

*Montana SLDS*  
*Sustainability Plan*



Prepared by

*Montana SLDS*

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## INTRODUCTION

The State of Montana has received four Statewide Longitudinal Data System (SLDS) grants from the Institutes of Education Sciences, US Department of Education. In 2009, the need at the Montana Office of Public Instruction (OPI) was to turn spreadsheets into relational databases accessible anywhere within the agency. For data standardization purposes the first data



warehouse was created using this 2009 SLDS grant. The 2012 grant sought to link the new data warehouse with university system data from the Office of the Commissioner of Higher Education (OCHE) to streamline reporting and K-20 research. Continuing with the research and evaluation theme, the 2015 grant promoted data use in higher education and among K12 school administrators and teachers. The Montana SLDS sponsored research at Montana State University and assisted research in universities throughout the United States. Furthermore, preservice teacher training about the Growth and Enhancement of Montana Students data warehouse (GEMS) was robust, with efforts on reaching a broader segment of the teaching population. The user base of GEMS and the OPI's online website that provides public and private access to data in the data warehouse, has expanded to 750 school administrator users and thousands of public users. The priority for this grant was increasing SLDS data use by the OPI, researchers, and schools.

In 2019, the OPI received its fourth SLDS grant, which revisits and reinforces much of the work completed through the previous three grants. The main initiative of the grant is to rebuild the OPI's data warehouse so that it is CEDS aligned and outdated technology could be replaced. Design flaws during the 2009 grant, expansion of the data contained within the warehouse, and the inevitable evolution of technology have all impacted the sustainability of the OPI's systems. With the help of the grant over the next 4 years (end date February 2025) the agency will reconfigure the data warehouse, standardize additional elements, and ensure interoperability of data processes. This most recent grant will also fund an expanded data sharing relationship with OCHE and bring more data elements into the system, specifically post-secondary graduation data and new CTE data points. The 2019 grant will also fund a new data linkage with the Montana Department of Labor and Industry, bringing wage and industry data to the OPI for the first time. Previous legislation prevented this sharing, but due to changes made by Montana's 2023 legislature (HB 949), this expanded prospects for data sharing. Having this linkage will enable new areas of research, adding to the OPI's enhanced analytics capacity that grew from the data linkage with OCHE.

In 2019 the OPI received a FY2015 Supplemental Grant. The resources funded a reconfiguration of the public facing website through which we provide data to schools and the community. The modernization work replaced outdated and unsupported technology, moving over 87 different reports to Power BI dashboards, and enhancing search and visualization functionalities. The OPI



launched the new application to our K12 users, with a special focus on public uses of the data. This allows parents, press, legislators, and teachers to get more use out of GEMS resources than they have had in the past. The OPI will ramp up our efforts to promote data use among these communities' using GEMS as the tool from which to promote data driven decision making. We have paid keen attention to addressing the needs of our various audiences, making the tool consumer driven.

In 2021, the OPI received a National Center for Education Research grant which was designed to promote the research capacity of participating SLDS. With the help of research partners from



Montana State University, our team conducted research into the Early Warning System (EWS), a tool integral to GEMS. The tasks for this work fall into three areas: understanding the effectiveness of the Early Warning System, understanding the dissemination of the EWS, and understanding the impact of the SLDS on different subgroups and the college going population. There is an important element of capacity building in the grant with tasks designed for the sustainability of research activities within the agency.

Sustaining Montana's SLDS is important for OPI since it is difficult to take away a resource from the public and school administrator users after they have had access to it for well over a decade. Sustaining the SLDS means that we meet legislative mandates for transparency. It also serves as an important resource for staff members throughout the agency as they refer people to GEMS content. GEMS is important to other agencies besides OPI, OCHE, and the Department of Labor and Industry. Regularly, state agencies seek access to data from the SLDS warehouse. Moreover, without the data warehouse, data and data reporting would be compartmentalized between divisions at OPI. Without the public facing website, the burden of providing timely, accurate, and transparent data would fall to different divisions within the agency, which would overburden their small staff and would decentralize a process whose centralization provides consistency and equity in access.

Moving forward, the Montana SLDS program during its fourth grant period has three goals that involve the following activities: revitalization of the data warehouse and website, data linkages with the Montana Department of Labor and Industry and Tribal Colleges, and sustainability of the programs activities throughout the grant period and beyond. In addition, the OPI received a Supplemental grant for the investigation of the data use and research application of the School Level Poverty Measures. The 2021 Using SLDS National Center for Education Research grant added an additional component that enhanced the relevance of SLDS data to the state agency: promoting internal research capacity.

**Goal #1: Rebuild the OPI's data warehouse on the CEDS structure to improve data collection, warehousing, and reporting.**



A decade into our SLDS undertaking in Montana, we have a robust K-20 data warehouse, an excellent reputation amongst our users, and support from leadership, partner agencies, and policymakers. Despite these indicators of strength, our data warehouse is at the end of its technological lifecycle. We have reached a stage where it is no longer economically feasible, nor do we have the staffing capacity to continue trying to repair what needs replacement. Through a supplemental SLDS grant for FY2015, rebuilt our user interface- GEMS. We anticipate that these changes with GEMS will need to be sustained over the long term (beyond the grant period). Our schools have limited resources as well and rely on us to streamline their data submissions, and return data to them in an accurate, timely, and usable manner.



## **Goal # 2: Establish new data linkages and build data-use capacity**

Our new data linkages include access labor and tribal college data. Expansion of our SLDS to include workforce data, however, is not only feasible but critical. Montana has proven its capability to establish and maintain effective data linkages with the Montana University System; however, our tribal colleges do not fall within the Montana University System. Including them will ensure that we are as inclusive as possible, that we are able to provide predictive analytics tools for all schools, and most importantly, that we keep pace with the needs of our users.

Failure to make the linkage to data from the Department of Labor and Industry would mean that Montana will continue to fall behind states that are able to understand the complete picture of how well prepared our students are and how that translates beyond education and into the



workforce. Our state legislature recognized the importance of this linkage through the creation of the Education and the Workforce Data Governing Board. Additionally, data linkages with the Department of Labor and Industry are part of our agencies strategic objectives.

The OPI is initiating relationship building and engaging in data use pilot cases with the tribal schools, particularly with

our EWS tool so we may begin to fill these gaps in support to our tribal communities. We are also able to engage with the tribal colleges to understand their data needs, our efforts to increase that capacity, and research questions regarding K-12 level data from the communities that surround the tribal colleges. Because they do not have the same direct connection with the OPI that the MUS does, this will take time and resources.

Failure to build the relationships and illustrate the value of a data linkage with tribal colleges would mean that we continue to have an information gap in American Indian achievement data in the state. Tribal colleges have expressed interest in seeing our data in action and engaging in

pilot projects to explore data sharing feasibility, especially where data needs challenge current capacity such as with the data sharing with the American Indian Higher Education Consortium.

### **Goal # 3: Update and enhance the sustainability of GEMS data warehouse, linkages, and relationships**

As the current structure of our SLDS approaches the end of its lifecycle, sustainability is at the heart of the expansion at the OPI. Without sustainability, all other goals are for naught.

Montana's first education data warehouse has become a vital tool for individuals internal and external to the agency. Our internal analysts rely on the data warehouse front and back end to access data for planning, reporting, and operations. Our schools and districts use the warehouse user interface GEMS for the data they need on their districts and statewide comparison dashboards. GEMS is where they access predictive tools, such as our Early Warning System, that they utilize to inform decisions at the student, school, and district level. Our SLDS is not only mandated to exist in Montana law, but it has also become the integral source for education data across the state. Section 4.2 of Senate Bill 329 states that: OPI must develop a publicly available data system that displays an educational data profile for each school district.

Sustainability not only points to the future of the Montana SLDS, but it also addresses areas in which the SLDS can be useful for high level policy makers who make the final decision of the direction of the SLDS. The Montana SLDS is a grant funded unit whose operations have gradually shifted to other units of the OPI. This means part of the maintenance of the GEMS portal is managed by our IT department who provides in kind contribution to the SLDS project. Meeting agency and legislative priorities is the primary component to the future of the Montana SLDS. Like we do now, state contributions such as the technology involved and the data governance needed to make the project run will be combined with soft monies such as federal grants that will provide us the needed foundation to revitalize the SLDS project, such as is occurring with the infrastructure goals of the current MITI grant.

### **School Level Poverty Measures**

The National Center for Education Statistics launched a supplemental grant program for 2019 grantees to investigate the uses of school level poverty measures in their state. Montana focused



on the core activities of this use including geolocation of student addresses to generate school neighborhood estimates. The Montana SLDS further investigated the use of the school level poverty measures in applied research. In doing so, the Montana SLDS completed four studies about poverty measures. The Montana SLDS focused on state level trends, trends disaggregated by locale, trends involving student groups in rural communities, and potential uses of direct certification as an alternative poverty measures when applied to

the case of Montana. Three publications have resulted from this analysis, including articles in Rural Education, International Journal of Education Policy and Leadership, and the Policy & Practice Magazine. Future direction of this research includes a 2025 grant application to the National Center for Education Research which focuses on analysis of the economic disadvantaged subgroup.

## **2021 NCER Using SLDS for State Policy Making Grant**

The Montana SLDS coordinated evaluation activities of the Montana Early Warning System; a



dropout prevention tool based on predictive analytics. This analysis focuses on three research questions which analyzed the accuracy of the system, patterns in its implementation, and the impact that this dropout prevention tool had on subgroups, including the economic disadvantaged subgroup

(which is the largest subgroup in Montana). This study found that the tool is highly accurate, high adopters who engaged the tool often experienced success, and trends among all subgroups were strong both with the response of schools and its impact on students. These findings were published in the AASA Journal of Scholarship & Practice and the American School Board Journal. The most important part of this grant has been developing the capacity of the Montana SLDS to execute research projects with academic partners. Since 2017, Montana SLDS has assisted 15 research projects with academic partners and led the Early Warning System evaluation. Research tasks conducted in-house at the request of leadership include educator retention, salaries, and student academic achievement.

## **DEMONSTRATION OF VALUE**



The Montana SLDS and the GEMS web portal have become institutionalized in the daily work of the OPI. GEMS serves three purposes. GEMS allows for transparent access to timely data for the public and important user groups, such as the press and legislative staff. GEMS is the source for reports on data from every division at OPI and provides access across agencies to higher education reports like the Montana Student Campus Feeder reports, that provides access to data on where high school graduates access higher education opportunities within the Montana University System (MUS). GEMS offer a broad array of services that fulfills the Montana Legislature's 2011 mandate (Montana Code Annotated 20-7-103 and 104) to provide the public with timely and accessible access to education data.

GEMS also fulfills an important function for districts when the OPI utilizes GEMS to release data back to the districts in ways that are longitudinal and comparative. One example of this is the enrollment numbers from the October count are released in January of the following year. School administrators pay keen attention to the enrollment numbers as the Average Number Belonging (ANB) calculation goes into funding decisions by state and federal sources. Within most of its data domains, GEMS offers access to data back to 2011, with some data elements available as far back as 2007 when the unique student identifier was instituted. Administrators access the GEMS secure portal that allows them to see disaggregated data in addition to the publicly available aggregate data. It also serves a valuable purpose for administrators who often refer school boards, teachers, and parents to the site to reference specific data points. GEMS is a key resource for school leaders needing self-service data access in their grant writing activities and reporting to the federal government.

GEMS is also the data warehouse of the SLDS. The data warehouse contains all the data that is used to run the public website. GEMS has six OPI analysts who query data tables every day. The agency seeks to make it ubiquitous among OPI users with the FY2019 grant. Instead of being siloed within every unit's favorite database; a CEDS structured data warehouse will integrate new systems while maintaining ownership by specialists. One specific use of GEMS is fulfillment of data requests. OPI receives hundreds of data requests annually. Often these data requests can be resolved using stored procedures and standardized queries, saving time for the analysts responsible for fulfilling the request and for quality assurance. Analysts also take care to advertise the uses of GEMS to each requestor in case they have further questions.

Another way to view value is through the rate of return on the SLDS investment. There are several returns on investment opportunities that OPI has identified because of the SLDS project.

- Access for LEAs to student FAFSA completion information, including error reporting.
- Complement the work of OCHE in compiling data about Montana Tribal Colleges.
- Coordinating feedback on individual student dropout probabilities to LEAs.
- Eliminating the need for OCHE to produce PDF high school feedback reports. This data is not found elsewhere.
- Facilitate the matching of workforce data to K12 student records.
- Fostering opportunities for LEAs to better report data and engage in grant writing.
- Guidance to the Striving Reader program, Montana Digital Academy, and Carroll College as to evaluation goals.
- Improved access to predictive analytics tools such as EWS.



- Increase the availability of real time data analysis for districts that have never had that opportunity
- Increased transparency about student and school success
- Meeting legislative reporting mandates, such as established by the Education Workforce Governing Board.
- Platform for OPI Divisions to post data relevant to their constituencies, something they may not have access to elsewhere. Examples include posting of assessment data.
- Provide access to longitudinal data to LEAs that may not be in their student information systems.
- Providing a mechanism for team building between state government, districts, and higher education institutions
- Reducing the amount of time, the OPI must spend on data requests from LEAs and the public, legislators, divisions within OPI, other state agencies, researchers, and the press.
- Sole source for the comparison of education data between LEAs, particularly achievement data.
- Support for targeted research activities, such as studies on educator retention and salaries
- Transparent access to school finance data which is not hosted elsewhere.

## STAKEHOLDER SUPPORT

Involving stakeholders in grant-related activities began early in the 2009 grant application and has continued to evolve since that time. SLDS stakeholders include LEAs, universities, DLI, OCHE and the OPI. Hundreds of administrators and school counselors have access to our secure website for confidential student level information. In March of 2019 we surveyed 78 users of the secure website. Findings from the survey included information that informed the work of the 2015 supplemental grant which rebuilt GEMS. During our 2015 grant application period we sponsored research at Montana State University and sponsored activities that created a curriculum on GEMS data use. We also facilitated research in eight other universities and colleges in Montana. We also maintain the data linkage with OCHE, which was established in earlier phases of SLDS work at the OPI. Each division at the OPI also has input into how their data is used and presented on GEMS.

### Conference trainings





Members of the OPI SLDS team conduct several training courses throughout each year to improve stakeholder knowledge of the SLDS and gain more buy-in. The team also provides important training to the SLDS community about our program, the GEMS web portal, and associated research and analytics activities. These conferences and presentations include:

- Montana Assist Conference (data and assessment)
- Montana Association of School Business Officials
- Montana Council of the Deans of Education
- Montana Post-Secondary Opportunities Council Annual Meeting – targets college recruitment specialists
- NCES STATS DC Conference
- SLDS Best Practices Conference
- NCER annual Principal Investigators meeting
- OPI Summer Institute
- SLDS Webinars

### **Legislative Outreach**

We continue to foster relations with the state legislature. The base of support from the legislature came in 2015 with the continued funding of three SLDS positions from the General Fund. This legislature also mandated data reporting on GEMS for purposes of public consumption. Regularly, and more frequently during legislative sessions, legislative staff reach out for the reporting that GEMS has to offer. They are also an important source of our data requests.

### **A Sound Base for Progress**

A major factor that has helped engage more stakeholders in the Montana SLDS system has been the continued improvement of existing reports and the production of new dynamic reports. Through the addition of the post-secondary data into the system, OPI was able to take over the responsibility of high school feedback reporting from the higher education system in Montana. Not only has this eased the reporting burden for OCHE, but it has also allowed OPI to improve upon these reports and create new feedback reports at the request of LEA stakeholders. OPI has also entered another data sharing agreement with OCHE that allows OCHE to pass individual

student progress on completion of the Free Application for Federal Student Aid (FAFAS) to OPI to produce a FAFSA completion report in our SLDS.

Stakeholder input has been valuable in our sustainability efforts. The 2019 administrator survey discussed areas beyond the GEMS rebuild to address including issues such as training on the uses of GEMS and data-driven decision making. Our university colleagues that created the GEMS data use curriculum had valuable insight on how to improve GEMS and foster teacher training opportunities. We also gain feedback. We solicit feedback from conference panels and presentations that give us valuable insight into what we are doing right and our areas of improvement. Finally, input from within the OPI is especially important- specifically from the Data and Technology Division and executive leadership.

### **Ensuring Widespread Use**

We track users through analytics and through the number of logins from our secure user base. For example, our 2017-2019 marketing campaign generated 4 million impressions on Facebook and Instagram with a click through rate of 1% meaning that 40,000 views were generated from the marketing alone. We have a committed group of core users that view both public and secure profiles. Our goal is to see that these users return to GEMS to satisfy their data needs. To facilitate this, we support our user base with online trainings as to the use of GEMS, the curriculum that was created for data use, a user manual that describes functions, and dynamic data definitions and explanations that allow users to better understand the data they are accessing.

### **Opening the Door for Research and Evaluation**

The Montana SLDS supports internal and external research stakeholders through its data request process. Annually, the Montana SLDS processes 130 data requests, approximately 70% are from researchers throughout the United States. On average, five of these requests require student level data and ongoing support from the Montana SLDS to address emerging data needs.

The Montana SLDS is also responsive to external contracts. Beginning in 2017, the Montana SLDS supported a contract with Montana State University that sponsored six research projects. Moreover, the evaluation of the Montana SLDS was co-developed with an external evaluator such that the Montana SLDS conserved resources and executed primary data collection tasks, allowing the external contractor to do what they do best – analysis and reporting activities.

The research connections came to fruition under a National Center for Education Research grant to investigate the Montana Early Warning System (2021). The Montana SLDS lead research activities of the grant, in collaboration with the Department of Agricultural Economics and Economics at Montana State University.

# CAPACITY AND RESOURCES

## Procedures

All agreements that the SLDS enters are approved and monitored by the OPI Chief Legal Counsel and the OPI Chief Information Officer. Going forward, the Data and Technology Division (where the MT SLDS team is housed) will use the same agreements and seek approval by the Chief Legal Counsel. Under the governance of the Education and the Workforce Governing Board, OPI will negotiate further linkages with the Montana University System and the Department of Labor and Industry. We have begun an MOU process outlining data sharing and collaboration with Montana's tribal colleges. We have dozens of data sharing agreements with school districts, particularly with the Early Warning System initiative, which uses additional student data beyond data in the SLDS. Monitoring of these agreements is projected to be maintained by the Data and Technology Division.

**Table 1: Governance Agreements and Plans**

Process	Who created the process?	Who maintains the process currently?	Who could maintain the process moving forward?
Memoranda of Understanding (MOUs)	SLDS program on behalf of OPI in 2012	Education and the Workforce Governing Board, Department of Labor and Industry, Office of the Commissioner of Higher Education, OPI Legal Counsel	Montana SLDS, Data and Technology Division (OPI), OPI Legal Counsel
Data Sharing Agreements	SLDS program on behalf of OPI since 2012	SLDS program, OPI Legal Counsel	Montana SLDS, Data and Technology Division (OPI), OPI Legal Counsel
Data Governance Plan	Executive leadership group	Data governance body	Data governance body

There are many processes that impact sustainability. These processes are with personnel and technology. The MT SLDS has refined onboarding processes for new employees. It is expected of all employees that they document essential work and cross train other staff members on essential tasks. Technological challenges include projections beyond the 2023 grant period of how much technical support will be needed to sustain the SLDS. Currently, the Data and

Technology Division provides extensive in-kind support to the SLDS from ten employees. It is an open question whether we will need this level of support past the data modernization and GEMS data warehouse rebuild.

## **Personnel**

The Program Manager will oversee the project beginning at kickoff; develop project plans and timelines; help with the development, scoring, and negotiation of all RFPs as well as contract management and negotiations. The program manager will lead the OPI internal project team and report on the project to US-ED.

The Database Administrator is the coordinator of the maintenance of the data warehouse and of GEMS. In doing so, the position manages data loads, creates new reports using Power BI and SSRS technology, and monitors the database for updates. This position is funded through a State General Fund allocation provided to the OPI.

Two Research Analysts will provide data analysis and validation of the combined data from the OPI, OCHE and the Department of Labor and Industry (DLI); work with stakeholders including OPI staff, LEA's, and units of the university system and DLI to analyze the data and develop and produce reports to display in GEMS, our SLDS using Power BI.

## **Hardware and Software**

We will need to periodically upgrade software, modules, and add-ons being used in the upgrade process for our SLDS with a total estimated cost of \$21,000.

## **Potential Funding Sources and Approaches**

Financial support is a major priority for the sustainability of the Montana SLDS project. Through continued outreach to the legislature as well as engagement of other stakeholder groups, the Montana SLDS is confident that financial support will continue to be provided if the SLDS can continue to demonstrate its need as a resource for users at the agency, school, and external stakeholder level.

## **State Legislature**

Due to active engagement with state legislators and their teams, as well as the numerous data requests answered with the SLDS presentations to legislators, aides, and committees, the legislature granted OPI three general-funded positions with the Montana general fund in 2015. This financial support provided by the legislature is integral to the sustainability of the SLDS. These positions will continue to fully support the SLDS as it evolves in Montana.

## **Agency Support**

The staff at OPI and OCHE also continue to provide support to ongoing SLDS efforts because of the usefulness of the system. Leadership within the OPI has a proven track record of supporting the system and will continue to do so to assist OPI as an agency to provide data related to the new federal reporting requirements from Every Child Succeeds Act (ESSA). Many of these data elements have been made available to OPI due to the SLDS grants.

## Continued Federal Funding

OPI was successful in applying for the FY 2019 SLDS grant. While this grant was not used to directly support the past efforts of the FY 09, FY 12, and FY 15 grants, our efforts to modernize the data warehouse and promote data linkages complement the work of our entire SLDS program. Through OPI's partnerships with research faculty, we completed the work of NCER Research Grant. We also anticipate that we be successful with other grant applications in coordination with these partners. We have applied for a 2025 'Using SLDS' research grant in August 2024. Through OPI's data linkage efforts with the Department of Labor and Industry, the agency also may also have an opportunity to be engaged in a WDQI grant.

## Private Foundations

Beyond the federal grants we have successfully secured, the OPI also seeks to pursue funding from private sources in the field of education and grant makers that focus on Montana, rural areas, or Tribal affairs.

**Table 3 Potential Funding Sources**

Source	Considerations, Relevant Policy Question(s)	Potential Opportunities	Interest Areas
<b>Federal</b>			
Workforce Data Quality Initiative (WDQI) Grant Program	How well are graduates prepared for entering and advancing in the workforce?	Future grant round	Employment, workforce outcomes, labor force
National Center for Education Research	Impact on students of educator turnover.	Feb 2025	Achievement, economic disadvantage, educators
<b>State</b>			

Source	Considerations, Relevant Policy Question(s)	Potential Opportunities	Interest Areas
Montana State Legislature	What is the state's return on investment for different education programs and the effort to make education data transparent?	Biannual budget	Economic development, higher education affordability, data use, government transparency.
Montana Office of Public Instruction	How many high school graduates enroll in postsecondary education?	Agency budget, In kind support	Graduation and dropout rates, postsecondary enrollment, remedial or developmental education rates.
Office of the Commissioner of Higher Education	Are colleges preparing graduates for available careers?	Agency budget, in kind support	Retention and graduation, postsecondary return on investment
<b>Private</b>			
Overdeck Foundation	How may GEMS be used to boost transparency of district and state processes?	Multi-year grant	Data for Action, Transparency in Government, Enacting Meaningful Change at the School Level
Lumina Foundation	How prepared are CTE concentrators to enter trade school and the workforce?	Multi-year grant	Community College, College Graduate, Longitudinal tracking of high school to college transitions.

**Table 4: Projected Funding Plan**

SLDS Component	Cost	Potential Funding Source	Outreach Approach
Software	\$21,000	Agency Funds	Executive Leadership Driven
Program Manager	\$108,650	State Legislature NCER Research Grant Funds WDQI Grant	Program and Executive Leadership Driven

SLDS Component	Cost	Potential Funding Source	Outreach Approach
<i>Research Analyst 1</i>	\$90,402	State Legislature NCER Research Grant Funds Overdeck Foundation (Data for Action)	Program and Executive Leadership Driven
<i>Research Analyst 1</i>	\$90,402	State Legislature WDQI Lumina Foundation (K-20 Research)	Program and Executive Leadership Driven
Annual Total	\$310,454		

## NEXT STEPS

We have identified some strengths and priority focus areas as the first step toward implementing our ambitious agenda. The strengths that we can build upon are the fact that our SLDS provides information required by law from our state legislature, we have been able to reach out to legislators in Montana to provide useful information and we have a dedicated staff for the SLDS. Our highest priority areas are to continue to get leadership support, continue to reach out to state lawmakers for support and to continue to receive funding from various sources.

### Data Linkages

Next steps are also predicated by changes to the technological environment of the GEMS platform and the data warehouse, developments with the Education and the Workforce Governance Board, and emerging research needs of the agency. All of these elements were addressed under the 2019 MITI grant including changing the infrastructure of the data warehouse to be based on a Common Education Data Standards environment, data linkages with the Department of Labor and Industry and the Office of the Commissioner of Higher Education, and the research activities that the SLDS has been involved in over the last three years including support to work of contractors, primary data collection for contractors, leadership of research projects, and targeted research tasks that fit agency needs.

Sustainability is intentionally built into the work to be conducted under the FY 2019 SLDS grant. Our current need for a rebuild of the data warehouse results from aging technology and an

expanded vision of the role of the data warehouse and its user interface, GEMS. As determined by the agency's Data Modernization agenda, this will also involve the transformation of the CEDS aligned data warehouse into a Snowflake environment. Moreover, the integration of such Power School tools as Unified Insights which will also transform the public facing GEMS portal will involve ongoing maintenance and support. Much of this work is provided by in kind resources from the Data and Technology division. However, many of the tasks, specifically those tasks that engage the public or focus on data use, will need to be completed by the Montana SLDS team. This involves the ability to access and retrieve data from the new Snowflake environment to meet internal and external stakeholders' needs. Much like in 2009, the current work of restructuring the data warehouse will impact the next ten years of data use at the OPI. Our work now is important as we need to balance current needs with anticipated changes in technology and legislation that may eventually make our system obsolete.

In the 2019 MITI grant application, OPI proposed to develop data linkages to the Department of Labor and Industry and the Office of Commission of Higher Education. Legislators as well say the need to develop K20W linkages. House Bill 949 (2023) created the Education and the Workforce Data Governing Board. The Montana SLDS is in a good position to contribute to this process, whether it's engaging the new Snowflake platform so that it enhances external data sharing between state agencies, or the actual data use involved in the data sharing which may entail collaboration on data, research, and stakeholder request processes.

## **Research Capacity**

The Montana SLDS may also contribute to the research needs of the agency. Given the Montana SLDS exposure to external partners, there are a variety of ways that the unit may contribute to the data needs of the agency. This includes targeted data support for research and evaluation contracts within the agency. This may include data collection and monitoring of research and evaluation contracts that the agency has with outside partners. Two examples of assistance with data collection involve retrieval of data from the new Snowflake platform and primary data collection activities such as coordinating interviews, surveys, and focus groups. By having resources in house to complete these tasks, OPI could lower the cost of research and evaluation contracts since these activities are some of the most expensive tasks of these contracts. The funding model could involve the development of a small research center at



Montana SLDS which is self-sustaining and responsive to agency needs. Montana State University created a research center focused on data collection which supports external contracts throughout the university (H.E.L.P.S. Laboratory).

The Montana SLDS could also provide research services to agency leadership which target emerging data and research needs. This could involve short term needs, such as research about educator salaries in response to the Education Interim Budget Committee, or long-term projects such as the investigation of the impact educator turnover on students. The latter is the topic of a grant application which the Montana SLDS will submit to the National Center for Education Research in August 2024.

By learning from the mistakes of the past we seek to maintain a viable, self-sustaining data team at the OPI. Inability to forecast key programmatic components will impact the sustainability of our projects, such as the limitations of our current data linkages and need for documentation of processes for each position on our team. We anticipate that the prior goals of the SLDS will remain relevant, just as the goals for the current grant period build on progress in the past.

## SIGNATURES



SLDS Program Manager

07-22-2024

Date



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Chief Information Officer - Acting

07-25-2024

Date



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State Superintendent of Public Instruction

07-25-2024

Date

