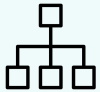
How Much Does It Cost?

An Analysis of Best Practices for Statewide Longitudinal Data Systems (SLDSs)

February 2025

DQC

Executive Summary



GOVERNANCE MODEL

- The **administrative location** of an SLDS within government varies across states
- Independent governance through cross-agency boards **supports collaboration, oversight, and accountability**

FUNDING STRATEGY

- Most states use **blended and braided funding strategies**, leveraging grants for initial setup or major enhancements and state support for ongoing costs
- **Cost recovery programs** offer potential for minor revenue generation, contributing to long-term sustainability

COST CONSIDERATIONS

- Start-up costs vary based on goals and existing data infrastructure, but **maintaining a mature SLDS costs approximately $3 million annually**
- **The main cost driver is personnel,** making up approximately 80-85% of the operating budget of mature systems
- Technology costs are significant during the setup phase, but **ongoing system stack costs range from $60,000 to $175,000 annually when maturity is reached**
- **Centralizing multiple state data functions**, as seen in Kentucky and Washington, can optimize resource allocation and operational efficiency

The four exemplar systems vary in size, maturity, budget, and governance structure

	Kentucky	Maryland	Washington	California
Date Established	2009	2013	2007	2021
Population size	4.51 million	6.16 million	7.78 million	39.03 million
Current Budget (FY 2025)	$3.09 million	$3.06 million	Annual budget is combined with other related OFM functions	$16.00 million (Budget appropriation for operations of C2C)
# of Employees	4 FTEs, 28 contractors (an additional 2 FTEs, 2 contractors support BLS)	15 FTEs, 1 contractor	13 FTEs, 2 contractors	26 FTEs, ~30 contractors
System Platform	SQL, designed and managed in house	Oracle, designed and managed in house	SQL, designed and managed in house	Cloud computing (SaaS, PaaS, and IaaS) designed in house and built in partnership with a contracted System Integrator
Governance Structure	• Independent SLDS with governing board • Attached to labor cabinet	• Independent SLDS with governing board • Administrative services by State Dept. of Education • System hosted by Dept. of Information Technology	• Held within the Office of Financial Management • No governing board, P–20W data contributors' group and research subcommittee	• Held within Gov. Operations with review in 2026, • Governing board and two advisory boards

KENTUCKY CENTER FOR STATISTICS
Uniting our data. Informing our Commonwealth.

MLDS Center
Maryland Longitudinal Data System
Better Data • Informed Choices • Improved Results

ERDC
Education Research & Data Center

CALIFORNIA CRADLE TO CAREER DATA SYSTEM

In collaboration with Data Quality Campaign, Delivery Associates conducted desk research on the costs and key considerations of SLDSs

Purpose

- To gain a detailed understanding of the **setup, management, and cost structure** of SLDSs
- Examine both **initial and ongoing costs**, including funding sources and resource allocation necessary for the development and sustainability of SLDSs
- Address potential challenges like **cost variability**, securing stable funding, and the impact of expanding the system and integrating new technologies

Approach

- Analyzed data from four exemplar SLDSs (California, Maryland, Kentucky, and Washington) to identify common factors for success
- Conducted interviews with representatives from state data systems and agencies
- Collected public data on implementation models and costs through legislative and agency records, third-party research, and official documentation
- Synthesized findings to establish best practices for states developing or managing similar data systems

Four key considerations have the greatest impact on the cost of setting up and maintaining an SLDS

GOVERNANCE MODEL

Effective governance structures directly impact the financial sustainability and success of SLDSs by ensuring strategic oversight, cross-agency collaboration, and legislative support

FUNDING STRATEGY

Exemplar states leverage multiple funding sources (e.g., federal grants, state budget allocations) and align their financial strategy with their organizational structure to ensure long-term viability

PERSONNEL

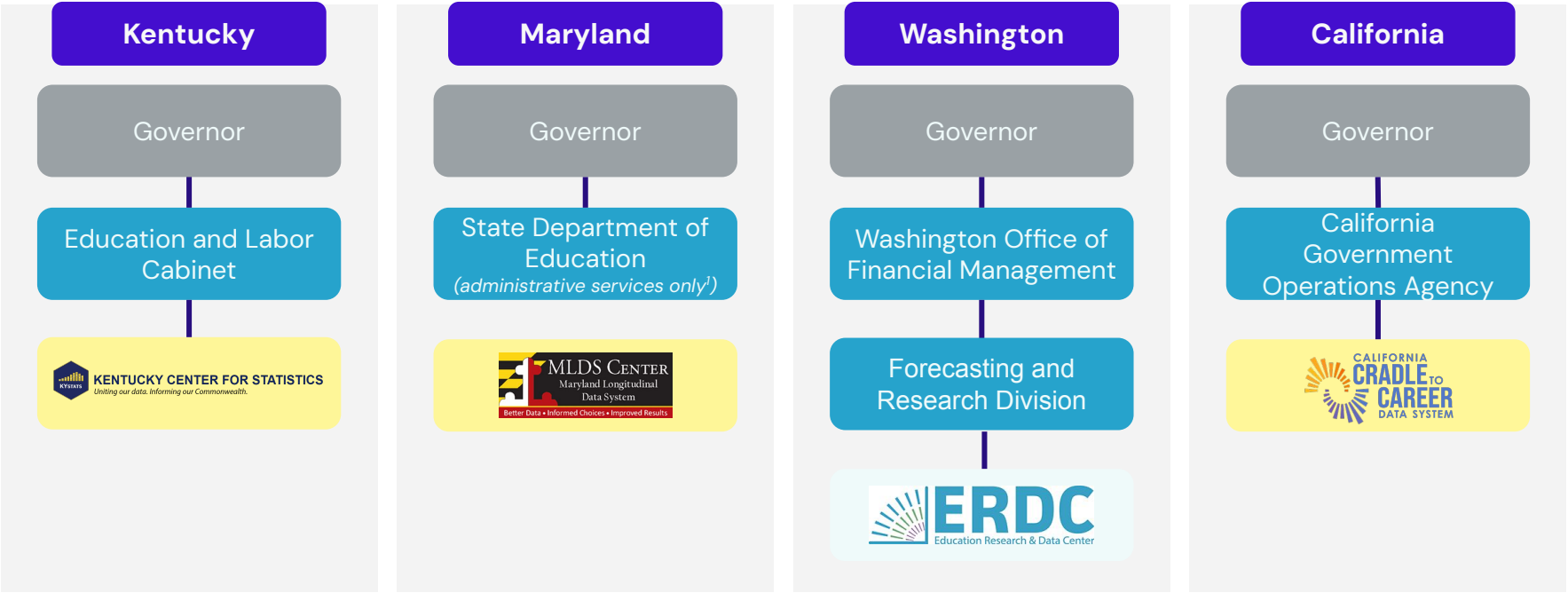
Acknowledging opportunities and constraints when hiring in-house personnel and contractors can greatly influence long-term operating costs

SYSTEM STACK

The underlying technology serves as the foundation of the SLDS, influencing all other components, including scalability, maintenance, and overall costs

Governance Model

While there's no one right place for an SLDS to sit within government, most systems are administratively attached to an agency and independently governed



1. The Maryland State Department of Education provides resources for budget, procurement, and personnel management

Independently governed by a cross-agency board

Funding Strategy

The funding strategies for exemplar systems range from reliant on federal grant funds to fully state-funded

Fully Grant-Funded ⟷ **Fully State-Funded**

Grant-First Model

- **Startup & Expansion:** Kentucky initially relied fully on federal funding to establish and expand the SLDS
- **Risk Management:** To avoid dependency on federal funds, leaders demonstrated system value to gain legislative support, which led to state budget inclusion as federal grants expired
- **Impact on Personnel:** KYSTATS relies on contracted staff, allowing flexibility when funding fluctuates

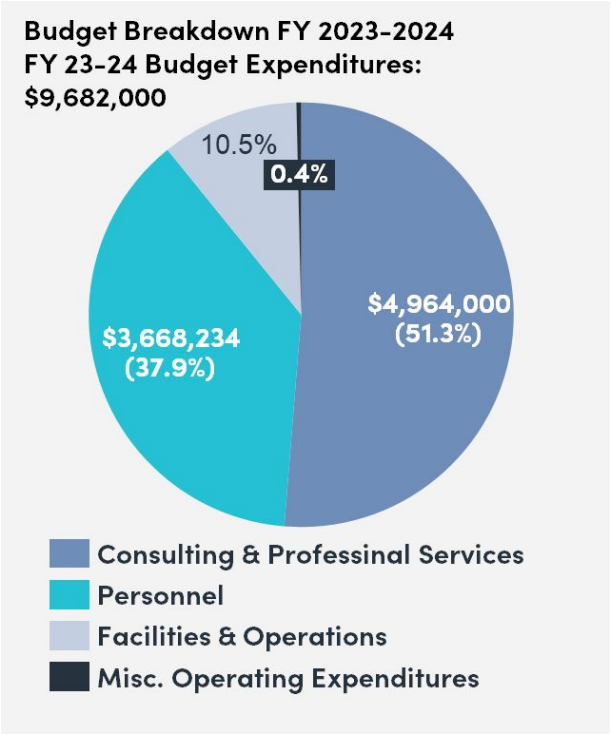
Hybrid Funding Approach

- **Planning & Setup:** Maryland and Washington leveraged federal funds to plan and build the system
- **Ongoing Support:** Now they use a mix of state and federal grants to support operations, ensuring sustainability while still accessing grant opportunities
- **Flexible Funding Approach:** A hybrid approach allows for adaptive budgeting that balances long-term sustainability with short-term project-based grant funding

Fully State-Funded Model

- **No Federal Grants:** California chose to develop and maintain its SLDS entirely with state funds from the outset
- **Legislative Reliance:** They rely completely on legislative support and state budget appropriations for both startup and ongoing costs
- **Stable Funding Source:** This approach provides a predictable and stable funding model but lacks the flexibility of grant-based project expansion.

In addition to the system setup, California's C2C is also focused on scaling tools, facilitating collaboration, and managing their robust governance structure



Source: Cradle-to-Career, "Cradle-to-Career Governing Board Staff Report", October 25, 2023 & November 6, 2024

Current Scope of Cradle-to-Career Office

The current scope and work of the C2C Office extends beyond the building and maintenance of the C2C Data System. While managing the data system is a primary purpose, the Office is also focused on scaling practical tools, fostering stakeholder engagement, and managing the complex governance structure.

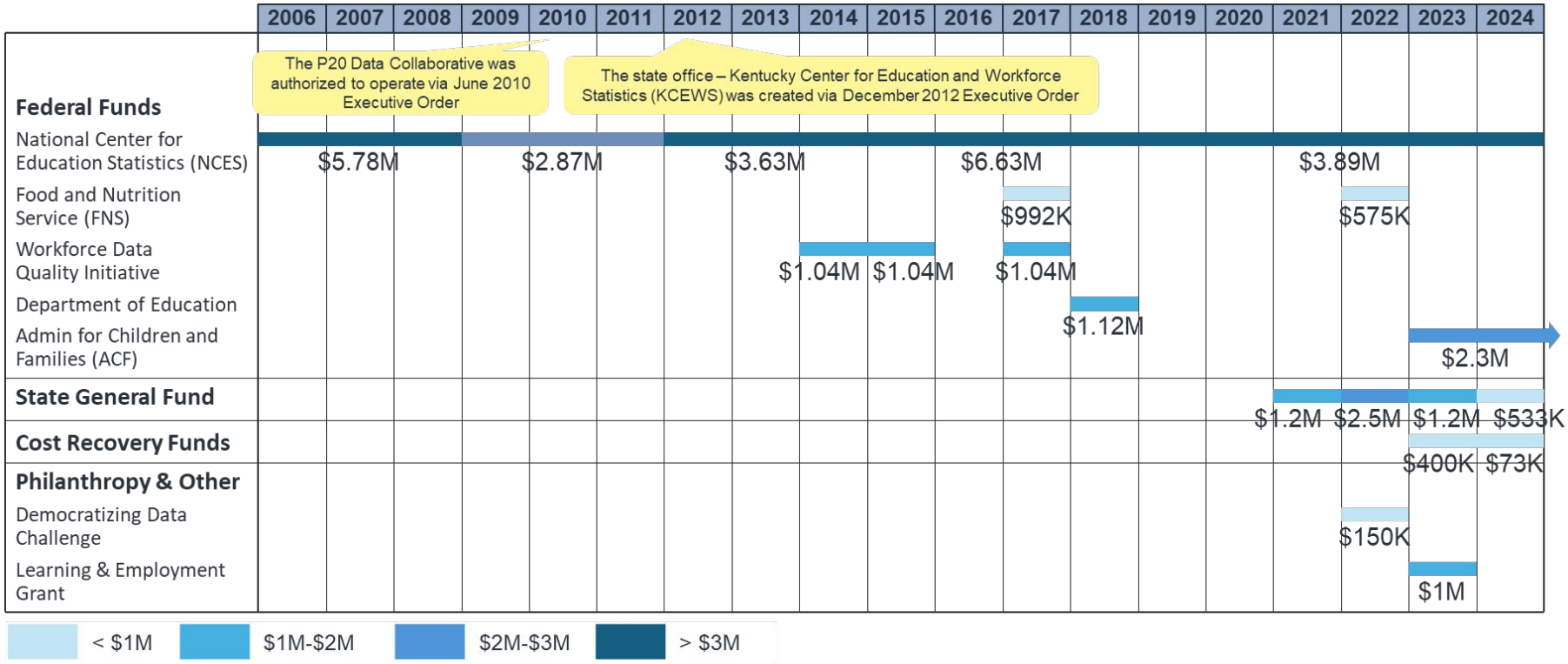
Enabling Cradle-to-Career Efforts

In addition to funds for California's C2C office, the state has also invested resources for the collaboration efforts of partner agencies.

Many of C2C's partner entities have received direct state funding (outside of C2C's budget) for data, IT, or analysis work relevant to their ability to provide data to C2C.

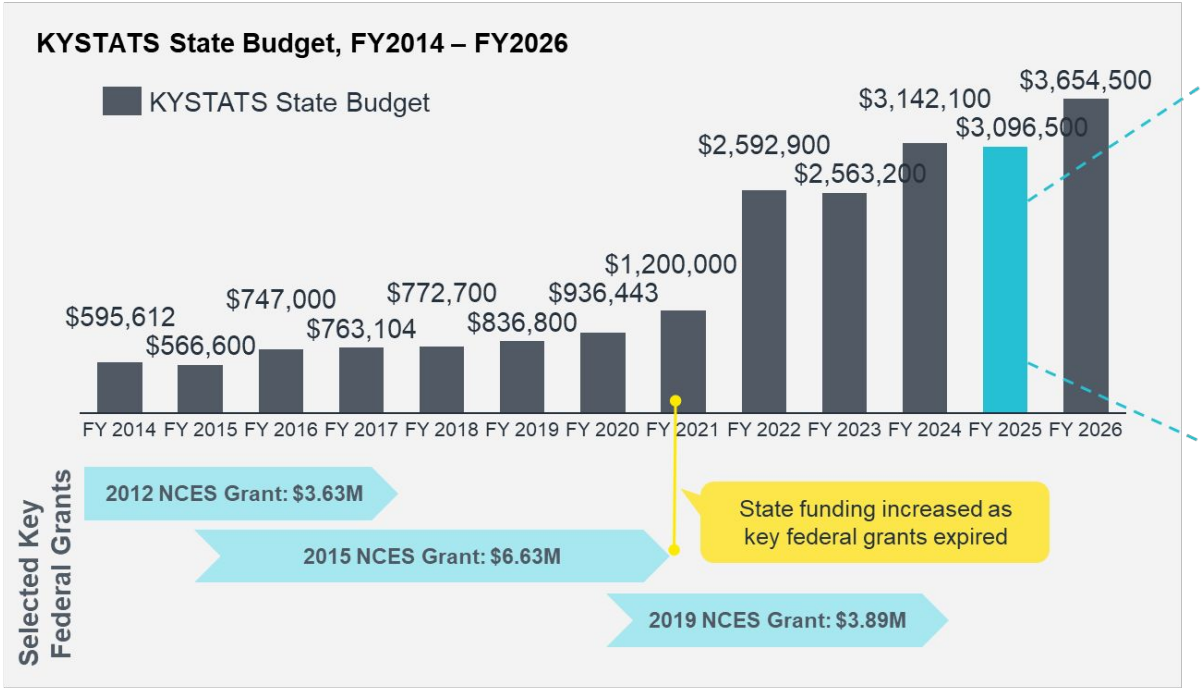
For several entities, percentage-based funding increases were made contingent on full participation in the implementation of the C2C Data system. In other cases, entities received a commitment of a lump sum, typically $150,000, in ongoing funding to support the initiative.

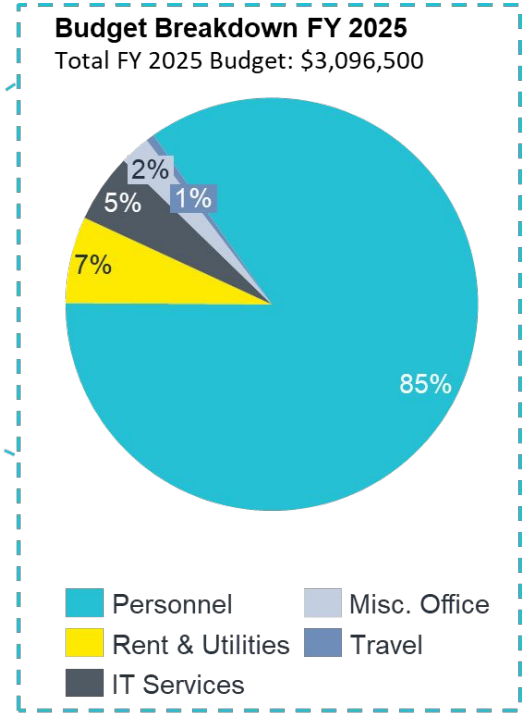
Of the exemplar states, Kentucky's KYSTATS has leveraged the largest variety of federal and philanthropic funds to support its system and research agenda



Source: KYSTATS Board Meetings, 2021–2024, https://kystats.ky.gov/About/Meetings
National Center for Education Statistics, https://nces.ed.gov/programs/slds/stateinfo.asp

Kentucky's Grant-First Model built KYSTATS with federal funding, transitioning to more significant state support to ensure long-term sustainability after key grants expired





Source: KYSTATS

Across exemplar states, there is a small but growing opportunity for revenue generation through cost recovery programs

Many states are exploring or implementing cost recovery programs as a way to generate revenue by charging for the time and resources needed to process data requests. These programs help offset operational costs while supporting the overall sustainability of SLDSs.

Kentucky

- Sees **$150,000 – $200,000 in revenue** annually from their cost recovery program
- Processes around **250 requests per year**
- Uses **a blended rate model**, charging based on the staff time required from pulling data to analyst review

Maryland

- Increasingly focused on **cost recovery**
- Legislature appropriated **$10,000 in FY24 and $30,000 in FY25** for this revenue source
- Has generated between **$10,000–$30,000 in revenues**

Washington

- Does not currently have a cost recovery program but is **actively exploring the possibility**
- Has **legal approval** and organizational support to move forward with implementing such a program
- Received **55 data requests** between Jan 2021 and April 2022 from state agencies, CBOs, the legislature, and external researchers

Limitations to Cost Recovery Programs

- **Minimal Revenue Generation:** While cost recovery programs can offset operational costs, they typically generate modest revenue
- **Adjusting Fees for Researchers:** States often reduce fees based on the financial capacity of the requestor, such as waiving fees for graduate students or smaller research organizations, which limits potential revenue
- **Administrative Burden:** Implementing and managing cost recovery programs requires administrative resources to calculate the costs of each request and manage the payment process, potentially offsetting some of the financial benefit

Personnel

Six key functions are essential to the success of an SLDS

Organizational Leadership

Strong leadership is essential for setting the **strategic vision, securing funding,** and **fostering cross-agency collaboration** to ensure the SLDS meets its goals and provides service to the state.

Project Management

Effective project management is critical for **keeping SLDS development and operations on track**, **ensuring timelines**, budgets, and report deliverables are consistently met.

Data Management

Data analysts focus on **processing, organizing, and interpreting raw data** within the SLDS including data cleaning and organization.

Communications

A dedicated communications function ensures **consistent messaging**, **promotes the SLDS's value** to stakeholders, and **manages public relations**, helping to build trust and secure continued support.

System Support / IT

Reliable IT and system support are foundational to maintaining system **functionality, security, and scalability**, ensuring the SLDS can handle growing data needs and evolving technological demands.

Analytics

The analytics function, whether conducted internally or externally, is crucial for analyzing SLDS data to **generate actionable insights and reports for stakeholders including research, advanced analytics and dashboards.**

States use a mix of full-time employees and contractors, with staffing levels reflecting the system's maturity, and overall financial strategy

Current Staffing Estimates by State, FY2025

	Number of FTEs	Number of Contractors	Total Personnel
Kentucky	4	28*	**32**
Maryland	15	1	**16**
Washington	13	2	**15**
California	26	~30	**56**

*The majority of KYSTATS contractors work full-time and function as KYSTATS staff

Hiring Challenges

Most states noted challenges in hiring, with reasons including:

- Skilled labor shortages for technical roles
- State-mandated in-office requirements
- Difficulty attracting talent to the public sector

Using Contractors

Many states use contractors to supplement full-time SLDS staff, offering flexibility and expertise for both long-term and specialized projects:

- **Washington** has partnered with the same two contractors for years, leveraging their in-depth knowledge of the system for enhancements and special projects, while full-time staff handle day-to-day maintenance.
- **Kentucky** uses contractors to maintain operational flexibility; most contractors work full-time alongside permanent staff and are integral members of the KYSTATS team.

System Stack

Strategic decisions on technology system stacks can significantly reduce SLDS technology costs while ensuring system efficiency and security

License Sharing

- **Maximizing License Value:** Maryland leverages the Department of Education Oracle license to reduce costs
- **Consolidating Technology Functions:** States such as Washington and Kentucky consolidate multiple state functions that require similar technologies under one entity to reduce costs

Personnel

- **Skilled Labor Shortage:** Several states face difficulties in hiring personnel with sufficient expertise in selected systems
- **Training Investments:** An often-overlooked cost to states is the investment in staff training for each technology

Security

- **Built-In Security Considerations:** Security needs to be integrated into the design of SLDSs from the start and account for all users including staff, contractors, and researchers. Failure to do so could lead to costly retrofits

Case Note: Increased Security Costs in Maryland's MLDS

After vulnerabilities were discovered in Maryland's existing VPN service (Pulse Secure), the state mandated a transition to a new provider with a more secure system.

The new system requires state-issued computers, which many SLDS researchers lack. To address this, MLDS implemented virtual desktops (VDIs), but the higher bandwidth needed for researchers' work has driven up costs.

For now, the Department of Information Technology is covering these extra costs, but it's unclear how long this support will continue or if the costs will shift to MLDS.

Source: MLDS Center Governing Board Meetings, https://mldscenter.maryland.gov/Agendaandminutes.html

States differ in their SLDS software stack and internal system integration, driving varied operational costs

Maryland's MLDS FY2025 Software Costs

Software	Description	Annual Cost
AWS Backup	Cloud-based backup service	$20,000
Oracle	Database management system	$17,000
VMWare	Virtual machine management	$10,000
Altaro	System backup and recovery	$2,700
Secure Sockets Layer	Security and encryption	$2,600
ERWIN	Data modeling	$2,450
STATA	Statistical analysis	$1,800
Managed File Transfer (MFT)	Data transfer system	$1,500
EV Code – Digicert	Authentication	$1,380
JIRA	Project management and issue-tracking	$700
Webflow	Web design and hosting	$450
	Total Annual Cost:	**$60,580**

Maryland leverages the Dept. of Education Oracle license to reduce costs

California estimates its ongoing system stack (incl. Snowflake, AWS, Ping, Tamr, and Tableau) costs will be approximately **$1 million annually**, driven by storage and computing expenses for their high volume of data.

Kentucky's KYSTATS FY2025 IT Costs

Software	Description	Annual Cost
Tableau	Data visualization	$87,541
Servers	All server-related costs, incl. backups and support	$47,886
Citrix	Virtual machine management	$10,440
VOIP	Phone service application	$6,960
Progress Telerik	UI development tools	$4,750
ArcGIS	Geographic information system	$4,820
Visual Studio Enterprise	Software development toolkit	$3,240
Email Storage	Staff email storage	$2,940
GlobalProtect	VPN for remote system access	$1,908
Microsoft Office	Productivity	$1,666
Adobe Pro	Creative production	$816
Keyoti	Search engine control	$440
Adobe Stock	Stock images and assets	$345
	Total Annual Cost:	**$173,752**

Servers and data backup systems can be a key cost driver within the system stacks

Source: KYSTATS, MLDS Center Governing Board Meetings, https://mldscenter.maryland.gov/Agendaandminutes.html, Cradle-to-Career

In response to their technical needs growing beyond the current system's capacity, ERDC has begun a modernization process including a cloud migration

Needs Assessment → **Planning & Design Cloud Strategy** → **Build Data Architecture** → **Deployment & Change Management**

ERDC **contracted a consultant** to conduct a modernization study, identifying several key challenges:

- Limited stakeholder understanding of ERDC products and value
- Aging infrastructure
- Inefficiencies in data intake process
- Challenging data accessibility

ERDC and their consultants are currently building out the **technical architecture recommendation** that will go into an RFP for implementation.

Upon completion of the planning phase, ERDC will **request funding support in 2025 for 2026 or 2027 implementation**

Looking ahead, ERDC recognizes the **change management and staff training needs** that will be required to support the system transitions

Washington's ERDC Modernization Costs to Date

P–20W Data System Feasibility Study	Near-Term Modernization Projects	Develop New System Requirements
$379,000	$1.2 million	$2.0 million

Targeted Outcomes:

- Optimize P–20W data system performance
- Improve data literacy of P–20W data environment
- Reduce friction in the data request and fulfillment process
- Leverage and further enhance trusted partnerships and communication

Resources


DQC Data Quality Campaign

OCTOBER 2025

Funding What Matters

What Building and Sustaining a Statewide Longitudinal Data System Costs

Over the past two decades, states have made meaningful progress toward building statewide longitudinal data systems (SLDSs) that can enable access to the data that students, job seekers, families, educators, employers, and policymakers need to make informed decisions about education and workforce pathways.

As more state leaders work to modernize and expand these systems, they often ask an important question: **What does building and sustaining a high-quality SLDS that supports data access, use, and impact cost?**

To find an answer, the Data Quality Campaign (DQC) dug into four examples of robust SLDSs in California, Kentucky, Maryland, and Washington state. Each of these states has aligned its SLDS funding with the objectives leaders want the SLDS to fulfill for students, families, and the state's future. **We found that the cost of maintaining these comprehensive and mature SLDSs averages around $3 million annually, but the complete cost depends on the state's vision, priorities, and existing infrastructure.**

Based on our analysis of these systems, we identified three key lessons to guide any state leader seeking to make meaningful investments in their state's future.

- Objectives for the system should drive costs.
- States can and should leverage a mix of federal, state, and philanthropic dollars to fund SLDSs; and
- Personnel are the largest investment for an SLDS, not technology.

Sustainability Isn't Just a Funding Issue—It's a Governance Issue

The most effective way to ensure that an SLDS endures across administrations and continues to serve a state's education and workforce priorities is by establishing cross-agency data governance in statute. Read DQC's recommendations for states.

Funding What Matters: What Building and Sustaining a Statewide Longitudinal Data System Costs

Questions?

Data Quality Campaign
info@dataqualitycampaign.org