



COMMONWEALTH of VIRGINIA

Office of the Governor

Aimee Rogstad Guidera
Secretary of Education

November 1, 2024

MEMORANDUM

TO: The Honorable Glenn Youngkin, Governor of Virginia
The Honorable Ghazala Hashmi, Chair, Senate Education and Health Committee
The Honorable L. Louise Lucas, Chair, Senate Finance and Appropriations
Committee
The Honorable Sam Rasoul, Chair, House Education Committee
The Honorable Luke E. Torian, Chair, House Appropriations Committee

FROM: Aimee Rogstad Guidera, Secretary of Education

SUBJECT: Report and Recommendations on the HB 1083 Education and Workforce Data
Work Group

Pursuant to Chapter 410, 2024 Virginia Acts of Assembly, Section 1, please find enclosed the report based on the collaboration of Virginia's Education and Workforce Data Work Group.

The General Assembly charged me with convening this Work Group to evaluate the status of Virginia's education and workforce data ecosystem and to develop recommendations for its improvement. This report builds on the existing strengths of our data systems and proposes innovative strategies for enhancing collaboration, finding efficiencies across agencies, and producing improved outcomes and tools to better serve the Commonwealth.

This report reflects months of collaboration among many dedicated Work Group members and their staff. The recommendations included are informed by their valuable input, as well as by the advisement of technical experts. These recommendations address critical gaps and ensure Virginia's education and workforce data and analysis systems offer a nation-leading experience for policymakers, government leaders, and citizens alike.

I would like to express my gratitude to all participants for their contributions. I am confident that the efforts outlined in this report will foster a more robust and integrated data ecosystem, ultimately benefiting all Virginians.

FINAL REPORT

Virginia education and workforce data ecosystem Report addressing Chapter 410, 2024 Virginia Acts of Assembly Section 1

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Executive Summary

Virginia’s education and workforce data ecosystem (“the Ecosystem”) is a collection of data and analysis systems critical for supporting evidence-based policy decisions, workforce development, and educational outcomes across the Commonwealth. The Ecosystem, comprised of key data entities such as the Virginia Longitudinal Data System (VLDS), the Virginia Workforce Data Trust (VWDT), and the Virginia Office of Education Economics (VOEE), serves as a foundation for addressing the data needs of families, opportunity seekers, employers, educators, state and local agencies, policymakers, and researchers, among other stakeholders. However, despite its strengths, the Ecosystem in its current state faces significant challenges in coordinating governance, ensuring data accessibility, providing valuable insights, tools, and communications, and promoting inter-agency coordination, which lead to inefficiencies and hinder its potential for greater impact.

House Bill 1083 (2024) directed the Secretary of Education to convene a Work Group to review the current capabilities of Virginia’s education and workforce data systems and to develop a comprehensive work plan for their improvement. After months of collaborative meetings, surveys, and interviews, the Work Group has developed a set of strategic recommendations aimed at addressing critical issues in the Ecosystem that, if implemented, can position Virginia as a national leader in leveraging coordinated governance to better consolidate existing resources, reduce bureaucratic barriers to data access, and address some of the Commonwealth’s most pressing data priorities and questions with greater efficiency.

Leaders across the Ecosystem consistently identified several key challenges, including limited coordination and communication between agencies leading to duplication of efforts, the unavailability of timely data to inform decision-making, a lack of clarity on where to go to get questions answered, and an absence of user-friendly tools, like dashboards, that provide actionable data for policymakers, educators, and the public. Additionally, stakeholders expressed concerns about data privacy, security, and the modernization of technology, highlighting the opportunity to coordinate across the various entities that manage and use the Commonwealth’s education and workforce data to address these issues. These challenges underscore the critical need for better coordination to ensure that Virginia’s data systems can effectively serve the needs of all stakeholders to solve the Commonwealth’s most pressing challenges.

Current State

Future State

- ✗ There is a desire to **break down silos** and **address a lack of coordination and collaboration** across Virginia’s data systems and those who rely on their data (policymakers, agency leaders, etc.)
- ✗ Virginians, including policymakers, **do not always have access to the data they need** to answer their most important questions.
- ✗ The system is **not built to effectively serve all stakeholders**, and there is a **desire for better tools** to understand the stories the data can tell.

- ✓ Governance structures create space for **shared decision-making** and **better communication** while ensuring **transparency** and **accountability**.
- ✓ Codifying **clear leadership** and **adequate funding** through a non data-contributing Office creates a **central location** for improved **data access, coordination, sharing, and dissemination** that **sustains throughout changing administrations**.
- ✓ Stakeholder feedback informs a **shared vision** across data systems, ensuring **everyone has access to usable information** that impacts their futures.

Recommendations for the General Assembly

1. **Streamline decision-making, reduce redundancies, and ensure greater coordination across education and workforce data systems by establishing the Virginia Education and Workforce Data Governing Board. The Governing Board will be charged with delivering on the state’s vision for education and workforce data, including identifying areas for consolidation, aligning resources, and improving overall system efficiency.**

A Virginia Education and Workforce Data Governing Board (“the Governing Board”) should be established to oversee the strategic direction, governance, and management of the Ecosystem. This new structure should supersede and replace existing decision-making structures for the Ecosystem’s data systems, ensuring strategic decisions about how the Commonwealth’s data is connected, analyzed, and reported to stakeholders reflect executive-level leadership alignment, as well as bolster inter-agency coordination, data security, accountability, and transparency for the Ecosystem. The Governing Board will also set a prioritized research agenda and direct the creation of data outputs (such as data analyses and interactive dashboards of outcomes data), ensuring the available data in the Ecosystem is strategically leveraged to meet the needs of a wide array of stakeholders, including policymakers, educators, businesses, and the public. With budgetary oversight of all data systems within the Ecosystem, the Governing Board will initially determine how much money is being spent across the Ecosystem and for what functions, and will be empowered to find budgetary efficiencies and identify opportunities to consolidate redundant practices such as the duplication of data collection or analysis.

2. **Ensure the Governing Board can deliver on the state’s vision by establishing an Office of Education and Workforce Data overseen by an Executive Director, initially housed in the Administration Secretariat.**

The Governing Board should oversee an Office of Education and Workforce Data (“the Office”), housed within a non-contributing entity, responsible for coordinating Virginia’s education and workforce data systems and developing outputs such as tools and dashboards that align with the Governing Board’s vision and meet stakeholders’ needs. In its first two years, the Office will focus on high-impact tasks that will immediately improve the efficiency and coordination of Virginia’s data systems. These tasks include cataloging all existing data systems within the Ecosystem, evaluating their operating budgets, and identifying areas for consolidation to reduce redundancy in data collection, analytics, and reporting. The Office will also develop public-facing tools, such as dashboards, to provide stakeholders with timely and actionable data. By addressing these priorities early on, the Office will deliver measurable improvements in operational efficiency, resource allocation, and data accessibility, ensuring Virginia’s data systems are streamlined and effective from the outset.

3. **Elevate input from key stakeholders by charging the Governing Board with establishing an advisory committee and other work groups as needed.**

The Governing Board should establish an advisory committee comprised of state agency leaders, local government agency leaders, business leaders, members of the public, and other individuals as directed by the Governing Board that provide recommendations on decisions related to data privacy, security, technical aspects of data migration, and the use of emerging technologies, such as Artificial Intelligence (AI). This advisory committee will ensure diverse perspectives are incorporated into decision-making processes, allowing the Governing Board to stay informed on emerging trends, address stakeholder concerns, and implement best practices in data governance and technology.

4. Provide a sustainable funding source to allow the Office of Education and Workforce Data to perform their legislatively required duties by establishing a line item in the state operating budget.

The General Assembly should appropriate adequate resources and funding to support the execution of the charges of the Governing Board and its Office. This appropriation should align with the operating budgets of states with similar governance structures and account for staffing, operations, and production of tools and outputs. As the Office works to find budgetary efficiencies by coordinating across the Ecosystem, the Office will develop recommendations for other ways this Office can provide cost savings to the Commonwealth.

The recommendations outlined in this report can significantly strengthen Virginia's ability to leverage its existing education and workforce data systems to increase efficiencies, benefitting policymakers, educators, businesses, and citizens alike. By establishing a clear governance framework for shared decision-making, prioritizing and streamlining the best use of existing assets and funding, and modernizing data systems, Virginia can continue to lead the nation in education and workforce development.

Background

HB 1083

In 2024, the Virginia General Assembly passed House Bill 1083, directing the Secretary of Education to convene a Work Group tasked with reviewing and improving Virginia’s education and workforce data ecosystem (“the Ecosystem”). This initiative is critical to ensuring that Virginia’s education and workforce data systems operate efficiently and coordinate effectively to support evidence-based policymaking, economic development, and alignment between education and workforce efforts.

CHAPTER 410

An Act to direct the Secretary of Education to convene a work group to review and develop a work plan related to the Virginia Longitudinal Data System and the Virginia Workforce Data Trust; report.

[H 1083]

Approved April 4, 2024

Be it enacted by the General Assembly of Virginia:

1. § 1. The Secretary of Education (the Secretary) shall convene a work group to review the current capabilities and future needs of the Virginia Longitudinal Data System (the System) and the Virginia Workforce Data Trust (the Trust) (collectively, the Databases) and, based on the results of such review, develop a work plan for improving the System. The goal of such work shall be to provide a best-in-class data analytics platform and to support evidence-based research and data-informed decision-making by policy makers in the Commonwealth through the maintenance of datasets and the creation of public-facing dashboards regarding education, labor, and the workforce. The work group shall include a representative from the State Council of Higher Education for Virginia (SCHEV), the Virginia Office of Education Economics (VOEE), the Secretary of Labor, each of the participating agencies in the System, the Chief Data Officer of the Commonwealth, and the Chairs of the Senate Committee on Education and Health, the Senate Committee on Finance and Appropriations, the House Committee on Education, and the House Committee on Appropriations or their designees.

The work group’s review shall consider a consolidation of or other improvements to the System and the Trust, including (i) identification of the appropriate entity or entities to host the Databases and the associated upfront and ongoing costs; (ii) the identification of any technology upgrades required for interoperability and modernization; (iii) a plan for the governance of data sharing among partner entities; (iv) opportunities and challenges related to accessing the System and Trust on the network of the Virginia Information Technologies Agency (VITA); (v) best practices related to data privacy and data integrity; and (vi) any other issues identified by the Work Group as relevant to the review.

Based upon the results of the review and the identified capabilities and needs of the System, and consistent with the goal of the work, the work group shall develop either a work plan for the proposed consolidation of the Databases or for improved support of the System.

Such work plan shall include recommendations regarding (a) a projected timeline for completing such consolidation or improved support; (b) the funds, staffing, and resources necessary to fully administer and maintain the consolidation or improved support; (c) a formal governance structure for the Databases; and (d) the appropriate entity to lead the implementation of the work plan.

SCHEV, VOEE, the Department of Labor, VITA, and all other state entities shall cooperate upon request with the Secretary in executing the provisions of this act.

The Secretary shall deliver a report that includes a summary of the review and the proposed work plan by November 1, 2024, to the Governor and the Chairs of the Senate Committee on Education and Health, the Senate Committee on Finance and Appropriations, the House Committee on Education, and the House Committee on Appropriations.

In addition to the Work Group members named in HB 1083, the Secretary of Education expanded the Work Group to include a total of 75 members, representing legislators and their staff, agency leaders and their staff, data systems leaders, and additional representatives from other associations and organizations. These additional Work Group Members provided diverse perspectives that contributed to the robustness of group discussions as well as the recommendations included in this report. For a full list of participating Work Group members, see Appendix A.

Virginia's Education and Workforce Data Ecosystem

HB 1083 only explicitly names the Virginia Longitudinal Data System ("VLDS") and the Virginia Workforce Data Trust ("VWDT"); however, the Work Group identified other pertinent components of Virginia's education and workforce data ecosystem that also merited discussion and inclusion for consideration in overall recommendations to ensure a comprehensive approach inclusive of all systems incorporating data into the Ecosystem—namely, the Virginia Office of Education Economics ("VOEE") and the Commonwealth Data Trust ("CDT").

The Virginia Longitudinal Data System ("VLDS")

Housed within the State Council of Higher Education for Virginia ("SCHEV"), the VLDS is a P20+ system composed primarily of education and workforce data agencies spanning from K-12 to postsecondary. The agencies that provide data to VLDS retain their own internal data governance, source systems, and data collections; only a selected subset of data from each agency are made available to VLDS. Funded by the 2009 Statewide Longitudinal Data Systems Grant Program of the U.S. Department of Education, VLDS is most often leveraged by researchers looking to answer research questions using Virginia's education and

workforce data. Participating researchers can access data from VLDS in a secure portal. Participant data for VLDS is federated, meaning that agencies must approve for their data to be used in research. For a list of all participating agencies, see Appendix B.

The Virginia Workforce Data Trust (“VWDT”)

Housed within the Virginia Department of Workforce Development and Advancement (Virginia Works), the VWDT was created by legislation in 2019. Although VLDS primarily supports research, VWDT is intended to develop meaningful analyses and evaluations of workforce programs, support state reporting requirements, and improve coordination efforts across workforce programming. Unlike VLDS, VWDT has access to identifiable data such as social security numbers, and, outside of the participating entities listed in legislation, it has the authority to request data from other agencies. For a list of all participating agencies, see Appendix B.

The Virginia Office of Education Economics (“VOEE”)

In 2021, the General Assembly established VOEE as the state’s newest data entity with a focus on aligning higher education and workforce data with economic development goals. VOEE is housed within the Virginia Economic Development Partnership (“VEDP”), which has its own governing board. Established under § 2.2-2238 of the Code of Virginia, VOEE coordinates data analysis on workforce and higher education alignment and translates data to partners, offering a unified source of information for policy development and implementation related to talent development. One of their most notable products is a collaboration with the Virginia Workforce Development Board to produce the Virginia High Demand Occupations List. For a list of all participating agencies, see Appendix B.

The Office of Data Governance and Analytics (“ODGA”) and the Commonwealth Data Trust (“CDT”)

The Office of Data Governance and Analytics (“ODGA”), led by the Commonwealth Chief Data Officer, is housed in the Office of the Secretary of Administration and oversees data governance, fosters data sharing among agencies, and manages the CDT, as established under § 2.2-203.2:4 of the Code of Virginia. ODGA advises Commonwealth agencies on best practices for data governance and supports the secure collection and sharing of government information, among other responsibilities. It oversees both the Virginia Data Advisory Commission and the Data Sharing and Analytics Advisory Committee, which provide guidance and recommendations to the Executive Branch regarding data governance. The CDT is a secure information-sharing environment that establishes consistent requirements for CDT members through standardized data sharing agreements. Although not an analytics entity in the same way that VLDS, VWDT, or VOEE are regarding education and workforce data, ODGA and the CDT support effective data stewardship by Virginia agencies and support data sharing (including sharing of original analytics and datasets) across the Commonwealth.

Work Group Process

Between May and November 2024, the Work Group followed a structured process to assess the current state of the Ecosystem and to develop recommendations aligned with the requirements of HB 1083. This process was designed to engage a diverse range of stakeholders, incorporate expert input, and fulfill the legislative mandate of HB 1083 to create a cohesive plan for modernizing the Ecosystem.

The Work Group began its efforts with a virtual meeting in June, where members reviewed the legislative requirements of HB 1083 and discussed the existing capabilities of VLDS, VWDT, VOEE, and CDT. In July, the Work Group convened in person to identify key challenges within the current data systems, evaluate national best practices from other states, and initiate discussions on a shared vision for Virginia's future data ecosystem. The September meeting built upon these discussions, where members reviewed a draft vision statement, further examined national best practices, and worked collaboratively to develop potential solutions for advancing Virginia's data ecosystem, including recommendations for what outputs should be prioritized. A detailed summary of the Work Group's meetings can be found in Appendix C.

Between each meeting, Work Group members had the opportunity to participate in smaller, focused discussions on relevant topics, and were also invited to complete surveys to provide feedback. A detailed summary of surveys provided to Work Group members can be found in Appendix D. From September through November, feedback was synthesized into specific recommendations that were shared with Work Group members for additional feedback. This collaborative, phased approach—grounded in stakeholder input and expert analysis—led to a set of actionable recommendations aimed at enhancing Virginia's strong foundation in data collection and analytics, and moving toward a more coordinated and modernized system. The following sections of this report detail the current opportunities facing the Ecosystem, as well as recommendations for improvement.

National Best Practices

As part of the Work Group’s responsibilities through HB 1083, members engaged with best practices from across the nation. There are many different national experts providing guidance on state longitudinal data systems (“SLDS”), but their recommendations align on some of the major opportunities for change and improvement of Virginia’s Ecosystem.

At the June, July, and September meetings, the Data Quality Campaign (“DQC”), a national leader on education data policy and expert adviser on national SLDS best practices, served as a technical advisor to this Work Group. DQC provided insights and presented the below national best practices to the group. Work Group members additionally engaged with data systems leaders from Kentucky and California to learn about how they have approached these best practices, creating space for Work Group members to reflect on what may work best within Virginia’s unique context.

The national best practices elevated to Work Group members focused on 10 primary recommendations for state policy, including:

1. Codifying cross-agency data governance in state law.
2. Establishing an independent entity to administer the state’s SLDSs.
3. Mapping existing assets to identify system strengths and limits.
4. Engaging the public to prioritize data access needs and seek continual feedback.
5. Funding SLDSs and the source systems that contribute data to them.
6. Developing legal and privacy frameworks to enable and guide state data efforts.
7. Developing and acting on rollout plans when building data access.
8. Investing in the talent and human capacity needed to modernize SLDSs toward access.
9. Centering privacy.
10. Supporting local leaders in building their own capacity to use data.¹

Although these recommendations do not need to be implemented in a strict sequence, national best practice suggests the first recommendation should be the highest priority. This underscores the critical role of governance in ensuring the success of the other recommendations. The Work Group carefully considered how these recommendations could be applied within Virginia’s Ecosystem and, through discussions, identified opportunities that align with national models and address the Commonwealth’s most pressing needs.

¹ Data Quality Campaign. (2023, April). What now? A vision to transform state data systems. https://dataqualitycampaign.org/wp-content/uploads/2023/04/DQC-What-Now_A-Vision-to-Transform-State-Data-Systems.pdf

Opportunities

Virginia is already a national leader when it comes to its existing education and workforce data systems. The Strada Education Foundation rated the Commonwealth as one of nine states in the nation “leading,” its highest possible rating, on key state education-to-employment data system elements.² The Commonwealth also ranked among the top-scoring states in the Bush Institute’s SLDS rankings and was only one of eight states with a ranking of highly effective in “Governance: Capacity and Resources.”³ This strong foundation contributes to Virginia’s ranking as the top state in the nation for business.⁴

Despite these strengths, the Work Group identified several opportunities for growth and advancement of the Ecosystem beyond its current capabilities. Through meetings, one-on-one interviews, surveys, and additional engagements, the Work Group outlined four main categories where the Commonwealth can improve:

- 1. Opportunity for Improved Leadership Coordination**
- 2. Opportunity for Improved Cross-Agency Collaboration, Consolidation, and Efficiency**
- 3. Opportunity for Improved Data Accessibility**
- 4. Opportunity for Improved Data Tools and Usability**

Opportunity for Improved Leadership Coordination

Individually, the Ecosystem’s main data and analysis systems operate effectively and accomplish their legislatively mandated duties. The agencies that compose these systems have established governance practices and data sharing protocols, and produce a diverse set of outputs for their target stakeholders. Although these systems individually contribute in their own ways, the Ecosystem as a whole lacks the impact that Work Group members envision it can achieve in the future.

Currently, there is no formalized mechanism fostering coordination and engagement across the leaders of the individual data systems of the Ecosystem. There is also no single authority charged with setting a vision for the Ecosystem and ensuring it is operating efficiently. As a result, they all operate with independent visions and priorities, making it difficult for Work Group members to know where to go to get a question answered or to understand what data collection or analyses any given system is prioritizing. For Work Group members, this creates a desire for a more effective and efficient governance structure, especially regarding determining shared definitions and protocols across systems. The current fragmented systems create misalignment when decisions around data sharing, integration of additional data sources, or producing

² Strada Education Foundation. (2024, May). State outcomes index: Clear outcomes. https://stradaeducation.org/wp-content/uploads/2024/05/SOI_Appendices_ClearOutcomes_May2024.pdf

³ Bush Institute. (2023). Statewide longitudinal data systems. <https://pipeline.bushcenter.org/slds>

⁴ Office of the Governor of Virginia. (2024, July). Governor Glenn Youngkin announces CNBC names Virginia “America’s Top State for Business.” <https://www.governor.virginia.gov/newsroom/news-releases/2024/july/name-1030663-en.html>

outputs like analyses and dashboards overlap. As the Ecosystem currently lacks the shared vision and direction that would come through coordination among leadership, each system operates in a silo, largely isolated from its counterparts.

“We need to have someone who is the **single source of consolidated strategy**, and we don’t have that currently.”
— *Work Group Member*

It is also often unclear how decisions are made within each system. Although they each maintain their own governance structures, interviews with Work Group members suggested that the actions of these data systems are frequently determined by technical experts rather than by the senior leadership of the Commonwealth’s state agencies. This creates an environment where decisions and their outcomes lack accountability and transparency to broader stakeholders and the general public. In a survey, 50% of Work Group survey respondents identified “Governance” as the top feature needed to improve the Ecosystem.

The recommendations included in this report provide a pathway to increasing the coordination and improving the efficiency of the Ecosystem’s leadership, giving Virginia the opportunity to address many of the desires of Work Group members and the stakeholders they represent. A centralized decision-making entity can establish expedited research requests and standardize data sharing agreements for all participating agencies, rather than those within a specific existing system, such as CDT. Leaders from across the Ecosystem will be able to collaborate on a unified vision, engage in transparent decision-making, and be held accountable for delivering meaningful outcomes.

Opportunity for Improved Cross-Agency Collaboration, Consolidation, and Efficiency

At least 16 distinct state agencies currently participate in the Ecosystem, each collecting and integrating data provided by Virginians into major data systems. These systems practice data governance, such as through ODGA’s standardized data-sharing agreements among CDT members. However, feedback from Work Group members revealed that, like the systems they manage, the agencies themselves often operate in silos. As a result, it can be excessively difficult to navigate the various data systems in the Ecosystem to answer timely, policy-relevant questions.

Work Group members currently lack a comprehensive understanding of the Ecosystem’s data offerings and how to access and leverage it to support their respective organization’s goals. There is a strong desire amongst Work Group members to better catalog existing resources within the Ecosystem to make sense of what is available to inform decision-making. Work Group members were surveyed for their familiarity with the various data systems within the Ecosystem, and the results indicate that despite many respondents representing organizations that participate in these systems, there is a highly varied understanding of what they actually do. When asked in a survey about VWDT, only 39% of Work Group respondents were extremely

or moderately familiar with the system, 44% had never interacted with it, and only 9% used it to access state data. This lack of familiarity is not unique to VWDT. Although the external system most frequently accessed by Work Group member survey respondents was VLDS at 52%, almost a fifth of respondents had never accessed this system at all. VOEE, the next most frequently accessed system, was “not at all familiar” for 26% of the Work Group and had never been accessed by 37%. This creates an environment where there is a lack of general knowledge of the work of other data systems in the Ecosystem, which leads to redundancies and inefficiencies as agencies do not actively seek to collaborate and combine efforts that may overlap. Virginia has access to robust data systems, but if its leaders do not know how to effectively leverage them, they cannot live up to their potential.

“The ecosystem must be one that enables agencies to **break down communication barriers and information silos** to share relevant information across and within agencies to **improve the overall workflows and processes** that directly affect Virginians.”
— *Work Group Member*

This lack of familiarity leads to additional problems. During interviews with leaders from agencies and data systems in the Ecosystem, the challenge and importance of building trust amongst agencies participating in the Ecosystem was raised on at least four separate occasions. This theme held true in a group discussion of familiarity and use of the Ecosystem during the July meeting, when it was brought up at least three additional times that establishing greater trust amongst agencies was an important early step that should be addressed.

The recommendations in this report provide a roadmap for agency leaders to gain a deeper understanding of the Ecosystem and foster stronger, more trusting relationships between participating agencies. By building trust and understanding, agencies will be able to collaborate more effectively, maximizing the impact of their data. In this future state, data can be combined and shared in ways that are not currently possible, and those who need it will be able to access it easily and use it effectively.

State Example: Kentucky Center for Statistics

During the July Work Group meeting, Dr. Matt Berry, Executive Director of the Kentucky Center for Statistics (“KYSTATS”), presented the process Kentucky went through to establish itself as a model state for “high-quality, formal, and transparent cross-agency data governance structures.”⁵ By codifying cross-agency governance with leadership from the Education and Labor Cabinet, Department of Education, Council on Postsecondary Education, Higher Education Assistance Authority, and Cabinet for Health and Family Services, KYSTATS was able to bring critical stakeholders to the table, building trust across agencies and stakeholders, resulting in over 6,000 active data elements from over 27 agencies. Furthermore, through

⁵ Data Quality Campaign. (2018, January). Cross-agency governance: A case study. <https://dataqualitycampaign.org/wp-content/uploads/2018/01/DQC-Cross-Agency-Gov-CaseStudy-090920.pdf>

building trust and demonstrating value, KYSTATS has taken on work normally split across numerous agencies, such as completing federally required reporting from across agencies, helping reduce the volume of administrative tasks and creating greater efficiencies and freeing up agency time for other key responsibilities.⁶

Opportunity for Improved Data Accessibility

Work Group feedback highlights significant gaps in data accessibility within the current Ecosystem, emphasizing the need for broader access and more inclusive participation. According to Work Group members, researchers and state and local government agencies are currently the primary beneficiaries of the Ecosystem. Surveyed Work Group members identified at least seven additional stakeholder groups who are served to some degree but may not be as well served as they should be, including business leaders, educators, families, and non-profit organizations. As each major system within the Ecosystem targets different sets of stakeholders, data accessibility emerged as a key concern throughout Work Group discussions. This feedback underscores a clear gap between those who currently have access to Virginia's data and those who should have access in the future, both within participating agencies and among Virginia's citizens.

As one Work Group member observed, "There isn't one place for someone to get the answers they want, so they have to go to multiple sources." The absence of a singular access point for data, combined with a general lack of familiarity with the Ecosystem, signals a clear opportunity for improvement. With different protocols, locations, and interfaces across systems, the Ecosystem is fragmented and difficult to navigate. As a result, 38% of Work Group members chose "Greater Availability" as a key feature needed to improve the Ecosystem.

"The data is there, but the problem is ensuring we have the opportunity to access it."

— *Work Group Member*

In addition to challenges around access, the Work Group also identified a gap between those currently being served and those who should be served. For example, while 87% of Work Group survey respondents believe that business leaders should be served by the Ecosystem, only 12% believe they are being served currently— a trend that holds true for other groups, including elected officials (42% believe they are currently served while 92% believe they should be) and educators (only 23% believe they are currently served while 87% believe they should be). This aligns with national critiques of the Ecosystem, such as from the Strada Education Foundation, who gave the Commonwealth the lowest possible rating for learner and earner

⁶ This information is based on proprietary research shared by the Work Group's expert partner, the Data Quality Campaign.

access to their own verified data.⁷ Furthermore, the absence of a formal mechanism for gathering feedback from stakeholders outside of participating agencies means that many stakeholders, including public citizens, lack the opportunity to advocate for increased data access or voice their needs or concerns.

The recommendations in this report provide a clear path forward for Virginia to expand data accessibility and ensure a more diverse array of stakeholders are served well by the system. By simplifying the pathways to access relevant data, the Commonwealth can meet the needs of Virginians more effectively and address the pressing questions of policymakers, educators, and business leaders alike.

State Example: Indiana's Career and Technical Education Employer Connector

In the June survey (see Appendix D for details), Work Group members expressed a desire for the Ecosystem to better serve business leaders. Indiana's Career and Technical Education Employer Connector offers a compelling example of how improved data accessibility can bridge the gap between education systems and the workforce. This tool allows employers to identify potential employees across the state by providing detailed information on students' career and technical education skills. Through a partnership between Indiana's SLDS (the Management Performance Hub) and the Governor's Workforce Cabinet, Indiana can align its talent pipeline with the needs of employers by ensuring timely access to relevant, actionable data. This example illustrates how Virginia could better serve business leaders and opportunity seekers by creating tools that simplify data access and meet the diverse needs of the Ecosystem's users, helping to address critical workforce gaps and support informed decision-making.⁸

Opportunity for Improved Data Tools and Usability

Virginia has the opportunity to significantly enhance the usability of its data ecosystem by developing more accessible tools that serve a broad range of stakeholders, empowering experts and the public alike to make data informed decisions. Some of the existing tools created within the Ecosystem are well received by Work Group members. Currently, VOEE produces tools like the College and Career Outcomes Explorer, a dashboard that "provides insights into the employment and career outcomes of graduates from Virginia's institutions of higher education."⁹ This interactive dashboard integrates data from over 650,000 graduates from Virginia's institutions of higher education. However, this type of tool is not common across the many different datasets available within the ecosystem. Work Group members advocated for more comprehensive and user-friendly tools that can serve the systems' stakeholders more effectively.

⁷ Strada Education Foundation. (2024, March). State outcomes index: Clear outcomes for Virginia. https://stradaeducation.org/wp-content/uploads/2024/03/SOI_ClearOutcomes_Virginia.pdf

⁸ Indiana Commission for Higher Education. (n.d.). Employer connector. <https://www.in.gov/che/cte/employer-connector/>

⁹ Virginia Office of Education Economics. (2024). Virginia college and career outcomes explorer. <https://voee.org/virginia-college-and-career-outcomes-explorer/>

“I’m a parent of a community college student and two high schoolers. Virginia Wizard is a clunky system. When you go to a community college [on Virginia Wizard], they don’t direct you to other places. **[This Work Group] is about making sure citizens have the tools they need instead of what is being pushed on them.**”

— *Work Group Member*

The Commonwealth has a unique opportunity to enhance the usability of its data by creating better tools that cater to a wider array of stakeholders. Many of the existing tools are designed primarily for researchers and data experts, leaving many stakeholders without useful tools to answer their questions. When asked about their satisfaction with the Ecosystem’s features and tools, 27% of Work Group member respondents were either somewhat or very dissatisfied, and 34% were neutral. When asked about features that would improve the Ecosystem, 38% of respondents highlighted the need for more user-friendly interfaces, while an equal number pointed to improved data visualization tools as a critical priority.

When asked about features that would improve the Ecosystem, 38% of respondents highlighted the need for more user-friendly interfaces, while an equal number pointed to improved data visualization tools as a critical priority. This indicates a significant opportunity to improve the alignment and usability of data tools across the various data systems to make them more usable for their stakeholders who often rely on these kinds of tools to make informed decisions.

State Example: California’s College Guidance Initiative

During the September Work Group meeting, Work Group members engaged in a presentation from Mary Ann Bates, Executive Director of California’s Cradle-to-Career (“C2C”) Data System. When legislators created the C2C, they included the California College Guidance Initiative (“CCGI”) as a contributing data source – allowing the combination of CCGI’s data on postsecondary institutions with data from the K12 and student aid systems. This will result in a single, user-friendly interface that students, families, and educators will be able to use to make informed decisions about postsecondary pathways. This integration resulted in over 400,000 applications for student aid by California students in 2023-2024 alone. California’s approach illustrates how Virginia could enhance the usability of its Ecosystem by connecting existing tools to empower a wide range of stakeholders to easily navigate data and make informed decisions.¹⁰

The recommendations in this report provide a pathway for Virginia to transform the Ecosystem into one that is not only more useful but also more widely used by producing a wider range of tools and dashboards that are accessible not just to researchers, but to all Virginians. In this future state, Work Group members foresee an Ecosystem that empowers all stakeholders—from policymakers to the general public—to access data

¹⁰ California College Guidance Initiative. (n.d.). What we do. <https://www.cacollegeguidance.org/what-we-do/>

that enables more informed decision-making and addresses a broader range of questions than the current system.

Recommendations: Summary

Recommendations for the General Assembly

1. **Streamline decision-making, reduce redundancies, and ensure greater coordination across education and workforce data systems by establishing the Virginia Education and Workforce Data Governing Board. The Governing Board will be charged with delivering on the state’s vision for education and workforce data, including identifying areas for consolidation, aligning resources, and improving overall system efficiency.**
 - a. The Governing Board should be composed of ten members or their designees.
 - The Secretary of Administration;
 - The Secretary of Commerce and Trade;
 - The Secretary of Education;
 - The Secretary of Labor;
 - The President and Chief Executive Officer of the Virginia Economic Development Partnership;
 - A representative from the Virginia House of Delegates, to be appointed by the Speaker of the Virginia House of Delegates;
 - A representative from the Senate of Virginia, to be appointed by the President pro tempore of the Senate of Virginia;
 - An ex officio non-voting member of the public not currently employed by a state agency with executive-level experience in either education or workforce, to be appointed by the Governor;
 - An ex officio non-voting member of the public not currently employed by a state agency with executive-level experience in either education or workforce, to be appointed by the Speaker of the Virginia House of Delegates; and,
 - An ex officio non-voting member of the public not currently employed by a state agency with executive-level experience in either education or workforce, to be appointed by the President pro tempore of the Senate of Virginia.
 - b. The General Assembly should require the Governing Board to:
 - Establish a process for electing a chair and vice chair and to establish their responsibilities;
 - Establish a process for appointing representatives to advisory committees and work groups;
 - Approve actions with a simple majority vote of all members;
 - Establish bylaws for the operations of the Governing Board;
 - Meet at least four times per year; and,
 - Hold meetings open to the public and allow public comment.
 - c. The Governing Board should be responsible for setting the vision and guiding the direction of the Ecosystem (including VLDS, VWDT, and VOEE) through a research agenda and have the

authority to make data collection recommendations to participatory agencies to meet the needs of the vision and research agenda.

- d. The Governing Board should report annually to the General Assembly and the Governor on topics including:
 - Successes, challenges, and impact of the data ecosystem;
 - The operating budget, major strategic finance decisions, and procurement decisions for all entities under its purview;
 - Capacity and resource needs; and,
 - Recommendations to improve the Ecosystem.

2. Ensure the Governing Board can deliver on the state’s vision by establishing an Office of Education and Workforce Data overseen by an Executive Director, initially housed in the Administration Secretariat.

- a. The Governing Board should appoint an Executive Director who is accountable to the Governing Board and the Governor. The Executive Director should lead the Office, direct the creation of any new data systems and maintenance of all systems overseen by the Office, oversee any staff assigned to or hired by the Office, and serve as the liaison for the Governing Board and the General Assembly.
- b. The General Assembly should require the Office to prioritize a set of core tasks within its first year to create greater efficiencies and eliminate duplication of existing efforts. These tasks should include:
 - Cataloging the various data systems within the Ecosystem, including their data assets, collection protocols, and privacy and security requirements;
 - Determining the operating budgets of the data systems within the Ecosystem, identifying areas for potential consolidation to create greater efficiencies;
 - Determining opportunities for consolidation across the Ecosystem, including areas such as data collection, analytics, reporting, tool development, and staffing; and,
 - Developing public-facing dashboards and tools that report on the outcomes of the Governing Board’s research agenda.
- c. The General Assembly should require the Office to evaluate and propose in its first two years a long-term location for the Office and its associated data systems. This evaluation should additionally include the reports, tools, portals, and other resources that the Governing Board should prioritize.
- d. The General Assembly should require participating agencies to share data with the data systems while adhering to privacy laws and to data sharing structures put in place by the Governing Board.

3. Elevate input from key stakeholders by charging the Governing Board with establishing an advisory committee and other work groups as needed.

- a. The advisory committee should include state agency leaders, local government agency leaders, business leaders, members of the public, and other individuals as directed and

appointed by the Governing Board, and be responsible for making recommendations to the Governing Board based on the research agenda established by the Governing Board.

- b. Work groups should include other government agencies and content experts to advise and support on tactical priorities such as data privacy, security, technical aspects of data migration, and the use of new technologies, such as AI.

4. Provide a sustainable funding source to allow the Office of Education and Workforce Data to perform their legislatively required duties by establishing a line item in the state operating budget.

- a. The budget appropriation should provide \$2 million toward the staffing and resources required to maintain the data systems and perform the duties assigned to the Governing Board and its Office.
- b. The General Assembly should require the Governing Board to complete a study of the cost and headcount of Virginia's current data systems to recommend the budgetary and staff capacity needed to maintain the data systems on a recurring basis, including opportunities for cost efficiencies across agencies and data systems.
- c. The General Assembly should charge the Governing Board with providing oversight of funding to ensure strategic alignment with the use of funds for data systems overseen by the Office.

Recommendations: Details

Through meetings, group discussions, interviews, surveys, and engagement with data experts from across the nation, the Work Group developed recommendations for the future of the Ecosystem. In order to create a more effective data ecosystem for all Virginians, this report recommends that the General Assembly take the following actions:

Recommendation 1: Streamline decision-making, reduce redundancies, and ensure greater coordination across education and workforce data systems by establishing the Virginia Education and Workforce Data Governing Board. The Governing Board will be charged with delivering on the state’s vision for education and workforce data, including identifying areas for consolidation, aligning resources, and improving overall system efficiency.

The Governing Board will serve as the centralized authority for the Ecosystem, responsible for all key decisions across data systems. Their primary role is to serve as a centralized authority for all integrated systems, charged with decision-making for all aspects of the system. With this authority, they create a clear, unified vision for the system through collaboration and coordination across agencies, ensuring continuity and consistency centered on the needs of all stakeholders. Leadership-level representation ensures that systems inputting data have a voice, while creating public transparency and holding the Governing Board accountable for decisions and outcomes.

Recommendation 1a: The Governing Board should be composed of ten members or their designees:

- **The Secretary of Administration;**
- **The Secretary of Commerce and Trade;**
- **The Secretary of Education;**
- **The Secretary of Labor;**
- **The President and Chief Executive Officer of the Virginia Economic Development Partnership;**
- **A representative from the Virginia House of Delegates, to be appointed by the Speaker of the Virginia House of Delegates;**
- **A representative from the Senate of Virginia, to be appointed by the President pro tempore of the Senate of Virginia;**
- **An ex officio non-voting member of the public not currently employed by a state agency with executive-level experience in either education or workforce, to be appointed by the Governor;**
- **An ex officio non-voting member of the public not currently employed by a state agency with executive-level experience in either education or workforce, to be appointed by the Speaker of the Virginia House of Delegates; and,**
- **An ex officio non-voting member of the public not currently employed by a state agency with executive-level experience in either education or workforce, to be appointed by the President pro tempore of the Senate of Virginia.**

Representation from both the Executive and Legislative branches will ensure that decisions affecting the Ecosystem are driven by Virginia’s leadership, not lower-level staffers who are not accountable to the public. The Secretariats on the Governing Board provide broad oversight of the vast majority of data feeding into the Ecosystem, including the Secretary of Education (who oversees VLDS) and the Secretary of Labor (who oversees VWDT), ensuring that decisions are made at the leadership level. The Legislative representation from the House and Senate will ensure any recommendations or decisions the Governing Board makes are informed by the citizens’ priorities via their elected representatives. Additionally, the inclusion of the President and Chief Executive Officer of VEDP will ensure that the Governing Board’s work is responsive to Virginia’s evolving business and economic interests. Giving the Governor, Speaker of the House, and President pro tempore of the Senate the authority to select qualified members of the public to add their perspectives to Governing Board discussions will further strengthen the transparency of the Governing Board and ensure that informed voices from the public are included in decision-making.

Recommendation 1b. The General Assembly should require the Governing Board to:

- ***Establish a process for electing a chair and vice chair and to establish their responsibilities;***
- ***Establish a process for appointing representatives to advisory committees and work groups;***
- ***Approve actions with a simple majority vote of all members;***
- ***Establish bylaws for the operations of the Governing Board;***
- ***Meet at least four times per year; and,***
- ***Hold meetings open to the public and allow public comment.***

Establishing processes for electing a chair and vice chair ensures consistent and accountable leadership of the Governing Board, balancing representation from elected and appointed officials while benefiting from the expertise of technical advisors. By adopting bylaws and requiring regular meetings, the Governing Board will create a clear operational framework that fosters continuity and transparency. By requiring a majority vote for all actions, the Governing Board ensures that key decisions are made transparently and at the leadership level, not delegated to lower-level staff. By holding at least four public meetings annually and allowing public comment, the Governing Board will enhance public accountability, ensuring stakeholders have a voice in the decision-making process and that the Governing Board’s actions are fully transparent to the public.

Recommendation 1c. The Governing Board should be responsible for setting the vision and guiding the direction of Virginia’s Education and Workforce Data Ecosystem (including VLDS, VWDT, and VOEE) through a research agenda and have the authority to make data collection recommendations to participatory agencies to meet the needs of the vision and research agenda.

One of the primary responsibilities of the Governing Board is to establish a unified, collective vision for the Ecosystem, ensuring all agencies and systems are moving toward shared goals by identifying those who should be served, the tools and outputs that should be produced, and the desired future outcomes. Work Group members worked collaboratively to propose the vision statement below. The Governing Board should adopt a vision statement to drive their work as one of their first matters of business once established.

Working Vision Statement

Virginia envisions an education and workforce data ecosystem that ensures every individual's unique journey, from early childhood through workforce, is informed by useful, relevant, and secure data. Stakeholders—including families, opportunity seekers, employers, educators, state and local agencies, policymakers, and researchers—can access and use timely and trusted information and tools to make informed decisions.

The Governing Board should also be responsible for producing a research agenda that aligns with this vision to ensure that the Ecosystem answers the most important questions for stakeholders. Work Group members proposed that this research agenda include the outcomes of various career pathways and educational outcomes for students. Although the Governing Board should ultimately decide the initial research agenda, the Work Group proposed a suggested research agenda for the Office to prioritize below.

Working Research Agenda

1. The impact of early education on K-12 and postsecondary outcomes.
2. The impact of K-12 education and workforce initiatives on short term outcomes (like graduation and credential attainment) and longer-term outcomes (like employment, college completion, and wage earnings).
3. Educational outcomes for students, including students at different levels of reading and math achievement, English language learners, students with disabilities, Pell grant recipients, and students participating in early childhood education.
4. The role of credential attainment in secondary and postsecondary education to workforce success.
5. The workforce impact of education completion across various institutions (high school, community colleges, four-year institutions, and other educational programs).
6. Outcomes for opportunity seekers, including the effectiveness of reskilling and upskilling programs, and their relation to job placement, wage earnings, and career advancement.
7. The intersection between higher education and workforce outcomes, including how well postsecondary education aligns with workforce needs and how higher education is responding to labor market trends.

The Governing Board should have the authority to make data collection recommendations to all participatory agencies to ensure that the data collected aligns with the vision and research agenda. This authority will enable the Governing Board to standardize and prioritize data collection efforts across systems, ensuring that the most relevant and impactful data is gathered to meet the Ecosystem's strategic goals.

Recommendation 1d. The Governing Board should report annually to the General Assembly and the Governor on topics including:

- **Successes, challenges, and impact of the data ecosystem;**
- **The operating budget, major strategic finance decisions, and procurement decisions for all entities under its purview;**
- **Capacity and resource needs; and,**
- **Recommendations to improve the Ecosystem.**

Annual reporting to the General Assembly ensures transparency around the Governing Board's decisions, funding allocations, and effectiveness, holding the Governing Board accountable for its use of resources and outcomes. This reporting will provide the General Assembly with a clear view of the Ecosystem's operation and effective use of funds and will empower the General Assembly to use this information to make necessary adjustments over time.

Recommendation 2: Ensure the Governing Board can deliver on the state's vision by establishing an Office of Education and Workforce Data overseen by an Executive Director, initially housed in the Administration Secretariat.

Although the Governing Board should set the vision and research agenda of Virginia's education and workforce data ecosystem, an entity is needed to make them operational. Housing this office within the Administration Secretariat, a non-contributing entity, allows the Office to serve as a neutral entity between the various agencies, which are within the executive branch, feeding data into the system without any one agency or system having undue influence and maintaining Executive authority over the Office and system.

“Having an independent entity would serve as a release valve for their own workforce within departments. This would give agencies a place to send everyone... The idea is to free up the experts in each agency to focus on more creative thinking and take Virginia to the next level.”

— *Work Group Member*

Recommendation 2a. The Governing Board should appoint an Executive Director who is accountable to the Governing Board and the Governor. The Executive Director should lead the Office, direct the creation of any new data systems and maintenance of all systems overseen by the Office, oversee any staff assigned to or hired by the Office, and serve as the liaison for the Governing Board and the General Assembly.

Appointing an Executive Director further supports the longevity and sustainability of the Governing Board's vision. The Executive Director can communicate and sustain a relationship with the Governing Board and General Assembly while not being subject to term limits or changing political environments. This position

should be a long-term position that should sustain beyond political leadership transitions at the state level, strengthening the sustainability of the Office and its work and allowing the Executive Director to execute the vision, research agenda, and core tasks beyond any one state political administration. This Executive Director should report directly to the Governing Board and have the authority to hire and fire personnel as needed to ensure that they sustain the Governing Board's vision and Office's charge. The Executive Director should be a civil servant and hired based on their knowledge, skills, and experiences working with and managing data systems, technology, or infrastructure to ensure they have the relevant technical expertise required to guide the Office.

Recommendation 2b. The General Assembly should require the Office to prioritize a set of core tasks within its first year to create greater efficiencies and eliminate duplication of existing efforts. These tasks should include:

- ***Cataloging the various data systems within the Ecosystem, including their data assets, collection protocols, and privacy and security requirements;***
- ***Determining the operating budgets of the data systems within the Ecosystem, identifying areas for potential consolidation to create greater efficiencies;***
- ***Determining opportunities for consolidation across the Ecosystem, including in areas such as data collection, analytics, reporting, tool development, and staffing; and,***
- ***Developing public-facing dashboards and tools that report on the outcomes of the Governing Board's research agenda.***

The General Assembly should require the Office to prioritize a set of core tasks within its first year to drive greater efficiencies, consolidate existing resources, and address the most pressing issues from its inception. One of the first priorities should be a comprehensive cataloging of all data systems within the Ecosystem, including a detailed inventory of their data assets, collection protocols, privacy and security requirements, and operational standards. This will lay the foundation for streamlining data management and ensuring consistent data practices across agencies, reducing redundancy and improving system alignment.

In tandem with this cataloging effort, the Office should conduct a thorough evaluation of the operating budgets for all data systems. This assessment will identify areas where consolidation can generate cost savings and improve operational efficiency, without compromising data quality or system integrity. Consolidation opportunities should focus on key areas such as data collection, analytics, reporting, tool development, and staffing, ensuring that resources are allocated effectively and duplication of effort is minimized across agencies.

Additionally, the Office should prioritize the development of public-facing dashboards and tools that align with the Governing Board's research agenda. These tools must be designed to meet the needs of a broad array of stakeholders by providing user-friendly, actionable insights into the outcomes of legislative initiatives, educational programs (including early childhood and higher education), and workforce development efforts. By taking on these tasks, the Office will immediately eliminate redundant processes,

consolidate resources, and create a more streamlined, effective, and efficient data Ecosystem from day one.

Recommendation 2c. The General Assembly should require the Office to evaluate and propose in its first two years a long-term location for the Office and its associated data systems. This evaluation should additionally include the reports, tools, portals, and other resources that the Governing Board should prioritize.

Best practices nationwide call for housing the Office within an Education or Labor Secretariat or an Information Technology or Administrative Office (like the Administration Secretariat). An evaluation to determine the most effective permanent location for the Office and its data systems, including whether it should remain within the Administration Secretariat, will ensure Virginia's long-term host has the necessary capacity and expertise to accomplish the Office's responsibilities.

Recommendation 2d. The General Assembly should require participating agencies to share data with the data systems while adhering to privacy laws and to data sharing structures put in place by the Governing Board.

To ensure the effective integration of data systems overseen by the Governing Board's system, data security and privacy must be paramount. Establishing policies that honor the unique requirements of each agency and state and federal privacy laws creates a secure, trusted environment for data sharing. The Governing Board should also establish a security plan to prepare for relevant contingencies and further protect the systems' data. The Governing Board should work with VITA and ODGA to develop these policies so that Virginia's existing practices and guidance are incorporated into this system, especially regarding alignment with industry standards and best practices, appropriate handling of data privacy and security, procurement rules, and dissemination of data sharing agreements with all participatory agencies.

Recommendation 3: Elevate input from key stakeholders by charging the Governing Board with establishing an advisory committee and other work groups as needed.

Advisory committees and work groups allow the Governing Board to gather input from a variety of stakeholders and data experts with different areas of expertise beyond that of Governing Board members. This establishes formal pathways of oversight and input on pertinent issues without reducing the Governing Board's capacity to execute its charge. Work groups further allow the Governing Board to adjust and adapt the system and its policies over time and direct inquiries into questions that can guide the systems' ability to meet changing needs and priorities.

Recommendation 3a. The advisory committee should include state agency leaders, local government agency leaders, business leaders, members of the public, and other individuals as directed and appointed by the Governing Board, and be responsible for making recommendations to the Governing Board based on the research agenda established by the Governing Board.

Advisory committees provide other relevant stakeholders a voice in the decision-making process. State agency leaders can give input on the status and needs of their individual agency, and data users and target stakeholders of the system, such as business leaders and members of the public, can use this position to guide the Governing Board and Office's work to better serve those they represent. Giving the Governing Board authority to add representatives of other groups according to changing needs of the system ensures all groups are impacting the development of the research agenda and receiving answers to their questions.

Recommendation 3b. Work groups should include other government agencies and content experts to advise and support on tactical priorities such as data privacy, security, technical aspects of data migration, and the use of new technologies, such as Artificial Intelligence.

Additional guidance and input from government agencies and content experts ensure system-wide alignment on the vision and technical aspects required for effectively operating the system. These technical experts can provide guidance on developments in privacy, security, and data integration, aiding the Governing Board in adjusting to changes in technology and priorities. By following this recommendation, Virginia can become the first state to codify the incorporation of generative AI into its education and workforce data and analysis systems and innovate in conjunction with the Governor's Executive Order 30, which implements AI Education Guidelines for the classroom and AI Policy and Information Technology Standards that safeguard the state's databases while simultaneously protecting the individual data of all Virginians.¹¹ The Governing Board should also establish a mechanism to create additional advisory committees and work groups to further support sustainability and provide representation to every participatory agency.

Recommendation 4: Provide a sustainable funding source to allow the Office of Education and Workforce Data to perform their legislatively required duties by establishing a line item in the state operating budget.

Ensuring adequate resources are allocated to the Governing Board and its Office ensures that the system has the capacity to accomplish its responsibilities. Appropriating these funds in the state operating budget provides consistent and sustainable resources for the Governing Board and Office that can be adjusted based on changing needs and priorities. This also allows the Governing Board to direct its members and supporting staff to carry out the day-to-day tasks required to effectively manage all systems, agencies, outputs, and data sharing responsibilities.

¹¹ Office of the Governor of Virginia. (2023). Executive order number thirty (2023): Establishing AI education guidelines and AI policy and IT standards for the Commonwealth of Virginia. <https://www.governor.virginia.gov/media/governorvirginiagov/governor-of-virginia/pdf/eo/EO-30.pdf>

Recommendation 4a. The budget appropriation should provide \$2 million toward the staffing and resources required to maintain the data systems and perform the duties assigned to the Governing Board and its Office.

This \$2 million budget appropriation is proportionate to other states with similar governance structures and is essential for supporting the new Office in managing and consolidating data systems efficiently¹². The funding will provide for key staffing, including an Executive Director and necessary personnel to oversee operations, drive strategy, manage and support the Governing Board, and foster community engagement. It will also support the development of new tools and outputs like public-facing dashboards to meet stakeholder needs. The funding can also support a legislative liaison staff position focused on coordinating and addressing legislative data requests relevant to the Ecosystem. Additionally, the Governing Board can assess, through a feasibility study, whether to integrate the Office's funding and staffing with existing systems like VLDS, VWDT, or VOEE, further enhancing efficiency and reducing duplication. As the Office delivers on its core tasks, the budget should be reevaluated to ensure it aligns with the evolving needs of the Ecosystem and reflects any cost savings from consolidations or efficiencies realized through its work.

Recommendation 4b. The General Assembly should require the Governing Board to complete a study of the cost and headcount of Virginia's current data systems to recommend the budgetary and staff capacity needed to maintain the data systems on a recurring basis, including opportunities for cost efficiencies across agencies and data systems.

The Governing Board should determine an initial appropriate budgetary request based on predicted costs of the future system and the current cost and staffing of the Ecosystem. This study should analyze staffing and potential data outputs, including portals and real-time data usage. Analyzing opportunities for cost efficiencies across existing systems and agencies ensures that the Governing Board and its Office are identifying any relevant resources and capacity that are already available, which should assist in carrying out the charge of the Governing Board and its Office.

Recommendation 4c: The General Assembly should charge the Governing Board with providing oversight of funding to ensure strategic alignment with the use of funds for data systems overseen by the Office.

Charging the Governing Board with oversight of funding ensures that there is clear guidance for the use of additional resources, such as federal grants, and leaders can consistently direct resources to priorities that align with the vision and research agenda established by the Governing Board. This oversight will also create a layer of accountability, ensuring that all expenditures are strategic, transparent, and effectively advancing the Ecosystem's goals. By aligning funding decisions with the Governing Board's long-term vision, the Commonwealth can ensure that resources are used efficiently and that investments in data systems drive measurable improvements in outcomes.

¹² This estimate is based on proprietary research shared by the Work Group's expert partner, the Data Quality Campaign. It included budget estimates from California, Kentucky, Maryland, Missouri, and Washington, D.C.

Conclusion

Virginia has spent more than a decade investing in strong data systems that connect data longitudinally. Its collective education and workforce data ecosystem is a critical asset to informing evidence-based policymaking and decision-making to advance education and workforce outcomes. However, the current system falls short of serving its stakeholders as effectively or as modernly as it could, and other states have made advancements in data access and effectiveness that the Commonwealth, through the recommendations in this report, can meet and exceed.

The recommendations in this report imply certain shifts within the Ecosystem. Primarily, that strategic decisions affecting data systems within the Ecosystem will be made by a single, unified Governing Board. Agency employees will also be expected to coordinate externally and internally, and funding decisions for all participatory agencies will be directed under the authority of the Governing Board. There will also be a centralized Office that is responsible for managing the needs and data requests of those within the Ecosystem. However, these recommendations do not suggest that any data systems will move from where they are currently housed in the immediate term. Nor do they suggest that agencies or systems must immediately adjust their personnel structures or current data sharing practices. It should also not be assumed that, moving forward, all data system decisions will be required to go through the Governing Board or its procedures.

The recommendations in this report chart a path forward for Virginia to solve its most pressing education and workforce data issues and create structures to ensure data can be accessed and used by the stakeholders who need it. Most urgently, the creation of the Governing Board will ensure the coordination and communication across data systems and across agencies needed to ensure Virginia is maximizing its already strong resources. By doing so, Virginia can secure its position as a national leader in leveraging data governance to solve pressing challenges in education and workforce, ensuring Virginia a long-term solution for how stakeholders—including families, opportunity seekers, employers, educators, state and local agencies, policymakers, and researchers—can get the insights they need to make informed decisions to their most pressing education and workforce questions.

Appendices

APPENDIX A: Work Group Membership

HB 1083 required the Work Group to be comprised of, at a minimum, a representative or their designee from the following:

- Secretary of Education;
- State Council of Higher Education for Virginia;
- Virginia Office of Education Economics;
- Secretary of Labor;
- Each of the participating agencies in the Virginia Longitudinal Data System;
- The Chief Data Officer of the Commonwealth;
- The Chair of the Senate Committee of Education and Health;
- The Chair of the Senate Committee on Finance and Appropriations;
- The Chair of the House Committee on Education; and
- The Chair of the House Committee on Appropriations.

The Secretary of Education then broadened the Work Group to include a wider array of stakeholders to contribute their perspectives and input. Over the course of the summer of 2024, over 70 individuals were asked to contribute their time or their opinions to this Work Group. Those individuals are listed below in alphabetical order by organization and last name.

- **Criminal Sentencing Commission:** Meredith Farrar-Owens, Chang Kwon
- **Department for the Blind and Vision Impaired:** Deborah Collard
- **Department of Aging and Rehabilitative Services:** Barbara Burkett, Kurt Sprenger
- **Department of Corrections:** Tama Celi, Chadwick S. Dotson, Brittney Via
- **Department of Education:** Andy Armstrong, Lisa Coons, Dave Myers, Toni Stroter
- **Department of Health Professions:** Barbara Hodgdon, Yetty Shobo
- **Department of Housing and Community Development:** Sara Dunnigan
- **Department of Juvenile Justice:** Leo Akujuobi, Nina Hyland, Monica McMillan, Jessica Schneider
- **Department of Social Services:** Mitzi Fletcher, Aline Jesus Rafi
- **Department of Veterans Services:** Eric Johnson, Patrice Jones, Chase Stanga, Chuck Zingler
- **House Appropriations Committee:** Kimberly McKay, Delegate Delores McQuinn, Zack Robbins, Delegate Luke E. Torian
- **House Education Committee:** Delegate Sam Rasoul
- **Office of Children’s Services:** Preetha Agrawal, Carrie Thompson
- **Office of Data Governance and Analytics:** Ken Pfeil, Chris Reilly, Marcus Thornton
- **Office of the Secretary of Administration:** Secretary Lyn McDermid, Bradley Philips, Carl Warf
- **Office of the Secretary of Commerce and Trade:** Maggie Beal, Secretary Caren Merrick, Juan Pablo Segura

- **Office of the Secretary of Education:** Secretary Aimee Guidera, Nicholas Kent
- **Office of the Secretary of Finance:** John Markowitz
- **Office of the Secretary of Labor:** Nicole Overley, Secretary Bryan Slater, George Taratsas
- **Senate Education and Health Committee:** Senator Ghazala F. Hashmi
- **Senate Finance and Appropriations Committee:** Wendy Kang, April Kees, Senator L. Louise Lucas, Kendra Shifflett
- **State Council of Higher Education for Virginia:** Tom Allison, Lee Andes, Scott Fleming, Tod Massa
- **Virginia Chamber of Commerce:** Eleni Poulos, Emily Webb
- **Virginia Community College System:** Catherine Finnegan
- **Virginia Department of Corrections:** Brittney Via
- **Virginia Early Childhood Foundation:** Kathy Glazer
- **Virginia Economic Development Partnership:** Jason El Koubi, Nicole Riley
- **Virginia Employment Commission:** Susan Landis, Demetrios Melis
- **Virginia House of Delegates:** Delegate Carrie Coyner
- **Virginia IT Agency:** Richard Matthews, Robert Osmond, Jessica Sudduth
- **Virginia Manufacturers Association:** Stacie Gordon, Brett Vassey
- **Virginia Works:** Leo Campos, Carrie Roth
- **Virginia Goodwill Network:** Steve Thompson
- **Virginia Office of Education Economics:** Todd Oldham

In addition, the Work Group included participation from a national organization with expertise in state longitudinal data systems:

- **Data Quality Campaign:** Kris Amundson, Camila Camborda, Paige Kowalski

Watershed Advisors facilitated the Work Group meetings, supported by Jill Pinsky, Andrew Shachat, Cameron Stokes, and Ian Trapp.

APPENDIX B: Participating Agencies in Virginia’s Education and Workforce Data Ecosystem

Participating Agencies	VLDS	VWDT	VOEE	Participating Agencies	VLDS	VWDT	VOEE
Department for the Blind and Visually Impaired	✓	✓		Virginia Department of Education	✓	✓	✓
Office of Children’s Services	✓			Virginia Department of Health Professions	✓		
State Council of Higher Education for Virginia	✓	✓	✓	Virginia Department of Juvenile Justice	✓	✓	
Virginia Economic Development Partnership		✓	✓	Virginia Department of Social Services	✓	✓	
Virginia Community College System	✓	✓	✓	Virginia Department of Veterans Services		✓	
Virginia Criminal Sentencing Commission	✓			Virginia Employment Commission	✓	✓	✓
Virginia Department for Aging and Rehabilitative Services	✓	✓		Virginia Goodwill Network	✓		
Virginia Department of Corrections		✓		Virginia Works	✓	✓	✓

APPENDIX C: Work Group Meeting Summaries

All materials from the Work Group meeting can be found in a [shared drive](#).¹³

Meeting	Summary
<p>Prior to June 21, 2024 Virtual Meeting</p>	<p>Pre-Reading:</p> <ul style="list-style-type: none"> • Grace’s Path to Success • The Virginia Longitudinal Data System • Getting the Facts Straight about Statewide Longitudinal Data Systems
<p>June 21, 2024 Virtual Meeting</p>	<p>Objectives:</p> <ul style="list-style-type: none"> • Align on the objectives and scope and sequence for the Virginia Education and Workforce Data Work Group • Understand the charge of the Work Group created by HB 1083 • Introduce participating members and the organizations they represent • Explore Virginia’s data ecosystem including VLDS , VOEE , VWDT, and the CDT <p>Agenda:</p> <ol style="list-style-type: none"> 1. Welcome and Introductions 2. Overview of Virginia’s Data Ecosystem 3. Housekeeping & Next Steps for Work Group
<p>July 26, 2024 In-Person Meeting</p>	<p>Objectives:</p> <ul style="list-style-type: none"> • Identify the current state and challenges with Virginia’s education and workforce data ecosystem • Explore best practices for state longitudinal data systems from across the nation • Define and align on the aspirational vision for Virginia’s education and workforce data ecosystem, including what it should be able to do, who it should serve, and what governance it needs <p>Agenda:</p> <ol style="list-style-type: none"> 1. Welcome and Purpose 2. Discussion of Survey Results: Current State and Challenges in Virginia 3. National Landscape Presentation by the Data Quality Campaign 4. State Example: Kentucky 5. Vision for Virginia’s Data Ecosystem Discussion 6. Next Steps for Work Group

¹³ Virginia Education and Workforce Data Ecosystem Work Group. (2024). *Work Group Share Drive*. <https://bit.ly/VAHB1083>

	<p>Presenters:</p> <ul style="list-style-type: none"> • Dr. Matt Berry, Executive Director, Kentucky Center for Statistics • Paige Kowalski, Executive Vice President, Data Quality Campaign
<p>September 5, 2024 In-Person Meeting</p>	<p>Objectives:</p> <ul style="list-style-type: none"> • Identify future needs and priorities for Virginia specific to its data ecosystem • Align on common priorities across organizations and agencies • Make a plan for moving forward, including legislative and budget considerations, to improve Virginia’s data ecosystem <p>Agenda:</p> <ol style="list-style-type: none"> 1. Welcome 2. Grounding in a Vision for Virginia’s Data Ecosystem 3. Presentation from the Data Quality Campaign: National Best Practices in Governance 4. Presentation from California’s Cradle-to-Career Data System: Best Practices in Action 5. Break and Grab Lunch 6. Developing an Action Plan 7. Next Steps <p>Presenters:</p> <ul style="list-style-type: none"> • Mary Ann Bates, Executive Director, California’s Cradle-to-Career Data System • Paige Kowalski, Executive Vice President, Data Quality Campaign

APPENDIX D: Work Group Survey Questions

June Survey

- What is your vision for the ideal state of Virginia's data ecosystem? How would you like your organization to be able to leverage the state's data ecosystem in the future?
- How familiar are you with the following entities within Virginia's broader data ecosystem?
 - Options:
 - VLDS
 - VWDT
 - VOEE
 - CDT
- For each of the following entities, select how often you use or interact with them
 - Options:
 - VLDS
 - VWDT
 - VOEE
 - CDT
- When you access state data, where are you accessing that data from?
 - Options:
 - VLDS
 - VWDT
 - VOEE
 - My organization's internal data
 - I am unsure which system(s) the data comes from
- How satisfied are you with the current features and tools available through Virginia's data ecosystem?
 - Options:
 - Very dissatisfied
 - Somewhat dissatisfied
 - Neither satisfied nor dissatisfied
 - Somewhat satisfied
 - Very satisfied
- What are the most important questions you believe Virginia's future data ecosystem should be able to answer?
- What do you see as the top 2-3 biggest challenges with Virginia's data ecosystem, as it relates to your organization?
- In your opinion, who does the current data ecosystem serve?
 - Options:
 - State and local government agencies
 - Cross-agency work groups and task forces
 - Elected officials and policymakers

- Business leaders
 - Researchers
 - Non-profit organizations
 - Educators
 - Other
- In your opinion, who should the current data ecosystem serve?
 - Options:
 - State and local government agencies
 - Cross-agency work groups and task forces
 - Elected officials and policymakers
 - Business leaders
 - Researchers
 - Non-profit organizations
 - Educators
 - Other
- What are the most important features needed for the overall improvement of Virginia's data ecosystem?
 - Options:
 - Automated Reporting
 - Customizable Dashboards
 - Data Visualization Tools and Other Approaches to Translate Data into Information
 - Governance (common terms and protocols between stakeholders around data)
 - Greater Availability of Data
 - Historical Data Analysis
 - Mobile Accessibility
 - Real-Time Data Access
 - User-Friendly Interface

Vision Statement for Virginia's Education and Workforce Data Ecosystem Survey

- Name
- Organization
- Title
- To what extent do you believe this draft vision statement is suitable for Virginia's education and workforce data ecosystem?
- What do you like about the draft vision statement that you would want to see included in any future vision statement?
- What do you not like about the draft vision statement that you would not want to see included in any future vision statement?
- What, if anything, is missing from the draft vision statement that should be incorporated into any future vision statement?

- Please select the top three stakeholder groups that should be included in the future vision statement from the list below:
 - Options:
 - Business leaders
 - Cross-agency work groups and task forces
 - Educators
 - Elected officials and policymakers
 - Media
 - Non-profit organizations
 - Opportunity seekers
 - Researchers
 - State and local government agencies
 - Students and families
 - Virginia citizens
- What are your general reactions to the draft vision statement?

September 5 Pre-Work Survey

- What do you see as the biggest challenges with Virginia's current education and workforce data ecosystem? What is currently not working?
- What resources (e.g., data, dashboards, tools) do you wish you had access to that you currently do not? How would access to those resources further your organization's work?
- What would success look like for you in the next 6-12 months if this Work Group is successful? What would be true?
- What are our biggest problems to solve? (Select all that apply)
 - Options:
 - Building Trust Among Stakeholders
 - Creating New or Updated Dashboards or Tools
 - Empowering a Transparent Decision-Making entity
 - Enabling Access to Datasets
 - Ensuring Data Privacy and Security
 - Other (please describe)

September 5 Post-Meeting Survey

- To what extent do you agree with the statement: This meeting met the outlined objectives.
- To what extent do you agree that the following agenda items were a valuable use of time:
 - Grounding in a Vision for Virginia's Data Ecosystem
 - Presentation from California's Cradle-to-Career Data System: Best Practices in Action
 - National Best Practices Presentation by DQC: Governance
 - Developing an Action Plan
- What question(s) do you most want prioritized and answered by any future Governing Board

recommended by this Work Group?

- What tool(s) or output(s) do you most want that should be prioritized by any future Governing Board recommended by this Work Group?
- What questions do you still have following the meeting?