consultant examined RIDE's entire data-IT platform, including the data warehouse design, the back-end infrastructure, the Extract, Transform, Load (ETL) processes, and the software tools designed to serve the front-end applications. In evaluating RIDE's “very sophisticated and complex platform,” the report gave the agency high marks for the system's security infrastructure, its data-cleaning protocols, and the system's capacity to analyze statewide assessment data and produce canned reports (its primary initial function). Paradoxically, the report was critical of deficiencies in

system flexibility, ease-of-use, and effort needed for maintenance. The report also gave low marks for the system's capacity to provide public access to information, create data feeds with third party applications and LEAs, sync with higher education databases, and integrate data from RIDE's special education, career and technical education, finance, and adult education data systems.

The report findings and subsequent recommendations helped solidify "Developing User-Friendly Data Systems" one of the five priority goals in the RIDE 2010-2015 Strategic Plan, "Transforming Education in Rhode Island." In the 2+ years since Commissioner Gist's arrival, Rhode Island has implemented new data governance models and moved ahead with modifications to its data platforms – with several more significant enhancements slated for 2012.

By September 2012, RIDE will have implemented its new Enterprise Data System, a significant upgrade to its infrastructure that will result in a new data rich ecosystem. The RIDE Enterprise Data System will include the launch of an updated integration layer – an Operational Data Store (ODS) - that will exist between eRIDE and an updated Data Warehouse. The ODS will consolidate all the disparate source system data together in one highly normalized database, which will provide standardization and consistency to the information. The ODS will feed the data to the data warehouse which will be structured for reporting. The data warehouse will supply data to a series of newly constructed Data Marts that will fuel several Data Platforms that support students, parents, educators, administrators, researchers, and policymakers.

The Data Platforms include an updated *Information Works LIVE!* – an interactive website that provides the public easy access to information about schools, districts, and the state as a whole. In addition, RIDE has used substantial portions of its most recent SLDS grant to support the development and launch of the *Rhode Island DataHUB* and *Way To Go Rhode Island*.

The Rhode Island DataHUB (developed by ProvPlan) is a data integration and visualization system which links education, health, child welfare, and human services information at an individual level, but produces outputs at a fine aggregate level in order to preserve confidentiality. As part of the Rhode Island DataHUB development in 2009, RIDE became a charter member of the Open Indicators Consortium (OIC) – a ten-member national collaborative of public agencies and

nonprofits working to improve access to more and higher quality data through the development of Weave - a high-performance open source data analysis and visualization platform.

Way To Go Rhode Island (WaytogoRI) functions as the primary student/consumer component of the LDS. Developed and maintained by the RI Higher Education Assistance Authority (RIHEAA), WaytogoRI provides interactive career and college planning tools to help students, parents, and educators explore education options, discover a wide variety of occupations, and make plans to achieve education and career goals. The site also allows students to maintain an electronic portfolio and provides them with free tools, such as SAT/ACT prep, career and college inventories, transcript tracking, and college applications to plan and prepare for their future.

In addition to these platforms, RIDE is poised to launch two new major Data Platforms in conjunction with Rhode Island's Race to the Top (RTT) work. The first is the launch of an Instructional Management System (IMS), and the second is the launch of the Educator Performance and Support System (EPSS). The IMS will support teachers and educational leaders in their efforts to improve student success, close achievement gaps, and ensure that students are on the path towards success in college, careers, and life. When launched, the IMS will provide a systematic and ongoing combination of curriculum (including standards), instruction, and assessment to support improvements in student achievement. Using a single, web-based platform, the IMS will provide a 360° view of each student ensuring that fully-informed and evidence-based decision making drive personalized learning and offer teachers an easy-to-use method to guide day-to-day activities, interventions, and progress monitoring. Meanwhile, the EPSS will be a central component of the state's new teacher evaluation system that will provide an easy-to-use interface to collect and manage data on all components of RIDE's educator evaluation system. In general, educators will use the EPSS to manage the evaluation process, which will include viewing formative evaluation summaries, tracking professional development progress, and managing final summative rankings. Collectively, the design, launch, and initial support of these two platforms represent a \$6.5 million investment.

Overall, the P-12 portion of Rhode Island's LDS has made strong progress in recent years and once the state's outcomes for the FY 2009 SLDS grant and the RTT grant are achieved, Rhode

Island will have the type of P-12 data infrastructure needed to support the LDS. Although RIDE's systems have become the "gold standard" within the State's LDS, the reality is that these quality systems presently shine a bright light on those areas that have been underinvested in recent years – that is, postsecondary and workforce data systems and the overarching challenge to transition from having adequate data systems to specifically using them in ways that help employers, workforce intermediaries, policymakers, and stakeholders use data to inform decisions and improve outcomes. Thankfully, RIDE has been a great supporter of RIDLT's desire to improve its data systems and the deliverables outlined above will benefit RIDLT greatly as it moves forward with its efforts.

**Sustainability Efforts.** Rhode Island understands that in order to build a successful LDS across educational and workforce domains, a continuous flow of resources must be available to provide ongoing support and maintenance. As evidenced by the Letters of Support and Statement of Agreement included in this application (pages 36-46), agency partners are committed to investing the time and resources for maintenance, quality control, training, and developing new efficiencies.

As the largest contributor to the LDS, RIDE has succeeded in making the case to our General Assembly for a state appropriation (\$75,000) to support its data warehouse and LDS activities. While such a state-level commitment does not yet exist within RIDLT, a key outcome of this project is to make the case for such an investment. Within RIDLT, staff commitment to the ongoing development of a workforce LDS is strong, agency-wide. As a result, the commitment by RIDLT and other state agencies will remain long after this grant is complete.

Given ProvPlan's role as a nonprofit intermediary, the organization has also committed itself to playing a role in LDS sustainability efforts. This includes working with foundations to promote the outcomes and results from LDS work and efforts to link data. The United Way of Rhode Island and the Rhode Island Foundation (the two largest philanthropic entities in the state) have provided resources toward Rhode Island's ongoing LDS development and have pledged their support for future investments. Despite this progress, ongoing efforts are needed to engage other private-sector funders. This includes the Nellie Mae Educational Foundation – a previous supporter of the state's Race to the Top development effort and a major investor in research projects that focus on LDS-

related issues. Another entity is Jobs for the Future – a national nonprofit that is supporting Rhode Island’s participation in the National Fund for Workforce Solutions project.

### **DESCRIPTION OF PARTNERSHIP STRATEGIES**

Among the capacities that Rhode Island brings in its WDQI proposal, the quality of partnerships among the State’s LDS community is one of its strongest. A federal visit on SLDS activities confirmed that Rhode Island is leading the nation in forming the types of inter-governmental and public-private partnerships necessary to create a system that promotes data-driven decisions.

**Partnerships within State Workforce Systems.** RIDLT has many attributes that position the agency to facilitate the types of partnerships needed to both create a longitudinal workforce data system within RIDLT as well as promote data linkages across the P-20W continuum. At the staff level, RIDLT has consistently participated in the Rhode Island SLDS Steering Committee with Marie DeRoche (Coordinator of netWORKri) and Maureen Palumbo (Acting Chief, Statewide Youth Services) representing RIDLT. Meanwhile, WIA Administrator David Tremblay has also been an active participant in several statewide work groups looking at LDS issues. Collectively, this involvement will help ensure that LDS development will occur in a synchronized fashion with other education and human service and health agencies who share a similar commitment to these issues.

In reality, the catalyst for pursuing new partnerships has been driven not only by a desire to reduce redundancy and improve efficiency within government, but by the incredible workforce challenges that exist in Rhode Island. Over the past four years, Rhode Island has lost 39,700 jobs, and the recovery in Rhode Island is projected to be a slow one with economic forecasts showing that the State will not regain those lost jobs until 2021. And given that ARRA resources are coming to an end and that WIA-resource levels have not kept pace with the demand, RIDLT is confronting a looming reality that it must pursue new strategies of doing more with less – an approach that is best accomplished through partnerships and greater collaborations.

Over the past four years, RIDLT has created successful industry partnerships in the key growth sectors– a process that has enabled the agency to enhance its image to industry and labor as an entity

more committed to partnership. Furthermore, both RIDLT and the Governor's Workforce Board, (which functions as the state's Workforce Investment Board under WIA) have each had leadership changes over the past 15 months. These leadership changes have brought a new commitment to seek out partners, while the retention of division directors within the agency means that much of the institutional knowledge needed for effective administration and management remains intact.

From a data warehouse design and linkage perspective, all state workforce data resides under one roof, which will aid the development process during this project. At the same time, RIDLT leadership has recognized the limited capacity that exists internally to create its LDS and seeks to replicate the outcomes that ProvPlan and other agencies have achieved in building these partnerships.

**Partnerships with State Education Agencies.** As highlighted earlier, the Rhode Island Department of Education (RIDE) has a robust longitudinal data system, and RIDLT is poised to leverage the capacity that RIDE gained as well as benefit from the lessons the agency has learned in designing its systems. Current collaboration among the leadership at RIDLT and RIDE is strong with RIDE Commissioner Deborah Gist serving on the Governor's Workforce Board and the agency's Career Pathways System Taskforce. Meanwhile, RIDLT Director Charles Fogarty has a strong awareness of the challenges that exist in Rhode Island's public education system – knowledge that he acquired while serving as the state's Lieutenant Governor from 1999 to 2007. RIDE is a consistent participant in the SLDS Steering Committee - with Andrea Castaneda (Chief of Accelerating School Performance) and Peg Votta (Research Analyst) representing the agency.

Over the past couple of years, RIDE and RIDLT have explored the potential to share education and workforce data, but confidentiality barriers in terms of FERPA and the RI Employment Security Act have significantly limited the ability of either agency to enter into any type of wide-ranging agreement. Opportunities to explore data sharing between RIDLT and RIDE have focused on P-12 data as well as adult education and post-secondary career and technical education services, the latter two being topics where RIDE maintains oversight and management in the state.

Unable to develop a broad-ranging agreement thus far, RIDLT and RIDE have opted to execute small-scale data-sharing agreements with limited scopes. One such agreement was between RIDLT

and RIDE's Office of Middle and High School Reform (November 2009 to October 2011). The purpose of this agreement was to provide RIDE the necessary information to compile the post program data that was required under the Carl D. Perkins, III Act. Here, RIDE data was matched against DLT's wage and employment data. The input file received from RIDE contained customer social security numbers. Two output files were created as a result of the cross match. The first file contained the customer's social security number and an assigned unique identifier. The second file contained the customer's assigned identification number, wages, employer account number, North American Industry Classification System (NAICS) code and year and quarter reported. Per data-sharing protocol, a one-time analysis was performed by RIDLT staff and the aggregate level information was reported to RIDE for the purpose of completing their federal reports.

Another similar agreement was executed between RIDLT and RIDE's Office of Adult Education, covering a three-year period between 2007 and 2010. The purpose of this agreement was to collaborate via a reporting and research project that focused on identifying the employment and earnings of adult education participants and GED test takers in Rhode Island. In this case unique identifiers were not shared but rather RIDLT was able to assign wage information to RIDE records and provide it back to the researchers in de-identified form. Data was then aggregated in order to study and report on the outcomes achieved by the various adult education programs and GED testing centers. While the outcomes associated with each of these data-sharing agreements were achieved, the analysis conducted prompted more questions that could not be answered due to the limited scope of the data and the need to remove PII that might have supported various types of secondary analysis. In an effort to create a more robust data relationship, RIDLT and RIDE have collaborated to identify ProvPlan as a data intermediary for this project – a process described in detail below that will enable these agencies to overcome the obstacles outlined in this application.

**Partnerships with Research Entities.** As indicated in this narrative, RIDLT has selected ProvPlan as its data intermediary (i.e., research entity) that will be engaged to develop a workforce longitudinal data system that can support intra-agency analysis as well as link to other individual-level datasets associated with Rhode Island's overall LDS (education, human services, corrections,

health, etc.). RIDLT's commitment to create this partnership with ProvPlan is outlined in the Statement of Agreement (pages 36-41) and the Letter of Intent located on pages 55-56.

The process of selecting ProvPlan to play this role on behalf of RIDLT began two years ago when RIDLT first learned of ProvPlan's efforts and partnerships to build the *Rhode Island DataHUB*. Based on this work, RIDLT researched and received positive feedback from RIDE, RIOHE, and other agencies about ProvPlan's proven capacity to play such a role. RIDLT has also had several chances to see ProvPlan "in action" through the presentation of data stories and analysis involving linked data. An independently conducted security audit of ProvPlan's IT infrastructure, database architecture, and security protocols commissioned by RIOHE also aided RIDLT in making its decision to forge a partnership with ProvPlan. Given the fact that RIDE and RIOHE have designated ProvPlan as its "authorized representative" under FERPA, RIDLT was confident that ProvPlan would be able to serve as a partner to RIDLT, while ensuring the collection of longitudinal workforce data would continue to adhere to State and Federal confidentiality laws.

In addition to leveraging the relationships that ProvPlan has already forged with other state agencies, RIDLT was equally eager to leverage the existing investments (valued at nearly \$650,000) that ProvPlan has already made in creating the DataHUB and the development of the linkage engine. It is these investments and the resulting infrastructure which will enable RIDLT to maximize the use of WDQI funds to focus on issues related to aligning its own systems and preparing for linkage activities with other agencies.

As outlined in the Letter of Intent, one key variable in designating ProvPlan as the Research Entity for this project is the need for RIDLT to secure legislation from the Rhode Island General Assembly amending the Rhode Island Employment Security Act (RI General Law 28-42-38), which outlines the confidentiality restrictions associated with Wage Record and Unemployment Insurance Benefit data and lists those entities that are eligible to possess such information. Legislation to add ProvPlan to the list of eligible entities under this law will be a priority during the first six months of the WDQI activities and will be a responsibility jointly shared by RIDLT and ProvPlan – with each entity having leadership and networks needed to advance this piece of legislation.

**Partnerships with Other Agencies.** There are three examples highlighted in this application illustrating RIDLT plans for leveraging its existing relationships with other state agencies to link longitudinal workforce data with other individual-level datasets - the RI Department of Corrections, the RI Office of Higher Education, and the RI Department of Human Services. Like its partnership with RIDE, RIDLT has had specific data-sharing agreements with these entities designed to perform small-scale analyses. In each of these instances, RIDHS, RIOHE, and Corrections shared data with RIDLT, allowing RIDLT analysts to perform the analysis and provide de-identified data for the respective agencies. Again, such analysis was useful, but resulted in more questions.

By leveraging the capacity of ProvPlan (an entity which either has or will have data-sharing agreements with all WDQI participating agencies), more robust and longitudinal analysis will become possible. Such examples of analysis include: the degree in which ex-offenders have utilized state agency workforce services including participation in the state's One-Stop centers; the difference in earnings and unemployment rates among those residents who complete two years of community college prior to completing their bachelor's degrees compared to those residents who complete their bachelor's degrees at one of Rhode Island's three public universities; and the before-and-after participation rates in TANF among those residents that participate in either WIA, Wagner-Peyser, and/or Trade Assistance Adjustment workforce programs. Letters of support articulating the commitment from these agencies to participate in this project are on pages 42-46.

### **DESCRIPTION OF DATABASE DESIGN, DATA QUALITY ASSURANCE AND PROPOSED USES**

As highlighted in our Plan Outline section, an initial and key deliverable associated with the WDQI work scope will be the construction of an internal data warehouse that facilitates the creation of a longitudinal workforce data system within RIDLT that will not only support intra-agency analysis but also create numerous opportunities for data linkage across the P-20W continuum.

In assessing its own needs for internal data warehouse capacity, RIDLT recognizes the immediate return on investment associated with building an updated system that will advance the agency's ability to align the disparate data systems that have existed for many years. Such an

outcome will allow RIDLT to understand its own workforce data outcomes better from a policy and operations perspective. In addition, an updated system will facilitate greater data linkage capacity with P-12 data, adult education and CTE data, and higher education data.

In developing the data warehouse, RIDLT will seek to mimic the storage architecture and retrieval systems that RIDE and RIOHE are constructing within their own warehouse build-outs – a process that will result in an integrated store of workforce information (both vertically and horizontally). Through this process, authorized users will gain secure and controlled access to data and information related to the agency’s workforce development services, unemployment insurance data, and workforce regulation and safety information.

In terms of design, the data warehouse storage frameworks will be built around a central client data storehouse that provides an enterprise-wide, client centric view of the “virtual agency”. This storehouse will include client and case data and links to the sources of data in the various operational IT systems. These links and the central data architecture will allow managers to perform online application processing (OLAP) analysis of enterprise-wide data to help determine the outcomes of the services and programs received within RIDLT and its partners.

At the front-end, the data warehouse information storage framework will be invisible to the user but will provide a set of tools and standards used by developers to create the other components of the framework as well as the data warehouse functions. The benefits to the end user will be seen in the robustness and breadth of the capabilities to be found in the data warehouse functions. The key component of the information storage framework will be the database of individual-level records on each client served by the various higher education and workforce entities that feed the data.

The data warehouse access/presentation frameworks will provide a common look and feel, data management, functional navigation, and data integration service components. Each will have a presentation framework in a Web portal shell or electronic Gateway (eGateway) that will allow users to work more effectively and will reduce costs for training and support services. Users will be presented with the eGateway shells from which they can launch, run, view and manage numerous data warehouse components concurrently. The shell will also provide common functionality, such

as navigation and menus that are shared among all respective data warehouse applications. The look and feel of the entire data warehouse (names and color schemes) will be managed in one place for all functions making it a simple matter to integrate the data warehouse with the look and feel of the master design standards. For RIDLT, functional components of the presentation eGateway framework will include: a customizable welcome page; central logon/logoff; launch and close functions; view of active functions; navigation between functions; context specific menus based on user authorization; and a centralized Help facility.

The data warehouse security framework for the system will increase effectiveness by supporting individual privacy rights while allowing access to information for appropriate purposes based on the users “need to know” security profile. Information will be categorized based on how specific to an individual client it is, and organized into “cartridges” according to which unit within RIDLT “owns” it, allowing for fine grained targeting of access permissions to those authorized individuals.

Overall, the base architecture of the data warehouse infrastructures to be built at RIDLT will improve organizational effectiveness by providing a client centric view of the profiles and activities of the respective service recipients. The systems will be designed to support outcomes research to allow policymaking analysis to consider all of the services that clients may receive. The new infrastructures will also support program effectiveness by allowing appropriate RIDLT staff and authorized representatives to monitor all of the activities associated with a particular client across all relevant programs. Of course, each of these data warehouse infrastructures will be designed to effectively stream and link information into the RI DataHUB to support ongoing LDS development along a P-20W continuum. In addition to the building of the data warehouses at RIDLT, the proposed scope of work with regard to this goal will also include a commitment to training and ongoing technical assistance for data warehouse end users – a process that will be led by ProvPlan.

**Personal Identifier.** In the development of the RIDLT Data Warehouse infrastructure, the agency will use Social Security Numbers (SSN) as the primary unique personal identifier to manage data. The use of SSNs within RIDLT’s datasets is common - both in terms of those collected by the agency and by partners who deliver workforce development services. However, given the state’s

interest in linking workforce to education and other administrative data, RIDLT will also need to develop and implement additional personal identifier methodologies in those instances where SSNs cannot be the only matching/link method. While post-secondary education data in Rhode Island contains SSN data, P-12 education data does not, requiring the need for alternative linkage methods.

Similar to past data integration efforts that ProvPlan and other state agencies have used in developing Data Warehouse infrastructure that supports data linking, RIDLT will partner with ProvPlan to use a combined deterministic and probabilistic matching protocol. The deterministic pass will primarily rely on first name, last name, and date of birth. After the deterministic match of individuals is complete, an initial list of orphans (not matched names) will be generated. From there, RIDLT and ProvPlan will use probabilistic matching techniques to improve the overall match/link percentage. These techniques will include a double metaphone converter mechanism (i.e., a phonetic algorithm) to account for common spelling disparities, calculation of frequencies of each value found in the match population for each data field included in the pass, an adjustment to agreement and disagreement weights applied to each data field, and the blocking of certain elements to improve computational speed and efficiency. When all of these steps are complete, RIDLT and ProvPlan will conduct a series of data validation steps, followed by a process to import the data into the RIDLT Data Warehouse system as well as into the Rhode Island DataHUB architecture.

Given the small population of Rhode Island relative to other states (one million), this deterministic and probabilistic matching protocol has been successful in linking education, post-secondary, and health data. As a result, RIDLT will enter this project with a high degree of confidence that strong linkage/match rates among education and workforce data can be established.

**Data Quality Measures.** With regard to Rhode Island's overall LDS development, each agency is responsible for maintaining the quality of the program data in the systems that it operates. Depending on the use of the data, quality can vary greatly. For example, wage and unemployment insurance benefit data tends to be accurate because it often has an economic consequence associated with it. In terms of education data, student transcript information tends to be the most accurate because it is seen by and important to the student. However, when data from these many disparate

systems is merged, data quality issues become more apparent. To address this issue, Rhode Island plans to develop data validation procedures and to create a number of data quality reports.

In working with each agency's data, ProvPlan will provide reports summarizing the number of matches, records with missing data elements, and other pertinent information. Data from ProvPlan's deterministic and probabilistic matching will also identify "near" matches or cases that may be matched if data is corrected. Other edit checks will be run as data is loaded to ensure data in the longitudinal system is of the highest quality.

Additional quality reports will be developed that compare data loads of a source data set against defined periods. For example, data sets that contain race will compare the percentages of races and report on changes of race counts that would indicate missing data or incorrect data. Number of recipients of workforce training will be compared to determine if enrollment has changed significantly. These reports will continue to be refined as data quality issues are identified to provide an ongoing data quality effort that is automated and reduces human efforts to review data quality.

Given that RIDLT oversees 123 WIA development programs via the RI Governor's Workforce Board (which officially functions as the state's Workforce Investment Board) the agency has already identified a need to standardize the collection of individual participant information for workforce programs. As part of the Data Warehouse development procedures, such standards will be developed by a work group that consists of agency staff, community providers and data specialists. Here again, RIDLT will seek to leverage the work that RIDE has done in focusing on data quality.

**Scope of Longitudinal Data.** The WDQI grant will provide funding for the development of an operational data warehouse for RIDLT programs. This Data Warehouse will act as a data source to link with individual records from other programs in the educational and workforce longitudinal data system for analytic and reporting purposes via the DataHUB. It will also act as a repository for outcome measures developed from linkages to other data sources. The data warehouse will include data captured from UI wage records, UI tax records, UI benefits records, Trade Adjustment Assistance, WIA program data, Registered Apprenticeship, and Wagner-Peyser Act.

Standard data fields that will be included in the data warehouse will include name, SSN, date of birth, demographic data, address, wages, NAICS code, etc. In addition, the numerous data fields associated with WIA Standardized Record Data (such as Cost per Participant, Cost per Exiter, Cost per Retained Employment, etc.) will also be included in the Data Warehouse, consistent with the latest data fields requested by DOLETA via its Training and Employment Guidance Letters.

Through the Rhode Island DataHUB, extensive linkages between workforce and educational data will be possible. . ProvPlan has full access to the RIDE Data Warehouse and the DataHUB has 300 K-12 data indicators from RIDE that include student demographics, socio-economic status, absenteeism data, student test assessment data, graduation rates, student perception data, etc. A data-sharing agreement with RIOHE will also allow for linkages with post-secondary enrollment data, including student demographics, course grades, graduation rates, degrees conferred, etc. In the coming months, ProvPlan will also modify its data-sharing agreement with RIDE and execute one with RIDHS so that adult education data and CTE data (via the Carl Perkins program) will be integrated into the DataHUB as will TANF and SNAP data. All of this data will promote robust analysis and an increased cohort of users through Data Stories described on pages 24-25.

**Security Measures.** Rhode Island will take a multi-layered approach to security in order to meet State and federal requirements including CIPSEA and FERPA. Policies and procedures associated with security technologies will be explicitly outlined in each of the data sharing agreements executed for this project. The most fundamental edict in creating Rhode Island's LDS is the fact that each agency that "owns" the data has control over its use and dissemination. Through procedures already in place, RIDLT authorizes the type and level of access by individuals using role based security. In Rhode Island, the Department of Administration's Division of Information Technology (DoIT) acts as an agent of RIDLT in assigning and managing security. RIDLT authorizes access to DoIT staff to provide technical services, but DoIT has no authority to release information on its own.

In the implementation of this project, DoIT's Enterprise IT staff's understanding of the security requirements and data sharing agreements in place will be applied in the design and maintenance of the workforce longitudinal data systems. A number of different technologies will be deployed to

create a comprehensive security strategy. Physical access will be controlled by DoIT and limited to staff who maintain the storage and server environments. Database security at the file, record, and field level will be implemented based on user requirements. Database level access is strictly limited to data warehouse architects and the RIDLT's technical staff. The process of transferring data from RIDLT to ProvPlan will be evaluated as part of the data-sharing agreement design process, with methodologies used by RIDE and RIOHE as likely methodologies.

Within RIDLT's data warehouse infrastructure, federated data marts will be created that will join data from multiple programs to produce longitudinal outcomes. Similar to the DataHUB architecture, data will be joined at the individual level, but tools will enforce role-based security, restricting access to the aggregate level, and business rules will be implemented to limit the lowest aggregate sample that can be viewed without compromising the privacy of the individual.

**Planned Reports/Deliverables.** One of the more unique components of RIDLT's WDQI application and Rhode Island's LDS in general is how the DataHUB has the ability to demonstrate findings, analysis, and presentations through Data Stories. As part of the DataHUB development process in 2009, RIDE became a charter member of the Open Indicators Consortium – a ten-member national collaborative of public agencies and nonprofit organizations working to improve access to more and higher quality data through the development of Weave - a high-performance open source data analysis and visualization software platform. The combination of an ultra-secure DataHUB core backend feature where individual-level data reside and a front-end application platform supported by Weave allows end users to conduct their own data analysis that utilizes individual-level record data. However, no Personally Identifiable Information (PII) data is accessible via the web portal and only aggregate results are available to end users.

In order to make the DataHUB accessible to as many users as possible (not just skilled data analysts), ProvPlan created the concept of a "Data Story" to function as the end product of a DataHUB linkage. Data Stories involve a multi-dimensional inquiry cycle in which a select group of individuals (i.e., the Career Pathways Task Force) collaborate to create a series of interactive graphics (charts and maps) and text that seek to answer an essential question. This process effectively

combines the topical expertise of the work group with the strategic clustering of indicators and other relevant data sets to support the process. In many ways, Data Stories end up becoming a primary vehicle for fulfilling and advancing Rhode Island's LDS agenda. And although the DataHUB is great for analyzing linked data from multiple agencies, the infrastructure is just as popular to state agencies who want to develop visualizations for their own data (without any linkage).

Using a consensus-building approach that enables Work Group members to "roll up their sleeves" and build their own capacity to use data, the ultimate goal of Data Stories is to assemble a well-packaged set of findings, implications, and/or recommendations that can be subsequently presented to policy-making bodies, practitioner communities, or a variety of other stakeholders. Given Rhode Island's commitment to promote users and use of data and information, Data Stories are also designed to operate in a self-guided capacity on the DataHUB website - enabling even the most novice user to receive high-quality data analysis.

The ability to develop Data Stories and make them seamlessly accessible to policymakers and stakeholders was a major factor in RIDLT deciding to partner with ProvPlan as the Research Entity in helping to develop their longitudinal workforce data system. And because ProvPlan is an independent organization which is regarded as "Data Switzerland" in Rhode Island, RIDLT has ultimate control over their data. While RIDLT may not lead the Data Story development process, the agency will always be able to determine what data are used and how. If RIDLT does not approve a Data Story, ProvPlan will not publish it. As part of the WDQI scope, ProvPlan and RIDLT will collaborate to produce at least six Data Stories. This will include a mixture of Stories that involve only RIDLT data indicators as well as Data Stories with cross-agency linked data.

### **STAFFING CAPACITY**

Rhode Island has assembled a team that builds the internal capacity of RIDLT to support its data operations, while contributing meaningful outcomes to the State's LDS that will continue after the project concludes in 2015. As outlined earlier in this narrative and detailed in our budget, RIDLT will hire a contract Project/Data Manager responsible for managing day-to-day WDQI

project operations. The Manager will be located at RIDLT, report to Administrator David Tremblay, and work with the leadership from RIDLT offices including: the Director's Office; Workforce Development Services; Workforce Regulation & Safety/Registered Apprenticeship; Unemployment Insurance, Labor Market Information, and the Department of Administration-Division of Information Technology. The Project/Data Manager will also collaborate with members of the Rhode Island LDS Steering Committee.

Using the goals outlined in our Plan Design, the following is a list of the duties that the Project/Data Manager will be responsible for: 1) collaborate with RIDLT staff throughout the agency to promote the active use of a fully integrated longitudinal data system within the agency, 2) facilitate the linkage of RIDLT data into Rhode Island's overall LDS by managing the work of ProvPlan and other subcontractors hired as part of this project, 3) collaborate with the Rhode Island LDS Steering Committee and leadership from other agencies on ongoing projects related to LDS development as a way to improve overall efficiency and ensure continuity, 4) work with project staff and agency leadership to formulate essential questions and data stories which become the chief products within an LDS that includes workforce data, and 5) resolve conflicts in a timely manner and pursue corrective actions as needed in a way that preserves the deliverables as proposed.

As outlined in our budget narrative, other staff from RIDLT will play critical support roles for the project, which will include managing the expenditure of project funds relative to the budget in conjunction with the RIDLT Business Affairs Office, and serving as the official representative to the federal program officer assigned to this project and completing all reporting procedures.

One of the first and most critical tasks of the Project/Data Manager will be to develop a Project Plan that is thorough and flexible and ensures that the proper levels of planning, control, supervision and support are provided to complete a quality project that is on schedule. An essential purpose of the Project Plan is to compare anticipated workflows and the pace of project spending relative to the proposed budget. As a way of ensuring that the Project Plan becomes a living document that truly serves as a guide throughout the three-year project, the Project/Data Manager will upload the Project Plan into Basecamp – a cross-platform, web-based project management tool

that includes to-do lists, milestone management, file sharing, time tracking, and a messaging system.

From a qualifications perspective, the Project/Data Manager will possess a blend of technical and management skills. From a technical perspective, this will include a strong working knowledge of information technology infrastructure, specific software environments, and data warehousing principles as well as experience with database design techniques, data linkage practices, application development standards, and a working knowledge of security protocols associated with web-based portal applications. From a project management perspective, the Project/Data Manager will need to have strong leadership skills; the capacity to make sound, well-informed, and objective decisions; the experience to adapt to new information or unexpected obstacles to the project; the ability to develop effective relationships with partners; and the acumen to function within RIDLT's organizational culture. RIDLT will select the Project/Data Manager through a competitive process in conjunction with state procurement procedures, which will include using the State's Master Purchase Agreement process. A draft job description for the Project/Data Manager position is located on pages 59-60.

Working closely with the Project/Data Manager will be a trio of staff from ProvPlan, including the DataHUB Coordinator, DataHUB Programmer, and DataHUB Data and Policy Analyst. As noted in the Statement of Agreement, two state agencies (RIDE and RIOHE) already have existing contractual relationship with ProvPlan, and their role as a sole source provider to the State of Rhode Island for LDS activities has previously been approved by the State Purchasing Division.

As DataHUB Coordinator and project lead for ProvPlan, Rebecca Lee will oversee and manage data integration activities, the facilitation of work groups, and the production of Data Stories. Ms. Lee is ProvPlan's administrative database expert with a wide breadth of experience in managing large and complex datasets from state agencies and other sources. She is adept and efficient at cleaning datasets delivered to ProvPlan, has rigorous processes for linking data across multiple databases, and is able to transform this information into reports, charts, and other visualizations for clients. Ms. Lee has led the development of the Rhode Island DataHUB since its inception in 2009 and has been with ProvPlan since 2006. She holds a Master's Degree in Public Policy from Brown University.

Ms. Lee will supervise the work of other ProvPlan staff members that will work on the project,

which include Angel Medrano and Nikki Churchwell. As the DataHUB Programmer, Mr. Medrano will manage all of the query logic and database coding associated with the integration of all workforce data into Rhode Island's LDS. This will also include enhancing the functionality of the DataHUB so that particular visualizations and analysis associated with workforce data will be available. Mr. Medrano is ProvPlan's lead in-house database programmer, and he brings enormous technical capacity to the project with programming, database design, and web development skills. Mr. Medrano's direct experience with a variety of programming languages (PHP, MySQL, Python) and frameworks (Django, Drupal) will support the integration of workforce data into the LDS.

As DataHUB Policy and Data Analyst, Nikki Churchwell will be involved in data preparation and integration activities as well as the production of data stories. She will also be involved in training RIDLT staff in using the DataHUB as a tool to support agency decision making. As a key staff person in integrating post-secondary education into the Rhode Island DataHUB, Ms. Churchwell has the breadth and depth of experience needed to collaborate with RIDLT to both help the agency develop its own longitudinal workforce data system as well as prepare for its transfer into the DataHUB. Ms. Churchwell holds a Master's in Education Policy from Brown University.

A third and critical component to our staffing plan includes having a Research Technician from the RIDLT LMI Division participate directly in WDQI activities. LMI Division employees are responsible for the data collection and analysis of the federal-state cooperative statistical programs. As a result, this Research Technician (to be identified upon notice of award) will handle the day-to-day responsibility of working with the WDQI Project/Data manager and ProvPlan DataHUB staff. Key tasks of the Research Technician will include: processing data requests; conducting in-depth data analysis; developing and preparing standard reports; responding to requests for additional research papers; and reporting on workforce and education issues and trends as requested by internal and external entities. In addition, the Research Technician will not only provide data analysis for the project but also play a key role in helping to build the internal capacity of RIDLT to breakdown internal data silos that inhibit agency cross-program analysis.

In assembling this project team, RIDLT has taken great care to assure that all project staff and

partners will have the necessary credentials to comply with State and Federal confidentiality laws. As Bureau of Labor Statistics (BLS) agents, RIDLT staff that will work on this project (Research Technician and Project/Data Manger) will be covered by the Confidential Information Protection and Statistical Efficiency Act of 2002. BLS requires all of its agents to complete an annual confidentiality training in order to retain their rights to work with confidential information, and this training will include the individuals identified in this narrative.

Given its access to individual-level record data, ProvPlan has also gone through a rigorous process to complete confidentiality training and have its staff execute requisite confidentiality agreements. These documents have been reviewed by the General Counsels of both RIDE and RIOHE as a condition of executing data-sharing agreements. In completing this process, each agency has identified ProvPlan as an authorized representative under FERPA, which provides access to PII data for the purpose of conducting research and evaluation. As highlighted in the project narrative, RIDLT will be collaborating with ProvPlan to have the state Employment Security Act amended so that ProvPlan will be able to gain access to individual wage and unemployment benefit data. In doing so, legal staff from RIDLT and ProvPlan will determine what additional procedures will be necessary to have ProvPlan staff gain access to data.

As outlined in this section, both the Project/Data Manager and Research Technician will be employees of the RIDLT, while the DataHUB staff will be employees of ProvPlan. Levels of effort during the project as well as compensation levels are presented in our budget on pages 31-34.

### **BONUS POINTS – OTHER DATA LINKAGES**

As reflected in this narrative and presented in our Statement of Agreement (pages 36-41), RIDLT has a concrete plan to include adult education and career and technical education (CTE) data in the longitudinal data system that will be fully developed as a result of this project. This will be achieved by having RIDE (the entity which has jurisdiction over adult education and CTE programs in Rhode Island) amend its existing data-sharing agreement with ProvPlan to include this data, which will then be linked to RIDLT workforce data via ProvPlan's Rhode Island DataHUB.

Longitudinal data stakeholders in Rhode Island have recognized that the population of adult learners represents one of the single largest missing components in the State's LDS. Each year, an estimated 9,000 Rhode Islanders participate in adult education classes and postsecondary CTE programs – a number that closely mirrors the number of in-state students at the University of Rhode Island (the state's largest 4-year institute of higher education). Despite these participation levels and the fact that a majority of participants in these programs are native-born Rhode Islanders who can be linked to student records and workforce data, Rhode Island has not yet integrated this data.

Having a greater understanding of the pre and post education and employment outcomes associated with residents participating in adult education, CTE, and WIA-funded workforce development programs will strengthen the State's capacity in numerous areas. These include the capacity to examine the efficiency of adult education and workforce program operations, the ability to develop and evaluate new models of program service that leverage technology-based learning approaches, and the opportunity to make meaningful policy and operational changes that will improve the education and employment trajectories of residents.

RIDE has jurisdiction over the 36 publicly-funded adult education and the 18 occupational-oriented CTE programs in the State via its Office of Multiple Pathways. Presently, the adult education (which includes GED) and CTE programs all maintain their own data systems. The data gathered in these programs are collected primarily to satisfy compliance and reporting requirements. In recent years, RIDE and RIDLT have piloted small data exchanges among participants, but this project will represent the first comprehensive effort to integrate these data sources into the LDS.

In addition to the adult education and CTE data, our project will also include a linkage of TANF and SNAP data (from RIDHS) with longitudinal workforce data from RIDLT. The commitment for this data linkage is outlined in the Statement of Agreement as well as in RIDHS's Letter of Intent to enter into a data-sharing agreement with ProvPlan specific to this WDQI scope of work.

Overall, RIDLT is both excited and motivated by the opportunities outlined in this application and looks forward to partnering with DOL in the implementation of these activities.